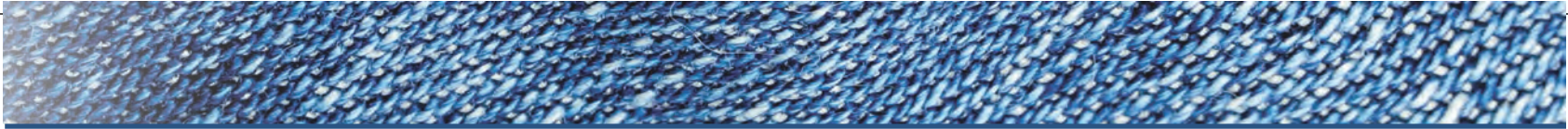


A MANAGERIAL ACCOUNTING PROJECT

Gatsby Manufacturing, Inc.

A. KAY GUESS AND SUSAN P. CONVERY





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Nature of the Gatsby Managerial Accounting Project

NATURE OF THE GATSBY MANAGERIAL ACCOUNTING PROJECT

This project is an integrative case that provides hands-on exposure to a simplified job costing system for GATSBY MANUFACTURING INC., a designer jean manufacturing company. These active-learning assignments demonstrate the flow of managerial accounting information and reinforce your understanding of managerial accounting concepts. You are provided with source documents for a small number of transactions for the company that occur during the period December 1 through December 31, 2019. You will assume the role of the management accountant and complete various documents, record transactions in job cost records, and reconcile the inventory and overhead control accounts before preparing an updated balance sheet and income statement at year-end. In one of the six assignments, you will record transactions in the General Journal and post them in the corresponding general ledger and subsidiary and control accounts. In other assignments, you will build on this information to address “what if” managerial questions about variable costing, alternative overhead drivers, and budgeting for operations and capital expenditures. Your instructor may assign any or all of these assignments.

PREPARATION

The following will familiarize you with the overall project, simplifying your effort and insuring a better solution.

1. Read the Introduction and Accounting System and Policies sections carefully so you are familiar with Gatsby’s products, processes, and accounting information system. Go to each of the websites noted in the footnotes to better understand the industry context in which this company operates.
2. Look over the Source Documents and scan the Transactions List provided in the Documents Folder for the month of December 2019.
3. Read over the Core Concept Reviews, which are inserted within the assignments as a quick review of concepts that are more fully developed in a principles of management accounting textbook.
4. Preview the requirements, questions, and problems for each assignment.
5. Review your instructor’s directions about which Assignments are done manually and/or in Microsoft Excel.

IN ORDER TO SUCCESSFULLY ACCESS THE EXCEL SPREADSHEETS AND ONLINE HOMEWORK REQUIRED FOR THIS PROJECT, YOU WILL NEED TO CAREFULLY READ AND APPLY THE STEPS DESCRIBED BELOW AND DETAILED IN THE E-MATERIALS PROVIDED ON THE ARMOND DALTON RESOURCES WEBSITE.

- ▶ Go to www.armonddaltonresources.com and click on E-Materials.
- ▶ Use the E-materials drop-down menu and select Gatsby Manufacturing.
- ▶ Follow the instructions in the E-materials to register on the Armond Dalton Resources website and download the Gatsby Manufacturing Excel spreadsheets.

INTRODUCTION

OBJECTIVES

If you carefully complete the job costing system procedures for GATSBY MANUFACTURING INC., you will become more knowledgeable about several aspects of managerial accounting and how documents and transactions flow through an accounting and manufacturing system. This knowledge will aid you in the study of managerial accounting, cost accounting, and financial accounting.

The project supplements the work in your managerial accounting course. Completing the requirements for GATSBY MANUFACTURING INC. assignments will reinforce the concepts you are studying in class. You will play the role of the managerial accountant providing data to decision makers.

Learning Objectives: Upon completion of these assignments, you will be able to:

1. Reconcile manufacturing-related inventory accounts with job cost sheets, and trace transactions through source documents to job cost sheets.
2. Record cost accounting information into the General Journal and General Ledger.
3. Prepare financial statements for a manufacturing company at the end of a year.
4. Contrast different costing approaches related to overhead and overhead drivers for multi-product companies.
5. Prepare a master budget for a manufacturing company with two divisions and analyze variances.
6. Evaluate a capital budgeting decision made by managers.

BENEFITS OF STUDYING SOURCE DOCUMENTS

Completing this hands-on project will help you:

- visualize sources of information about transactions in which a manufacturing company is engaged,
- understand how all the parts of a cost accounting information system fit together, and
- create a job cost system to effectively and efficiently analyze performance.

“Learning by doing” assignments, in which students physically trace source documents through the accounting system, provide an opportunity to see the risk of errors at each step along the way. This awareness will help students to understand why managerial accountants build internal controls into the accounting system, minimizing these risks. Reducing errors results in more reliable information, leading managers to make better data-driven business decisions.

Introduction

USE OF TECHNOLOGY

Each of the assignments in this project can be completed entirely by hand, entirely in Excel, or a combination. Solutions to the assignments submitted electronically to the Armond Dalton Resources website are auto-graded (if objective questions) or graded by instructors (if discussion questions and problems). Instructors decide on the approach and level of technology most appropriate for each class.

