

Project Title: Downtime Costs**Materials Needed:**

Calculator / Internet Access

**Introduction – Background Information**

Helmets to the Rescue has produced bicycle helmets that customers want and repeatedly buy. Surveys confirm the fact that customers feel they get good value for their money. The good news is that profits have been healthy for everyone – beginning with the companies that supply raw materials for the outer shell, the lining and the strap through the retail stores that sell to those satisfied customers. Some not-so-good news is that a new comptroller has suggested that profits could be even better if the cost of maintaining production equipment could be reduced. Her suggestion is to not renew the contract with the maintenance company when it expires and instead to use an in-house process to accomplish the same results at less cost.

Calculate Costs

Take a look at what happens when a piece of equipment fails during bicycle helmet production. As you do, think about how you might respond to the suggestion to save money by cutting maintenance costs. An important part of the process is to heat colored beads of polycarbonate plastic to a very high temperature, melting the material for molding the outer shell. A heating element that functions properly is a critical part of the equipment. If the unit is approaching its limits and doesn't get proper attention, it will fail and shut down the entire production process.

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Your Task

1. Assume that the heating unit fails as a result of improper care. Assume that the average cost of equipment failure is \$22,000 per minute. Calculate the cost for a repair that required three hours to complete.
2. Now assume that parts were not available. As a result, the repair took eight hours. What is the cost?
3. Consider the fact that the part must be shipped from the supplier in a regularly scheduled, once-a-week delivery. That delivery just happened yesterday. Search for rates to charter an airplane to get the part as quickly as possible. Assume that the supplier is near a major airport in a city 600 miles from the production floor. Estimate the cost of chartering an airplane to get the part.
4. Write a paragraph to summarize your thoughts about using professional maintenance for manufacturing equipment.