

head consists of all support costs including rent, utilities, and depreciation of office equipment. At the start of the year, these costs were estimated to be \$450,000.

Recently, Connie Bachmann, a YSL partner, was asked to conduct a survey for Surenex, a new high-tech company. Connie is excited about this opportunity since she expects that this hot, small company will, in three to five years, become a hot, big company with premium billing opportunities. At this point, however, Connie wants to quote a low fee since Surenex has cash-flow problems and is clearly unwilling to pay YSL's normal rates. On most jobs, YSL's fee is 1.5 times professional compensation. In addition, the company is reimbursed for all out-of-pocket costs related to travel and paper and postage costs for surveys. YSL is in high demand, and if the Surenex job is undertaken, another potential client will be turned down for service.

Connie estimates that the Surenex engagement will require the following costs in addition to overhead support costs.

Connie Bachmann (partner), 40 hours at a salary averaging \$110 per hour = \$4,400.

Ambrose Bundy (professional staff) 100 hours at a salary of \$35 per hour = \$3,500.

Direct charges for actual travel, mailing, and postage = \$2,800.

Total of above = \$10,700.

Required

- Calculate the expected full cost of the Surenex engagement including an allocation of overhead.
- What is the lowest amount that Connie can bill on this engagement without hurting company profit?
- In deciding on a price for the engagement, what should Connie consider in addition to the amount calculated in (b)?

2-3 DUPAGE POWDER COATING

DuPage Powder Coating applies powder coating finishes to a variety of materials and parts used by small- and medium-sized manufacturing firms. Essentially, powder coating involves the application of powder (finely divided particles of organic polymer containing pigments, fillers, and additives) to a surface, after which

the powder is fused into a continuous film by the application of heat or radiant energy. The process results in a durable finish that resists rust.

In prior years, finishes were applied by hand, and manufacturing overhead was allocated to jobs based on direct labor hours (the rate was \$10 per hour based on overhead of \$800,000 and 80,000 direct labor hours). At the start of the current year, the company purchased and installed a computer-controlled, electrostatic powder coating system at a cost of \$1,500,000. With a five-year life, the equipment adds \$300,000 a year to manufacturing overhead (thus, expected total overhead is now \$1,100,000). However, labor has been reduced by 20,000 hours per year (because the equipment reduces the need for labor), and with an average wage rate of \$20 per hour, \$400,000 of wages are expected to be saved in the current year.

While the company purchased a computer-controlled system including a new spray chamber, it kept its old spray booth and manual equipment for use on small jobs.

DuPage Powder Coating has just received an order from Cedargreen Enterprises (a small manufacturer of outdoor furniture) to powder coat 4 tables and 16 chairs. On small orders such as this, DuPage uses its old spray booth and manual equipment rather than the new computer controlled system. Material cost for the job will be \$400, and 6 labor hours are required.

Required

- Based on the limited information, estimate the full cost of the job in the *current* year. Assume the company uses one, company-wide overhead rate.
- What would have been the cost of the job in part (a) in the *prior* year?
- Bill McCally, plant manager observed that "Last year, jobs like the one we did for Cedargreen Enterprises cost less. But, I know we're not less efficient at handling small jobs. We use the same equipment, the same labor, and the same products on small jobs this year as last year, and yet the accounting system is making small jobs look more expensive!"

Explain to Bill why the accounting system is making small jobs appear to be more costly in the current year.

- Does the fact that small jobs have a higher cost in the current year suggest that prices for small jobs should be increased?

Beginning Work in Process:

Direct materials	\$6,000
Direct labor	2,300
Manufacturing overhead	1,900

Costs added during July:

Direct materials	\$32,200
Direct labor	10,500
Manufacturing overhead	15,800

Required

Prepare a production cost report for the month of July.

- **PROBLEM 3-15. Comprehensive Problem, One Department** Lindy Glitter uses a process costing system to track the production of the single product they make in one department. At the start of November, there were 8,000 units in process that were 100 percent complete for direct material and 60 percent complete for conversion costs (labor and overhead). Lindy began the production of 85,000 units during the month and in ending Work in Process Inventory there were 3,000 units that were 100 percent complete for material and 70 percent complete for conversion costs.