Excel templates are provided for the journals, ledgers, documents, and job cost sheets to facilitate completing Assignments 1, 2, and 3. These templates were designed to capture information in a more efficient way than a manual system but are not as automated as an integrated computerized accounting information system. Assignments 4, 5, and 6 are designed to be done in the Excel templates so that functions such as Pivot Tables, VLookup, IF, and Goal Seek can be used to address “what if” questions and make comparisons across alternatives that managers are considering.

“No one uses source documents anymore—everything is scanned!” We’re not surprised if this is your initial reaction to the project. Most companies, large and small, have moved away from capturing information with manual entries on paper source documents. They have digitized paper documents to paperless e-systems. Documents can be scanned and information can be retrieved from technology-enabled cards (e.g., EMV smart cards, magnetic stripes, RFID, and chips) and other real-time systems. But even in these high-tech environments it is important that transaction information is reliably captured at its source. Data entry screens are designed to capture all the information on traditional paper source documents, and then some. Companies still refer to “purchase orders” or “sales invoices” even though there may no longer be differently colored, multi-copy paper forms. This project uses documents to help visualize information captured at the source of the transaction.

MATERIALS AND DOCUMENTS

Two components of the project are in the envelope:

1. **Booklet** entitled GATSBY MANUFACTURING INC. — Introduction; Background on Gatsby’s System and Policies; Assignments 1 through 6; and Journals, Ledgers, and T-accounts.
2. **Documents Folder** — Chart of Accounts, Adjusted Trial Balances, Transactions List, Source Documents, Job Cost Sheets, Financial Statements, and divider tabs:

Divider Tab Labels	Description of Contents
Job Cost Sheets (WIP)	Job cost sheets for work-in-process
Job Cost Sheets (FG)	Job cost sheets for finished goods
To/from Outsiders	Purchase order, employee time record summary report, sales invoice, vendor invoice
Accounting	Customer order form, materials requisition, receiving report
Books/Financial Statements	General Journal, General Ledger, T-accounts (for cost-related accounts), adjusted trial balance, income statement, balance sheet



Introduction

The Armond Dalton Resources website (www.armonddaltonresources.com) contains the Excel templates, Assignment Questions and Problems (for retrieval and submissions), and alternative versions of the Transactions List.

SUGGESTIONS FOR EFFICIENCY

- Be sure to refer to the cost sheet and other information in the Costs and Selling Prices section for important data to be used in preparing source documents and in recording transactions.
- File all documents neatly in the documents folder in the appropriate divider tab in document number order.
- Cross-reference transactions between the journals and ledgers.
- Use Excel worksheets whenever possible.
- Record any manual entries in pencil to make changes easier.
- Follow your instructor's directions about which assignments to complete and whether they are to be done manually or in Excel.

GATSBY'S ACCOUNTING SYSTEM AND POLICIES

BUSINESS OVERVIEW

GATSBY MANUFACTURING INC. began making vintage jeans in 1990 when Joan Gatsby, a clothing designer and tailor, recognized a demand for custom vintage designer jeans. Scotch & Soda, Abercrombie & Fitch, GAP, True Religion, AG, Buckle, and JBRANDS are some real-life retailers that order custom designer jeans from manufacturing companies. The market for vintage designer jeans has grown beyond movie stars, pop stars, and other celebrities to a much wider audience. Gatsby, a fictitious company, is based in New York City and creates its jeans from the initial design stage all the way to the finished product. Gatsby's production run for each customer order may range from 2,000 to 20,000 pairs. The companies that buy from GATSBY MANUFACTURING INC. sell the jeans for hundreds of dollars a pair, a price customers are willing to pay for their favorite label.

Over the last almost three decades, Gatsby has grown the business and currently has 86 employees. All of the company's production and administrative activities are in one building in NYC's garment district (2002 Warehouse Ave., NYC, NY 10022). The company remains focused on high-quality production of unique designs, and quality control inspectors are an integral part of the operation. Joan Gatsby owns all the stock in this corporation, which is treated as a pass-through entity for tax purposes. Ms. Gatsby receives a salary as the designer, and her retirement strategy has been to retain earnings within the corporation rather than taking annual dividends. Her vision is to purchase a specialized piece of equipment to produce a second product line in addition to jeans.

History of Denim. There are many stories about the history of denim¹ and the world-wide jean market. Annually, there are approximately 415 million pairs sold in the United States and a world-wide market of approximately \$40 billion. Denim comes from the name of a sturdy fabric called serge, originally made in Nimes France (hence "de nim"), by the Andre family.² Denim is a rugged cotton twill textile, in which the weft passes under two or more warp fibers. This weave produces the familiar diagonal ribbing identifiable on the reverse side of the fabric. The twill weave was just the fabric that Levi Strauss and a Nevada tailor needed to make strong workpants for gold miners in the 1880s. They patented the process of putting rivets on stress points of a workman's waist-high overalls, commonly known as jeans.

