

Case 13

BREMEN ELECTRONICS

BREMEN ELECTRONICS (A)

In October 1993, Herman Klein, President, and Marlene Baer, Controller, of Bremen Electronics USA were checking the budgeted figures for Bremen's 1994 operations. They wanted to see what level of sales would be required to provide Bremen's parent company in Germany with its target profit of \$210,000 for the year.

In early 1993 Bremen Electronics, a large German manufacturer of radio equipment, had set up a subsidiary in the United States to manufacture two products Bremen had successfully marketed in Europe. One was a miniature signalling device used primarily for remote operation of garage doors. These "RC1" units consisted of a signal sender, about half the size of a pack of cards, and a receiver which was a bit larger. A large manufacturer of motorized garage doors had agreed to take a minimum of 100,000 RC1 control units a year. Klein and Baer thought that 120,000 units was a reasonable target for 1994.

Bremen had also designed a similar device which could be used by a householder to turn on inside lights when arriving after dark. This unit, called "RC2," was slightly more expensive to make since the receiving part was a complete plug-in device while the RC1 receiver was a component of the garage door unit. Initially Bremen expected to sell the RC2 unit primarily through mail order catalogues. Klein and Baer projected sales of 60,000 units for 1994.

Klein asked Baer to develop figures to help answer some questions:

1. What would breakeven sales volume be, assuming a ratio of two RC1s sold for each RC2 sold?
2. What level of sales would provide the profit target specified by the parent company of \$210,000 for the year? (Assume that they sell all that they produce.)
3. What would be the manufacturing cost per unit if they made and sold only 8,000 of RC1s and 4,000 of RC2s per month? In that case what would the profit be?
4. What would profit be if they sold 8,000 RC1 units and 4,000 RC2 units (as in question 3) but produced 10,000 of RC1s and 5,000 of RC2s, putting the unsold units in finished goods inventory? Explain the difference.

As a start, Baer developed the figures shown in Exhibit 13(A)-1. She recognized that the budget was only approximate since she expected that changes would be made to improve efficiency and perhaps the product design. In preparing breakevens, she decided to assume that parts, direct labor, and supplies could be considered variable with units produced, and all the rest would be fixed within the time frame and volume range being considered.

EXHIBIT 13(A)-1

BREMEN ELECTRONICS (A)

1994 Monthly Budget

<u>Sales Revenue</u>	<u>RC1</u>	<u>RC2</u>	<u>Total</u>
Produce and sell per month	10,000 units	5,000 units	
Projected selling price	\$ 20.00	\$ 23.00	
Sales Revenue	\$200,000	\$115,000	\$315,000
 <u>Manufacturing Cost</u>			
Parts	\$55,000	\$32,000	\$87,000
Direct labor	35,000	21,000	56,000
Overhead	<u>70,000</u>	<u>42,000</u>	<u>112,000</u>
Total Mfg. Cost	\$160,000	\$95,000	\$255,000
Manufacturing cost per unit	\$16.00	\$19.00	
 <u>Selling and administrative</u>			\$40,000
 <u>Total expense</u>			\$295,000
 <u>Profit</u>			\$20,000

Manufacturing overhead:

Supplies	\$21,000
Occupancy (utilities, rent, maintenance)	15,000
Equipment maintenance	17,000
Equipment depreciation	8,000
Quality control and production engineering	15,000
Manufacturing administration	<u>36,000</u>
 Total manufacturing overhead	 \$112,000

In this budget, overhead is allocated to the two products on the basis of direct labor estimated for the two products: \$2.00 of overhead for each \$1.00 of direct labor.