

## Barcode Magician Application Note

### Using Barcode Magician@ Plus to make Mass Updates to the Fluke@ Met/Track@ Database

Barcode Magician (BCM) has been a great companion product for the Fluke Met/Ttrack database for many years. BCM provides the busy lab manager with a method to update several assets in the database at one time using a macro called the Action Code. There is no real limitation to how BCM can update/modify the database. Typical uses of BCM are:

- Checking instruments in and out of the lab.
- Status changes.
- Batch calibration records.
- Tool crib management where tools are checked in and out.
- And ..... many more applications.

This application note focuses on a new feature in BCM version 1.7, that has a batch look-up function. This application note was created on a computer with Windows XP. Windows 7 will work fine also. We assume that the user/manager is familiar with BCM. Database backups are recommended.

### The Problem

There are many situations where a lab manager wants to make changes to multiple records in the database. The two choices are to update one record at a time in Met/Track (or Metrology Xplorer 2) or use the ISQL editor to make the changes requiring a knowledge of SQL (Structured Query Language). When changing one record at a time, the lab manager can see each record that is being changed. When using the ISQL editor, great care must be taken, and it might be necessary to backup the database and perform some preliminary tests, because you cannot see the records as they are being changed.

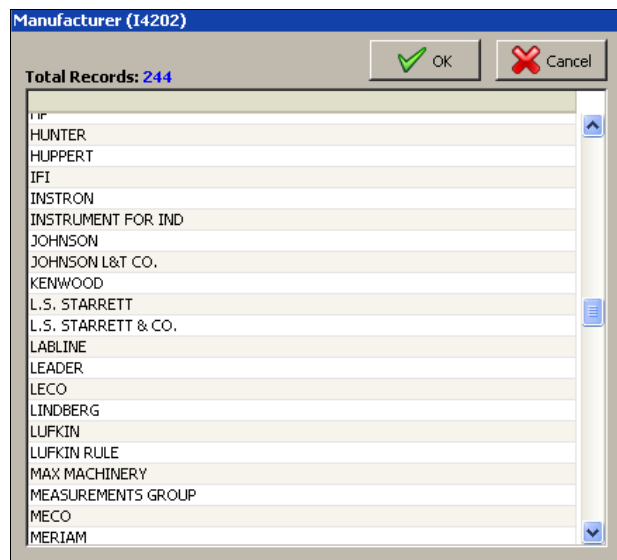
We will focus on a solution using the new BCM multiple record selection feature and apply this to two common examples. One solution will show how to update the Manufacture Field in the database. The second solution will show how to easily update/change the Equipment Custodian. You can apply these examples to your database.

### Solution #1 – Changing or Cleaning up the Manufacturers in the Database.

Most lab managers have found it necessary to change or clean up the manufacturers list (normally field I4202 in Met/Track). This is normally validated in most databases allowing only a drop down selection list. This keeps the database list clean and organized.

Take a look at our selection list at right. You will see that the Starrett Company has different unique listings in the database. There should only be one listing. We are going to use BCM to change the L.S. Starrett & CO. listings to STARRETT.

It is easy to determine what is in the database. If the database field is validated, and you are classified as a manager in Met/Track, you can press F7 which will open the Edit Validation List. You can click the Refresh (or Extract) Button and the validation list will be re-populated.



## Using the BCM Plus System Configuration Program

The next step is to configure a BCM Action Code to update the Manufacturer field which is I4202 in our example. Here are the steps necessary:

- Configure the Multiple Lookup feature in the BCM System Configuration Program.
- Create the BCM Action Code to update the Manufacturer Field.
- Use the BCM Run-Time Program to make the changes.

First we will configure the BCM System Configuration Program. You must have a complete installation of BCM Plus on the client computer in order to create the Action Code. A standard BCM Plus workstation installation can run the Action Code just fine.

Select Start | All Programs | Barcode Magician 1.7 Applications | BCM System Configuration

When the BCM System Configuration program starts, it will prompt you for the BCM administrative password. After successfully entering the password, a screen like the one at right will be displayed.

The Run-Time Display tab is already displayed and that is where we are going to configure the Multiple Look-up.

The BCM Run-Time Program can display up to four fields plus the asset number using the Alternate Asset Fields Descriptions list. The Action Code will be configured to search an alternative field if the asset number is not found. Originally, this feature was designed to search serial numbers.

We are going to slightly modify the list and change the last two fields in the list. We have changed I4240 to I4204 and I4204 to I4206.

With these changes, the Alternate Asset Field Descriptions will display the Asset Number, Mfg, Model, Description, and Serial Number. You can only select inventory fields with this function. If you want to modify fields in the historical records, there is a more complex configuration possible, but this is not discussed in this application note.