Cowboys in the 1930s could be seen wearing jeans in western movies. During World War II, American soldiers wore jeans when they were off duty as a casual, comfortable item of clothing. After the war, Wrangler and Lee began to compete with Levi's for a share of the international market. In the 1950s, James Dean popularized jeans as a symbol of teenage rebellion in the film *Rebel Without a Cause*. Young people in the 1960s and 70s personalized their jeans with embroidery and paint. In the 1980s, jeans fashion designers like Gucci started making jeans with their own labels. Jeans were now fashionable and diverse: styles included skinny jeans, acid

¹ Downey, Lynn 2014. A Short History of Denim, www.levistrauss.com/wp-content/uploads/2014/01/A-Short-History-of-Denim2.pdf

² "How the birthplace of denim is making jeans again," article by Joshua Thorpe, business reporter, BBC News, October 4, 2016, accessed at <http://www.bbc.co.uk/search?q=sagot>

Gatsby's Accounting System and Policies

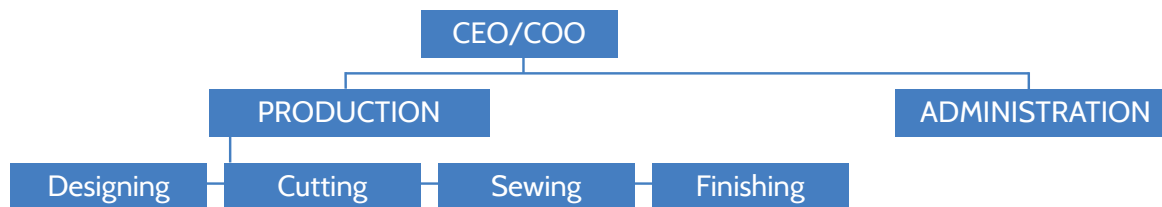
washes, and denim jackets. In this century, denim jeans can be found in different finishes, cuts, shapes, and styles and in the form of aged, authentic, and vintage jeans. Big-name designers like Chanel, Dior, Chloe, and Versace added jeans to their collections. In recent years, a new denim fabric entered the market that combined cotton and lycra spandex. It was incredibly soft and designers became known for their wide variety of styles. There never seems to be an end to the many designs and fits that designers can create and customers want in their jeans.

PERSONNEL STRUCTURE AND RESPONSIBILITIES

In addition to Joan Gatsby, the owner/designer, there are currently 82 employees at GATSBY MANUFACTURING INC. involved in the production of the product.

- Two supervisors (who act as purchasing agents and production managers on different jobs)
- 50 sewing machine operators (who also do cutting)
- 28 finishing machine operators
- Two quality control inspectors

There are also three people in the administrative offices (who also receive supplies and package completed orders for delivery) for a total of 86 employees. One of these people is you, the managerial accountant.



MANUFACTURING PROCESS

The activities in Gatsby's manufacturing process can be categorized into four processes: designing, cutting, sewing, and finishing.

Designing. An order arrives from a customer for a specific design of vintage jeans. Joan Gatsby discusses the design with the customer. The design department provides sketches to the customer based on his or her specific criteria. When all agree, the design is input into a computer. The computer prints out the design, enabling workers to make and finish the jeans correctly. The program also allows the designer to configure the layout of the jeans in a manner that will create the least amount of denim waste when jeans are cut. The program produces a layout, which is then printed on pattern paper.

Cutting. GATSBY MANUFACTURING INC. buys high-quality cotton denim imported from overseas from a supplier, Denim Inc., in large 1,000-pound rolls. The paper pattern is laid onto denim layered absolutely flat by a computerized machine—so as many as 100 pairs can be cut simultaneously. Machine operators hand direct a large Gerber³ cutting machine that cuts out each pattern piece from the stack of denim. Jeans have approximately 19 pieces of pattern per pair. That means it takes 19 different pieces of denim to make one pair of jeans. Once the jeans are cut, the pieces are separated and sent to different sewing machine stations. It takes approximately 16 hours per order to design, set up, and cut a custom order.

Sewing. There is a sewing machine specific to each step in the production process. A machine operator works on only one particular part of the jean. First, the rear pockets are embroidered (if the design calls for it). The pockets are pressed and hand placed and sewn on the jeans. Jeans are sewn with one-hundred percent cotton thread. Once the rear pockets are attached, the jeans go to the next station, where the inseam is sewn. Seams are sewn on the wrong side and flat felled, which means that no raw edge will be on the inside of the jean. At the next station, zippers are inserted with the zipper pull and zipper stop positioned and sewn in place. Next, the side seams, waist band, and belt loops are sewn at their respective stations. Closures are then added (e.g., a button hole or rivet). If buttons are used as fasteners, they are sewn by hand. The jeans are made on the reverse side and turned with a machine. Quality control inspection is done throughout the process. Once the sewing is completed, the jeans are laundered through a finishing process. Each of the sewing processes requires an experienced human touch. This labor-intensive operation requires craftsmen proficient in operating the machines, so that defects are kept to a minimum.

Finishing. Jeans are hung on a conveyor belt that takes them to the finishing department. The direct labor in the finishing department continues work on the jeans so they conform to the design. The work includes scrubbing with chemicals to create a faded look, creating “holes” in the jeans, taking them through a volcanic rock tumbling process, or doing other tasks directly on the jeans to designer specifications. After drying, workers place the legs of the jeans on a machine that blows hot air and steam so the denim will be wrinkle-free. The product undergoes a final inspection and excess threads are trimmed. Hang tags and names are added. The jeans are then boxed and labeled according to their job-order number and await shipment to the customer.

ACCOUNTING PROCESSES AND SOURCE DOCUMENTS

Information from transactions with customers, vendors, employees, and others is captured at the source on a document (or machine-readable ID card for employees). Internal controls designed into the accounting process include sequentially numbered documents, descriptive input boxes on these documents, and the name or initials of the person accountable for that stage of production.

³ See www.gerberetechnology.com for a description of the type of Gerber Cutter machinery that GATSBY MANUFACTURING INC. might use.

