Warranty Costs

Warranties are contractual obligations to repair or replace defective merchandise. Manufacturers offer warranties to increase sales. As a result, the cost of repairing or replacing the merchandise is a cost of generating the sale.

The problem is that the warranty repair may not occur in the same period of the sale. In this case, there is a matching problem.

Example: Assume that a company sells 100,000 units during 2001 for $50 per unit. Each unit has a two-year warranty. During 2001, no units are brought in for repair. During 2002, 1,200 units are repaired at a unit cost of $15 per unit for parts and $12 per unit for labor. During 2003, an additional 500 units are repaired with similar costs.

Entries:

2001

Dr. Accounts receivable $5,000,000

    Cr. Sales revenue $5,000,000

2002

Dr. Warranty expense 32,400

    Cr. Parts inventory   18,000

    Cr. Wages payable   14,400

2003

Dr. Warranty expense $13,500

    Cr. Parts inventory   7,500

    Cr. Wages payable   6,000

Note that the revenues are recorded in 2001, but the expenses that generated those sales are recorded in 2002 and 2003. In addition, by offering the warranty, the firm has incurred an obligation that is not shown as a liability.

As a result, the firm needs to make an estimate of the warranty costs in 2001. Let's say that they expect 2,000 units to require repair at a cost of $27 per unit. Then the entries would be as follows:

2001
Dr. Accounts receivable $5,000,000
    Cr. Sales revenue $5,000,000
Dr. Warranty expense $54,000
    Cr. Warranty obligation   54,000
2002
Dr. Warranty obligation $32,400
    Cr. Parts inventory   18,000
    Cr. Wages payable   14,400
2003
Dr. Warranty expense $13,500
    Cr. Parts inventory   7,500
    Cr. Wages payable   6,000
Dr. Warranty obligation $8,100
    Cr. Warranty expense   8,100

Inventory

- Types of Inventory
  - Raw Materials
  - Work-in-progress
  - Finished Goods

- Measuring inventory (Cost Allocation Method)
  - First-in, first-out
  - Last-in, first-out
  - Weighted-average

- Lower-of cost or market

Cost Allocation Method

Most of the time, units of inventory, cannot be separately identified. Copies of the same book all appear to be the same. However, the cost of those books could differ.
Example:
You begin with an inventory of 100 copies of a textbook that you purchased for $40 each. During the year you buy 30 books at $45. During the year you sell 75 books and you have 55 books in your inventory. Which books do you have in your inventory and which books did you sell?

First-in, First-out: This assumes that you sold the first books purchased first. Therefore:
Cost of Goods Sold = 75 x $40 = $3,000
Ending inventory = (30x$45) + (25x$40) = $2,350

Last-in, First-out: This assumes that you sold the last books purchased first. Therefore, you would show:
Cost of Goods sold = (30 x $45) + (45 x $40) = $3,150
Ending inventory = (55 x $40) = $2,200

Weighted-average: The average price of the books is [(100 x $40) + (30 x $45)] ÷ 130 = $41.15. Therefore:
Cost of Goods sold = 75 x $41.15 = $3,087
Ending inventory = 55 x $41.15 = $2,263

Implications:

FIFO: Older costs (often lower) are charged to cost of goods sold and more recent costs (often higher) are in ending inventory. This means that FIFO generally provides higher income and more relevant inventory valuations.

LIFO: Most recent costs (often higher) are charged to cost of goods sold and older costs (often lower) are in ending inventory. This means that LIFO generally provides lower income (but a more relevant gross profit) and less relevant inventory valuations.

Exercise 12-15

Dickinson Co. is a wholesaler of garden supplies. At the beginning of its 2001 fiscal year, the company owned 100 bags of fertilizer at a cost of $8 per bag. Before the spring gardening season, it purchased its entire supply for the year, first 500 bags at $8.30 each and then 400 bags at $8.50 each. During the year it sold 880 bags for $12 each. Calculated ending inventory, cost of goods sold and gross profit under FIFO, LIFO and weighted-average.