

- e. Analyze the quantity and labor efficiency variances calculated in parts (c) and (d) above. What managerial implications do you draw from these variances?
- f. What suggested changes would you recommend to Domingo Cigars's management? Be specific.

Case 12-2: Rust Belt Mufflers

Dr. Madison, inventor and owner of Madison Corrosion Treatment, has discovered that ordinary mufflers and pipes, when treated with his patented process, will become permanently impervious to corrosion. To reap the rewards from his ingenuity, he has opened Rust Belt Mufflers, a chain of 30 corporate-owned muffler shops. Rust Belt unconditionally warrants all of its muffler and pipe installations for the life of the vehicle. From minor adjustments to complete replacement, a Rust Belt customer must be a satisfied customer!

Although Rust Belt's service has become the rage of the Great Lakes, profits have been unimpressive. Simon, one of Madison's employees, scolds his boss: "Here you are, with the greatest competitive advantage in the history of muffler service, doing no better than any of your rivals." Madison retorts, "I'm devoted to science, not business. As long as the enterprise is profitable, I will not interfere with my shop managers." Simon says that the profitability problem is due to squandering of resources by shop managers. The product's superior price, strong demand, and Madison's policy of benign neglect have given managers a virtual blank check when it comes to expenditures. Simon says that Madison's solution is to reduce costs by monitoring shop performance via a standard cost system. Due in large part to early childhood conditioning, Madison does as Simon says.

Each Rust Belt shop provides two services:

1. Replacement of non-Madison mufflers and pipes with modern Madison mufflers and pipes.
2. Warranty replacement of defective Madison mufflers and pipes with new Madison mufflers and pipes.

These services require materials (including corrosion treatment) and direct labor. Materials purchases, installation procedures, and labor allocation are strictly the responsibility of each individual shop manager. Since Madison mufflers and pipes are merely ordinary mufflers and pipes that are treated with Madison's corrosion process, shop managers purchase mufflers and pipes from any supplier of their choosing. Corrosion treatment is done at each shop.

After careful study, Madison adopts the following cost standards per installation. Actual installations include both original and warranty installations.

Materials	\$60 per installation
Direct labor	1 hour per installation
Standard labor rate	\$11.80

Cost data for the three shops in Buffalo, New York, for the first year of the standard cost system follow.

	State St.	Dewey Ave.	Mt. Hope Ave.
Expected installations	15,000	22,500	10,000
Actual installations	14,500	22,250	11,500
Materials costs	\$710,500	\$1,346,125	\$759,000
Direct labor hours	11,600	21,138	12,650
Actual labor rate	\$11.00	\$12.00	\$13.00

Required:

- a. Calculate materials and labor variances for each of the three Buffalo shops. Evaluate the relative performance of each shop based on the calculated variances.
- b. Madison's cousin Milty, Rust Belt's MBA intern, presents the following in his analysis of the Buffalo shops under standard costing:

During the standard costing period, 500 of the installations performed by State Street involved the originally installed Madison mufflers and pipes being fully replaced under warranty with new Madison mufflers and pipes. Work at the Dewey Avenue shop has produced 100 original installations requiring full warranty replacement. At the Mt. Hope Avenue shop, only eight installations have required full warranty replacement. This accounts for all known warranty work in Buffalo for installations performed under standard costing. (Warranty replacement services performed before standard costing were not considered.)

Has your interpretation changed? In broad terms, is the standard costing system effectively meeting its objectives? What general improvements should be made?