Gatsby's Accounting System and Policies

The process to record costs in GATSBY MANUFACTURING INC.'s accounting information system starts with a request from a customer to do a job. This information is captured on a **customer order** form. The customer either meets the designer at the headquarters in NYC or communicates electronically. When the customer approves the design, the designer creates a blueprint with a project plan for materials and labor that will be required to manufacture the product. A cost sheet could identify each material needed with quantity and cost per unit for each order. For example, each pair of jeans requires denim, a zipper, thread, snaps, rivets, and embroidery or other applique. Based on the specifications of the job, a bill of materials could be prepared. For simplicity in this project, that level of detail for each order is not captured. Based on customer order forms, raw materials, such as denim and notions, are ordered on a **purchase order** form if a sufficient quantity is not already on hand.

Product costs. *Direct material* is the first of three major components of the cost of manufacturing jeans. The production supervisor prepares a **materials requisition** form to bring the requisite quantity of raw materials to the production floor. There is a raw materials storeroom in the building so that an adequate number of denim rolls are on hand at any time. The company wants to be "lean," so materials are shipped to the company as close as possible to the date when they will be used. When the supplies truck arrives at the factory shipping dock, an administrative receiving clerk checks the materials requisition form against the items on the truck to be certain everything has been delivered. He or she signs the **receiving report** and attaches a copy of that to the purchase order form to later be matched to the **vendor invoice** sent by the vendor to the company. These forms go to the accounting office where a check request will be generated unless an electronic payment is set up with the vendor.

Data from the materials requisition form are entered on the customer's **job cost sheet** as direct materials because this cost can be directly traced to a particular customer. The requisition number from the materials requisition form appears on the job cost sheet to make it easier to identify the source document, should the accountant or others need to refer back to the original to verify costs and materials.

Direct labor is the second of three cost components of a product, and, as with direct materials, it can be directly traced to each job. In GATSBY MANUFACTURING INC.'s case, this is the cost of sewing and finishing machine operators. Each of the employees swipes an identification card through a machine each time he or she starts and ends work for a particular job. The device sends the information directly to a computer housed at an external payroll service company. This company tracks information for creating payroll checks for employees, recording payroll taxes for Gatsby, and charging direct labor to job cost sheets. At the end of each day, the payroll company transmits direct labor information back to Gatsby to charge sewing and finishing direct labor costs to work-in-process inventory and job cost sheets. At the end of a month, the payroll service sends an **employee time record summary report** to Gatsby that includes payroll information for all employees.

Manufacturing overhead (MOH) is the third cost component of a product that is recorded on the job cost sheet. Manufacturing overhead includes costs that are integral to producing the product but cannot easily be directly traced to each customer's job. MOH includes indirect materials (such

as thread and other notions), indirect labor (such as supervisors and quality control inspectors), and factory building and equipment costs (including depreciation). The employee time record summary report sent to Gatsby from the payroll service company at the end of the month provides information related to indirect labor. GATSBY MANUFACTURING INC. chose direct labor cost as the most appropriate driver to represent what causes overhead costs. One plant-wide predetermined overhead rate is calculated based on an estimate of manufacturing overhead for the coming year and an estimate of the direct labor cost for the year. Overhead is then applied to jobs as direct labor cost is incurred and charged to job cost sheets.

Finished goods inventory. Once the job is complete and all costs are recorded on the job cost sheet, the job is moved from work-in-process inventory to finished goods inventory. Job cost sheets follow the jobs through the process until the sale is complete and the job is delivered. Since the business produces a custom job for each customer, jobs are generally shipped directly to the customer when completed, which is reflected as a reduction of finished goods inventory and an increase to cost of goods sold. Jobs not shipped immediately can be stored for short periods of time.

When jobs are completed, the average cost per unit is recorded on the job cost sheet based on the total cost for the job and the number of units produced. The average cost is used to determine whether the company made a gross profit on the contract. For example, if a job costs \$20,000 to make 1,000 units of product, the cost per unit is \$20. If the job called for the customer to pay \$30,000 for the job, the profit is \$10 per unit. Why is that information important? If we projected a target profit of \$11.50 per unit, we will have to either charge more for future jobs or reduce costs in order to meet an overall goal of \$11.50 per unit.

When the job is ready to be delivered to the customer, a four-part ***sales invoice*** is prepared by the Accounting department. The first copy is retained in “Accounting” to be matched with job cost sheets and related documents so the auditors can do their tests of transactions in the accounting records. Information on job cost sheets is invaluable to improving operations and planning for the future. The second copy is sent to the shipping area to trigger the order be boxed and readied for transport to the customer via the mode agreed upon (e.g., rail, air, truck). The third copy serves as a “packing slip” and is inserted in one of the boxes to be shipped. Once shipment takes place, the finished goods inventory account will be credited for the amount of the job and cost of goods sold will be debited for that same amount. The fourth copy of the sales invoice is sent in a separate envelope to the customer. The invoice is for the agreed upon price for the job—not Gatsby’s cost for the job. The customer will send Gatsby a check for the invoice as billed within 30 days (n/30). This could be an electronic transfer of funds to Gatsby’s bank account. The difference between the cost of goods sold and the invoiced selling price to the customer represents the gross profit Gatsby earned on the job.

COSTS AND SELLING PRICES

GATSBY MANUFACTURING INC. uses a job cost system where each customer order is considered a production run and is viewed as a “job” or cost object. For simplicity, Gatsby charges the same amount of direct material and direct labor to each job.

