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By Patricia Cox

Master Budget Project: Direct Materials Budget, Part 2

Happy New Year 2013! Last month we began our work on the Direct Materials Budget report. Because the report involves different groups of detailed data, we created a table and began to build a series of append queries to add data to it. Once all of the queries are designed and run, the data from the table will be used to create the Direct Materials Budget report. We will also put all of the steps together into a macro and add a button to the Reports form so that the process can be run automatically.

So far, we've completed queries to gather the data for the Required Production totals for both bike types and Direct Materials Needed by part. This month we will outline a plan for creating the next four queries and then complete the first one, Desired Ending Inventory.

Following the Partial Data Input Sheet from the original Excel-based budget developed by Jason Porter and Teresa Stephenson (see "Excel-based Budgeting for Production," March 2010, p. 35), the ending inventory of Direct Materials at the end of each quarter should be 15% of the next quarter's production needs. That sheet also shows the inventory for the parts that we have to work with at the beginning of our process (cells F34:F49). The first thing we'll do is to add a field to the Part table to store this data element.

Edit the Part Table

Open the Part table in Design view and add a field named Beginning Inventory. Set the data type to long integer. (I had added a comment for the field indicating that this is the inventory at the start of our budgeting process.) Save the table and switch to Datasheet view. In the new Beginning Inventory field, enter the data shown in Figure 1.

Append Queries Analysis

We'll use a series of append queries to continue gathering the data we need for the Direct Materials Budget report. Here is a brief analysis of the calculations we'll need to make to calculate the values to append.

Desired Ending Inventory: This provides the number of parts we'll need to have in inventory at the end of a quarter. Because we want to keep 15% of the next quarter's needs, the Desired Ending Inventory is attained by multiplying the Part Total for the following quarter by 0.15.

Total Needs: This is the number of parts needed for a particular quarter plus the Desired Ending Inventory.

Figure 1. Beginning Inventory Data

Part Numbe	Part Description	Cost Per Uni	Beginning Inventory
1	Steel	$15.00	1295
2	Rubber Handles	$2.00	1286
3	Seat	$4.00	640
4	Chain	$6.00	652
5	Tires	$10.00	1275
6	Gear Shift	$8.00	609
7	Brake Unit	$6.00	658
8	Special Handles	$5.00	32
9	Specialty Seat	$14.00	26
10	Expanded Shift	$25.00	34

Figure 2. Append Desired Parts Inventory Query

Field:	Category: "Desired Ending Inventory"	Budget Item	Production Units	2012-1st: Round([2012-2]*0.15)	2012-2nd: Round([2012-3]*0.15)	2012-3rd: Round([2012-4]*0.15)
Table:		Direct Materials B	Direct Materials Bu			
Sort:						
Append To:	Category	Budget Item	Production Units	2012-1	2012-2	2012-3
Criteria:		'Total'				
or:						

Less Beginning Inventory: This is the beginning inventory for a quarter. The first set of values comes from the Part table, and subsequent quarters are 15% of the Part Total for that quarter. This ultimately may require two queries to complete. We'll calculate it as a negative number so that we can add Total Needs to this number to get Direct Materials to Purchase. In Access, it's easier to sum than to subtract, so it's a useful practice to use negative numbers for values you will want to subtract.

Direct Materials to Purchase: This tells us how much we need to purchase for a quarter. It's Total Needs plus the (negative) Beginning Inventory value for a quarter.

This month we'll create the query for the Desired Ending Inventory since it's the most complex. Feel free to see if you can create the other queries we just discussed using some of the concepts from our past work. We'll cover the details of creating them next month.

Append Desired Ending Inventory

Create a query using the Direct Materials Budget table as a record source. Type the following for the first field:

Category: "Desired Ending Inventory"

From the record source, double-click Budget Item and Production Units to add them to the QBE grid. Type "Total" in the Criteria line of the Budget Item field.

The next step involves adding calculations that will calculate the inventory we'll need to ensure we have 15% of the next quarter's production needs. For the first quarter, I used:

2012-1st: Round([2012-2]*0.15)

The Round function in Access will round the calculation to the nearest whole number. "2012-1st" gives a temporary label to the field we're going to append to the 1st quarter column of the table. Follow a similar process for subse-

quent quarters. (See Figure 2 for details.)

Change the query to an append query and append the fields as shown in Figure 2. Run the query, then save it as "Append Desired Parts Inventory."

Best Practice

When analyzing the data needs for an entire report—or a manageable section of a complex report—break them down into a series of smaller steps to complete the process, then work through the details one step at a time. **SF**

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