Cost Information:	Beginning Work in Process	Costs Added in May
Direct material	\$4,000.00	\$72,500.00
Direct labor	350.00	7,100.00
Manufacturing overhead	280.00	8,250.00
	<u>\$4,630.00</u>	<u>\$87,850.00</u>

Required

- Calculate the cost per equivalent unit for each of the three cost areas and in total.
- Calculate the cost of the units completed in November and the cost of ending Work in Process Inventory.
- Reconcile the sum of the two costs in part b to the sum of beginning Work in Process and costs added in November.

- **PROBLEM 3-16. Comprehensive Problem** Newberry Company accumulates costs for its product using a process costing system. Direct materials are added at the beginning of the production process, and conversion occurs evenly throughout the production process. Below is information related to May.

Unit Information

Work in process, May 1 (85% complete)	50,000
Units started during May	100,000
Total to account for	<u>150,000</u>
Units completed	120,000
Units in ending WIP (40% complete)	30,000
Units accounted for	<u>150,000</u>

Cost information

	Direct Material	Conversion	Total
Work in process, May 1	\$ 45,000	\$360,500	\$405,500
Cost incurred during May	102,000	825,000	927,000

Required

- Compute the cost per equivalent unit for material and for conversion costs for May.
- Compute the costs of units completed during May.
- Compute the cost of work in process at the end of May.
- Prepare a journal entry to record the cost of goods completed.

PROBLEM 3-17. Journal Entries in Process Costing Douglas Basket Co. produces a specialty basket used by a gift basket company, Yours Truly Gifts. Douglas uses a just-in-time system and has very little inventories of material, work in process, or finished goods. Since the balances are so small the company carries them at zero for purposes of accounting.

During August, the company produced and shipped 200,000 baskets at a cost of \$1.20 per basket. The cost was made up of 60 percent material cost, 30 percent labor cost, and 10 percent manufacturing overhead.

Required

Prepare journal entries to record:

- The issuance of direct material.
- The cost of direct labor (use wages payable).
- The application of manufacturing overhead.
- The completion of units in process and their transfer to finished goods.
- Cost of goods sold.

CASES

3-1 TECH-TONIC SPORTS DRINK

The Western Beverage Company is marketing a new product, Tech-Tonic Sports Drink Syrup. The product sells for \$15 per gallon, and in recent months the company has had sales of more than 500,000 gallons per month. Consumers mix 1 part syrup with 5 parts water to make a drink that "replenishes vital bodily fluids following exertion."

At the start of April, there were 150,000 gallons in beginning Work in Process. The product was 100 percent complete with respect to material and 50 percent complete with respect to conversion costs. During April, 600,000 gallons were started. Of the 750,000 units to account for, 150,000 gallons remained in process at the end of April. These units were 100 percent complete with respect to material and 20 percent complete with respect to conversion costs; 300,000 gallons were completed during April and, unfortunately, 300,000 gallons were lost owing to worker error. The production process calls for sodium to be added at the start of the process. On two separate occasions, a new worker added too much sodium and batches were ruined. The errors were not identified until the end of the production process when batches

were tested for quality assurance. Needless to say, the worker was fired.

The controller of Western Beverage, Gunther Bergman, is considering two ways to treat the cost of the "lost" units. One approach, is to "bury" the cost in the units completed and the units in process. This would result in cost of units completed of \$1,530,000 and cost of ending Work in Process of \$293,400 calculated as follows.

Approach No. 1

**Tech-Tonic Sports Drink Syrup
Production Cost Report
April 2008**

Quantity Reconciliation

Units in beginning WIP (100% material, 50% conversion costs)	150,000
Units started	600,000
Units to account for	<u>750,000</u>
Units completed	300,000
Units in ending WIP (100% material, 20% conversion costs)	150,000
Lost units	<u>300,000</u>
Units accounted for	<u>750,000</u>