Gatsby's Accounting System and Policies

Cost Sheet for One Pair of Jeans

	Quantity	Cost per Unit
Direct materials — denim	*	\$15 per pair
Direct labor — sewing	½ hour per pair	\$20 per hour
Direct labor — finishing	¼ hour per pair	\$15 per hour

*For simplicity, the yards of denim needed for each pair of jeans are not provided for this project as that would require more details about each order (e.g., sizes, men/women).

Manufacturing overhead is charged to jobs based on a predetermined rate of 20% of direct labor cost.

Manufacturing overhead:	Quantity	Cost per Unit
Designer	1 person @ 35 hours per week	\$30 per hour
Factory supervisors	2 persons	\$60,000 per person per year
Inspectors	2 persons @ 40 hours per week	\$20 per hour per inspector

As seen in the earlier section on Personnel Structure and Responsibilities, 50 employees are sewers and 28 employees are finishers, each of whom work 40 hours per week.

The selling price Gatsby charges its customers ranges from \$40 to \$50 per pair of jeans. Terms are n/30; that is, the full price is expected to be paid within 30 days. Goods are shipped FOB (free on board) shipping point, so the customer assumes legal title and responsibility for shipping and insurance costs as soon as Gatsby places the goods on the carrier. Gatsby prepares a sales invoice sent to the customer when the goods are delivered, which includes the customer's assigned account number.

INVENTORY PROCEDURES

There is beginning and ending raw materials inventory of denim. The oldest inventory is always used up first. Each job is a custom job that is shipped as soon as it is completed. Gatsby espouses a "lean" management philosophy; however, it does have some space in the production area of the building in case a job is finished in one month and sold and delivered the following month. There is beginning and ending work-in-process inventory each month. Notions used in the production process, such as thread, zippers, snaps, and rivets, are charged to manufacturing overhead as indirect costs as incurred. The quantity of these supplies on hand is relatively stable from month-to-month, and their value is considered nominal; therefore, no supplies/notions inventory is recorded. A box that holds 24 to 36 pair of jeans costs approximately \$1.00. The cost of these shipping boxes could be traced directly to each job; however, the costs of doing so seem to outweigh the benefits, so boxes are charged to manufacturing overhead as incurred. No inventory of boxes is recorded.

PAYROLL

The company contracts with Apex Payroll Services as an external payroll service provider. Apex collects data electronically from employees as described in the Product Cost section on direct labor. Information is sent daily from the payroll company to Gatsby so the company can charge direct labor to job cost sheets as incurred. Apex sends an **employee time record summary report** at the end of each month with payroll information about all employees, including indirect laborers, such as supervisors and inspectors and the designer. This information includes payroll tax expense, which is recorded by Gatsby as either direct labor, indirect labor, or administrative salaries, depending upon each employee's classification and job duties. Accrued payroll and related taxes for direct labor are paid electronically on the first day of the next month. Payroll costs and related taxes for indirect labor and administrative employees are recorded and paid at the end of the month. For simplicity, the names of employees, details about their hours worked, and calculation of payroll taxes are not included.

OVERHEAD

Indirect materials, indirect labor, factory occupancy costs, and equipment costs (which include depreciation expense) are charged first to the Manufacturing Overhead control account. The company has used direct labor cost as its one plant-wide driver in applying manufacturing overhead to jobs for all the years it has been tracking costs by jobs. Although the company has a variety of custom jobs, all jobs are similar in the amount of machine and operator time needed to complete a pair of jeans. The company's predetermined overhead rate has been 20% of direct labor cost, which over time has resulted in a relatively small amount of under- or over-applied overhead at the end of each year. Overhead is applied to jobs as direct labor is charged to the job.

EQUIPMENT AND BUILDING

The company owns a building in the garment district of NYC, which is a little more than one-half depreciated with an outstanding mortgage. The annual amounts of depreciation expense for the building and all equipment are provided below. The straight-line depreciation method is used; however, to maintain focus on the managerial issues of this project details about estimated life or salvage value are not provided. Assume that annual depreciation expense is allocated evenly across the year.

	ANNUAL
Sewing machines	\$15,000
Washers and dryers	\$10,000
Other equipment	\$10,000
Computers	\$10,000
Building	\$24,000

Gatsby's Accounting System and Policies

Design and production activities occupy 75% of the building and the remaining 25% is used for administrative tasks. Gatsby owns its own production equipment (e.g., sewing machines, washers and dryers, and other equipment). Computers are used 75% in production and 25% in the administrative functions. A summary follows:

EQUIPMENT			BUILDING	
Used in Production	Computers		75% MOH	25% Administrative
100% MOH	75% MOH	25% Administrative		

Accumulated depreciation presented on the balance sheet is separated into that which relates to the building and that which relates to equipment.

CUSTOMERS AND VENDORS

The company has open job orders with six (fictitious) customers during November and December 2019. These are steady customers who also placed orders throughout the year. Descriptive information about the customers needed for source documents are presented here:

Customer	Cust. No.	Contact Person:	Address:	Mode of Delivery
Abernathy & Fetch	51687	Lily Zhou	142 Garden; Okemos, MI 48864	Air
Whiskey & Soda	39664	Ann Lang	339 SunBelt; Phoenix, AZ 85009	Rail
K. Brand	21965	Juan Cortez	287 High Street; Seattle WA 98101	Truck
AH	68753	Ali Khan	784 Orange Dr.; Naples, FL 34116	Truck
Belt Buckle	95882	Joe Smith	654 K St.; Washington, DC 20376	Air
Cool Creed	48736	Tina Pelski	761 Peachtree; Atlanta, GA 30308	Rail

The company buys denim from Denim Inc. and notions from Notions Inc. Purchases are made with terms n/30, and Gatsby always meets those terms. These companies have always supplied quality materials at competitive prices. Gatsby has contracted with Apex Payroll Services for its payroll tasks. Many payables are paid for electronically, which allows for payment to be scheduled for the first of the month regardless of whether that falls on a business day or not.

JOURNALS, LEDGERS, AND JOB COST SHEETS

GATSBY MANUFACTURING INC. records all transactions chronologically in a General Journal. The company does not use special journals (e.g., sales, purchases, cash receipts, cash disbursements, or payroll). Journal entries are posted to the appropriate General Ledger accounts as they occur. Job cost sheets are used as subsidiary ledgers to the Work-in-Process Inventory account. T-accounts are used as a supplemental way to illustrate the cost and inventory-related accounts in the General Ledger. This managerial accounting project focuses on cost accounting, so simplifying assumptions are made that customers pay in full upon receipt of their order, and

Gatsby's Accounting System and Policies

Gatsby pays its vendors each month. Given those assumptions, there is no need for subsidiary ledgers for accounts receivable or accounts payable.

CALENDAR

GATSBY MANUFACTURING INC. has a calendar year-end. Information for the first 11 months of the year is captured on the adjusted trial balance as of November 30, 2019. Transactions are provided for the month of December 2019. On December 31, 2019, adjusting journal entries are recorded for the month of December and for any under- or over-allocated manufacturing overhead at year-end. A master budget is prepared for the upcoming calendar year 2020. The table below illustrates three time periods that relate to assignments in this project.

January through November 2019	December 2019
January through December 2020	

MONTH AND YEAR-END PROCEDURES

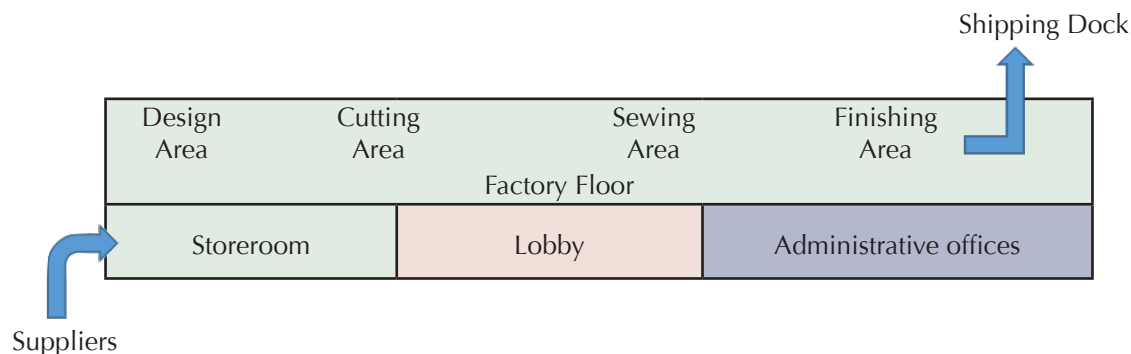
At the end of each month, overhead is accrued for various manufacturing-related expenses, other than indirect labor, in the amount of \$15,000. Depreciation expense on the equipment and building is recorded based on the information provided earlier in the Equipment and Building section.

Financial statements are prepared as of the end of each month, but the temporary operating accounts are not closed out until the end of the calendar year. There will be an adjusted trial balance at the end of each month that reports all revenues and costs and expenses for the year up to that date.

At the end of the year, GATSBY MANUFACTURING INC. closes out its temporary accounts to retained earnings in order to start the next accounting period with a zero balance in the revenue and expense accounts. Year-end procedures include determining over- or under-applied manufacturing overhead and adjusting the Cost of Goods Sold for the entire difference.

SYSTEMS FLOWCHARTS

This graphic shows where product costs and period expenses occur within the building's floor plan. The building is about 10,000 square feet. The administrative offices and lobby represent 25% of the square footage. The other 75% relates to the production facility (or factory floor).



Gatsby's Accounting System and Policies

Product costs occur on the factory floor and the storeroom (since it serves as a raw material warehouse for denim). Period expenses occur in the administrative offices and include selling expenses.

Flow of manufacturing costs. This diagram shows the flow of product costs through the accounting information system using T-accounts to represent General Ledger pages for manufacturing related cost and inventory accounts. The left side represents an increase to an expense or asset account, and the right side represents a decrease.

Material Inventory-Denim		Work-in-Process Inventory		Finished Goods Inventory	
Beg. balance		Beg. WIP bal.		Beg. FG bal.	
+ Purchases	Denim used in production →	+ DM used			
<u>End. balance</u>			Cost of goods manufactured →	Cost of goods manufactured	COGS
				<u>End. FG bal.</u>	
		+ Direct labor			
Manufacturing Overhead					
Actual MOH	Applied to jobs using POHR →	+ MOH applied			
		<u>End. WIP bal.</u>			
				Cost of Goods Sold	
				COGS	Closed out to RE

Abbreviations:

- DM is direct materials
- MOH is manufacturing overhead
- WIP is work-in-process inventory
- FG is finished goods inventory
- COGS is cost of goods sold
- POHR is predetermined manufacturing overhead rate
- RE is retained earnings

ASSIGNMENTS

Following is an overview of assignments with related Core Concept Reviews, which serve as a quick reference of the underlying concepts developed in principles of managerial accounting textbooks.

- 1 Reconcile manufacturing-related inventory accounts with job cost sheets and trace transactions through source documents to job cost sheets. 17

Core Concept Reviews:

- Job-Order Costing
- Product and Period Costs
- Applying Manufacturing Overhead
- Source Documents and Internal Controls

- 2 Record cost accounting information into the General Journal and General Ledger. 25

Core Concept Reviews:

- Accounting Cycle
- Adjusting Journal Entries
- Closing Journal Entries

- 3 Prepare financial statements for a manufacturing company at the end of a year. 33

Core Concept Reviews:

- General Ledger
- Financial Statements

- 4 Contrast different costing approaches related to overhead and overhead drivers for multi-product companies. 43

Core Concept Reviews:

- Fixed and Variable Costs
- Variable and Absorption Costing
- Manufacturing Overhead Drivers

- 5 Prepare a master budget for a manufacturing company with two divisions and analyze variances. 53

Core Concept Reviews:

- Master Budget
- Variance Analysis

- 6 Evaluate a capital budgeting decision made by managers. 65

Core Concept Reviews:

- Time Value of Money
- Capital Budgeting Techniques



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Assignment 1

ASSIGNMENT 1 – Reconcile manufacturing-related inventory accounts

REQUIREMENTS

1. Examine the Job Cost Sheets in the Document Folder. Look at the sum of direct materials, direct labor, and manufacturing overhead that have been charged to jobs as of November 30, 2019.
2. Review the Source Documents from the Documents Folder that relate to jobs in work-in-process or finished goods inventory as of November 30, 2019.
3. Review the Transactions List for December 2019 in the Documents Folder. Highlight the transactions that relate to manufacturing product costs.
4. Examine the Cost Sheet on page 10 of the Gatsby's Accounting System and Policies section to understand how much more costs it will take to complete the jobs in work-in-process inventory at November 30, 2019.
5. Complete the worksheet below by accounting for all the jobs in beginning work-in-process or finished goods inventory at December 1, 2019. Refer to the Job Cost Sheets in the Documents Folder; then add any new jobs started in December as seen in the Transactions List.

Learning Objectives:



At the end of this assignment, you will be able to reconcile manufacturing-related inventory accounts with job cost sheets and trace transactions to source documents.

Core Concept Reviews

- Job-Order Costing
- Product and Period Costs
- Applying Manufacturing Overhead
- Source Documents and Internal Controls

Job No.	Customer	Quantity	November 2019 (indicate started, completed, and/or sold)	December 2019 (indicate started, completed, and/or sold)

Assignment 1

CORE CONCEPT REVIEW — Job-Order Costing

Determining which costs to assign to a cost object is crucial for any business, whether a service organization, a manufacturer, or a retailer. A cost object can be a product line, a process, a customer, or any other object of interest to managers. Information related to manufacturing products is collected by using one of two costing systems: process or job-order. If a product is manufactured in large batches and all the output is identical (e.g., barrels of oil, gallons of milk, bushels of wheat), then process costing, which aggregates costs by stages in the manufacturing process, is most likely used. If a product is unique in character and distinguishable for each job, then job-order costing is most effective. Examples of a job-order costing environment are custom homes, medical services, textbooks, movie production, and custom clothing.

A jeans company like Levi Strauss would likely use job-order costing in which one job could be all ladies' size 8 boot cut jeans. The company may produce thousands of these, but this job is different than ladies' size 10 straight leg jeans, or men's size 34 stone-washed jeans. Costs are then matched to the revenues generated from the client to determine if a profit or loss results. Alternatively, jobs can be tied to customers.

CORE CONCEPT REVIEW — Product and Period Costs

Costs are categorized into **product costs** and **period costs**. The three components of a product's cost are 1) **raw materials** that are requisitioned from the warehouse by the factory manager (and from then on are called **direct materials** as they can be directly traced to jobs), 2) **direct labor**, which is the cost of employees working directly with the production process, and 3) **manufacturing overhead**, which are those **indirect costs** that are critical to manufacturing the product but not easily traced to it, such as factory equipment costs, factory supervisor salaries, factory building occupancy costs, and indirect supplies.

If some of these product costs have been added to a job but the job is not yet completed, they comprise **work-in-process inventory** at the end of the period. Jobs that are completed are moved from work-in-process inventory to **finished goods inventory**. Raw materials, work-in-process, and finished goods are all **inventory control** accounts in the General Ledger. **Job cost sheets** serve as a subsidiary ledger to support the control accounts of work-in-process, finished goods inventory, and cost of goods sold. Accountants reconcile control accounts at the end of an accounting period to be certain that the subsidiary accounts and control accounts match. Product costs are deferred on the balance sheet as inventory until sold, at which point these costs are reflected on the income statement as **cost of goods sold** and matched with sales.

Period costs are selling and general and administrative (G&A) expenses that are charged off to the period in which they are incurred. Examples of period costs include depreciation, interest, and bad debt expense.

Assignment 1

CORE CONCEPT REVIEW—Applying Manufacturing Overhead

Manufacturing overhead (MOH) is applied to jobs using a predetermined overhead rate as jobs move through the production process. The cost of MOH for the coming year is estimated based on past experience of overhead costs and any other information the company has about changes in costs and the behavior of costs with different levels of activity (i.e., fixed, variable, and mixed costs). Estimated MOH for the coming year is divided by a driver of that cost (called the allocation base). The formula is:

$$\text{Predetermined MOH rate} = \frac{\text{Estimated total manufacturing overhead cost for the year}}{\text{Estimated total amount of the allocation base for the year}}$$

The predetermined rate is computed at the beginning of the period. For simplicity, many companies use one plant-wide allocation base, such as direct labor hours, machine hours, or direct labor cost. When a single plant-wide predetermined MOH rate has been determined, it is used to calculate MOH to be applied to each job cost sheet based on the actual level of the allocation base that each job used. Applied MOH is a charge to the job cost sheet (and to work-in-process inventory) as the costs are shifted from the manufacturing overhead control account.

CORE CONCEPT REVIEW—Source Documents and Internal Controls

Source documents refer to the record of information about a transaction. Historically these were paper forms with multi-colored copies that could be distributed to different people responsible for various activities in the company. Today, even the smallest companies use some type of electronic system to record necessary information to support transactions recorded in the accounting information system. Input screens in an electronic system mirror traditional paper copies in that they capture the same necessary information about a transaction.

A company's internal control system is designed to minimize risks and ensure the reliability of financial reporting, in addition to effective and efficient operations and compliance with laws and regulations. Source documents play a critical role in assuring that information is captured correctly at the initial and subsequent steps in the business process. Internal control procedures evidenced in source documents include 1) sequentially numbered documents to account for all copies, 2) validity checks to be sure numbers add up and are reasonable, and 3) signatures of responsible parties for the transaction. Segregating the duties of employees is also important to provide checks and balances, although a challenge in a small company. An example of a risk is that one person could initiate a purchase and receive the goods but neglect to record them into the accounting system.

Notes

Assignment 1

ASSIGNMENT 1 QUESTIONS

Enter answers on the Armond Dalton Resources website (www.armonddaltonresources.com).

Use the worksheet completed in Requirement 5 of this assignment to answer the following questions.

Q-1-1. Which job(s) represent finished goods inventory at November 30, 2019? (Check all that apply.)

☐ #220 ☐ #221 ☐ #222 ☐ #224 ☐ #225

Q-1-2. Which job(s) make up work-in-process at November 30, 2019? (Check all that apply.)

☐ #220 ☐ #221 ☐ #222 ☐ #224 ☐ #225

Q-1-3. How much direct labor will it take (in dollars) to complete Job #221 for Whiskey & Soda? Use the Cost Sheet in the Gatsby's Accounting System and Policies section.

Q-1-4. How much manufacturing overhead must be added to complete Job #222 for K. Brand?

Q-1-5. Which job(s) were sold in December 2019? (Check all that apply.)

☐ #220 ☐ #221 ☐ #222 ☐ #223 ☐ #224

Q-1-6. What is the cost of goods sold for the month of December 2019?

Q-1-7. Which job(s) were in work-in-process inventory at December 31, 2019? (Check all that apply.)

☐ #220 ☐ #221 ☐ #223 ☐ #224 ☐ #225

Assignment 1

Q-1-8. What is the cost of ending work-in-process at December 31, 2019?

Q-1-9. What is the average cost per pair of jeans for the job started and completed in December 2019?

Q-1-10. What is the ending finished goods inventory at December 31, 2019?

ASSIGNMENT 1 PROBLEMS

Enter answers on the Armond Dalton Resources website (www.armonddaltonresources.com), either by typing your answers in the spaces provided online or by uploading a file.

P-1-1. Complete the following worksheet related to source documents based on December 2019 transactions.

Source document:	Who initiates?	How many forms are initiated in December 2019 and for which jobs, vendors, customers?	December 2019 transaction dates to be recorded on this source document
Customer order			
Employee time record summary report			
Materials requisition			
Purchase order			
Receiving report			
Sales invoice			
Vendor invoice			

GENERAL LEDGER

2520 - MORTGAGE PAYABLE—COMMERCE BANK					
Date		Reference	Debit	Credit	Debit Balance
11/30/19	Balance Forward				365,000
3100 - CAPITAL STOCK					
Date		Reference	Debit	Credit	Debit Balance
11/30/19	Balance Forward				200,000
3200 - RETAINED EARNINGS					
Date		Reference	Debit	Credit	Debit Balance
01/01/19	Balance Forward				689,110
3300 - INCOME SUMMARY					
Date		Reference	Debit	Credit	Debit Balance
4000 - SALES					
Date		Reference	Debit	Credit	Debit Balance
11/30/19	Balance Forward				12,969,000

GENERAL LEDGER

5100 - COST OF GOODS SOLD

[illegible]

5200 - MANUFACTURING OVERHEAD

[illegible]

6100 - OFFICE SUPPLIES/UTILITIES EXPENSE

Date		Reference	Debit	Credit	Debit Balance
11/30/19	Balance Forward				4,950

GENERAL LEDGER

6200 - PAYROLL SERVICE EXPENSE

Date		Reference	Debit	Credit	Debit Balance
11/30/19	Balance Forward				2,200

6300 - OTHER SELLING AND ADMINISTRATIVE EXPENSE

Date		Reference	Debit	Credit	Debit Balance
11/30/19	Balance Forward				140,250

6500 - INTEREST EXPENSE

Date		Reference	Debit	Credit	Debit Balance
11/30/19	Balance Forward				22,550

T-ACCOUNTS

T-Accounts

[illegible]

Notes

[illegible]