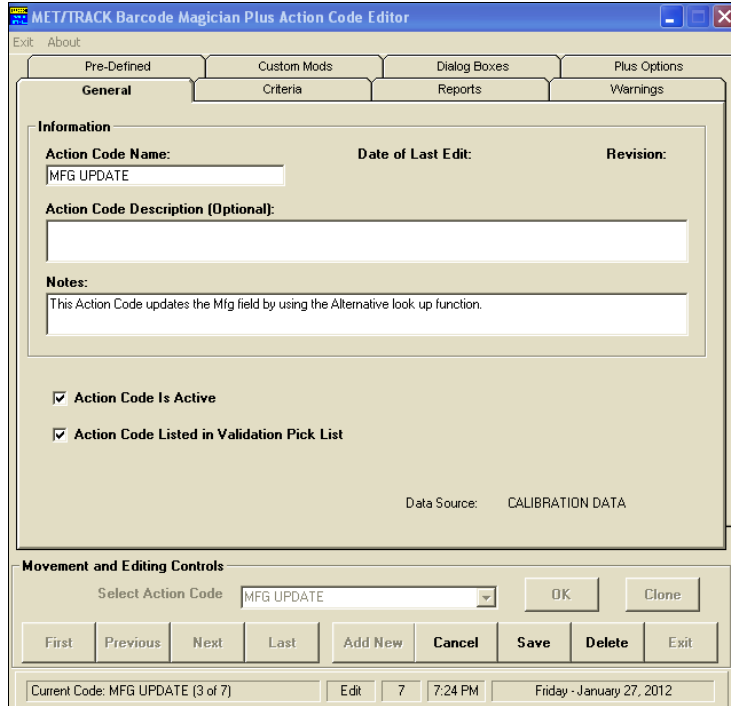
After making the changes, click the **Implement Changes** button and then **Exit** the program.

### Configure the Action Code

The next step is to configure the Action Code for our Manufacturer update.

Select Start | All Programs | Barcode Magician 1.7 Applications | BCM AC Editor

After the Action Code Editor starts, you must log in with the BCM Administrative Password. This will be the same password used for the BCM Configuration Program.



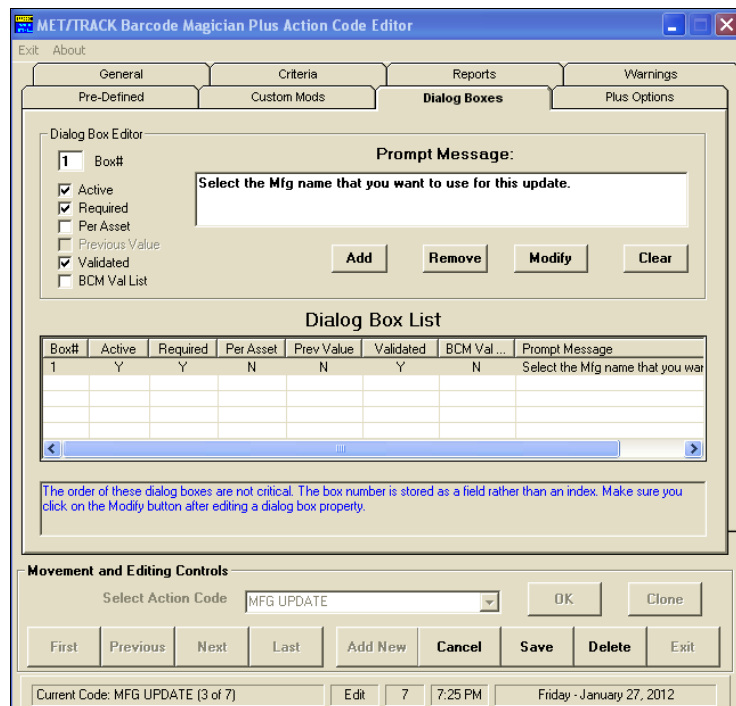
We are going to create a new Action Code called MFG UPDATE. Click the **Add New** button and a new Action Code Screen will be displayed. We entered **MFG UPDATE**.

You can click the **Save** button, and then edit the Action Code. After saving the Action Code, you will have to re-select it from the list to be edited.

After creating the Action Code, we selected the Dialog Boxes tab. The purpose of this process is to create an operator prompt using a validation list to select the new Mfg to be used. Important: You must have the entry in the Met/Track validation list first. BCM will detect that the Mfg field is validated and it can display the validated list. On the screen at right, we entered 1 for the Box# and then selected the Dialog Box to be Active, Required, and Validated. This is a very simple configuration.

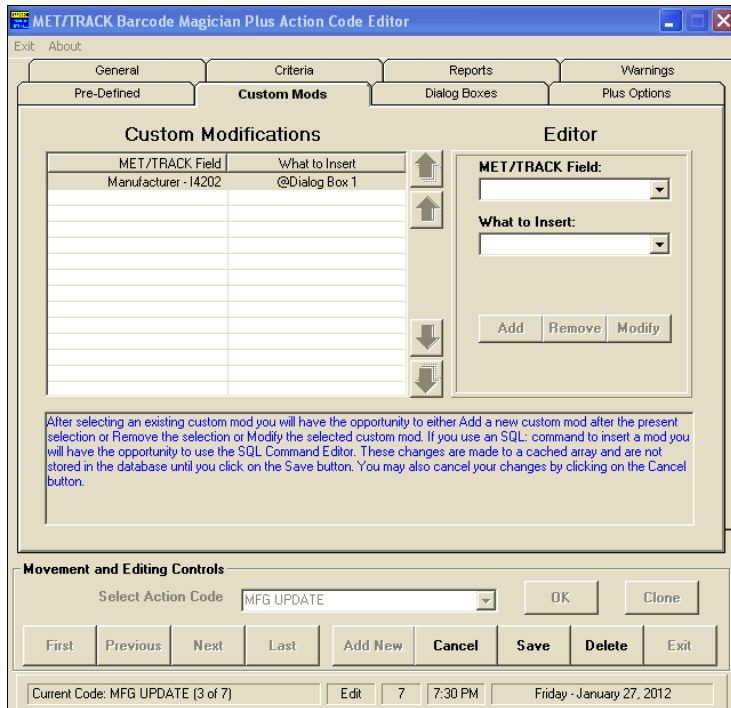
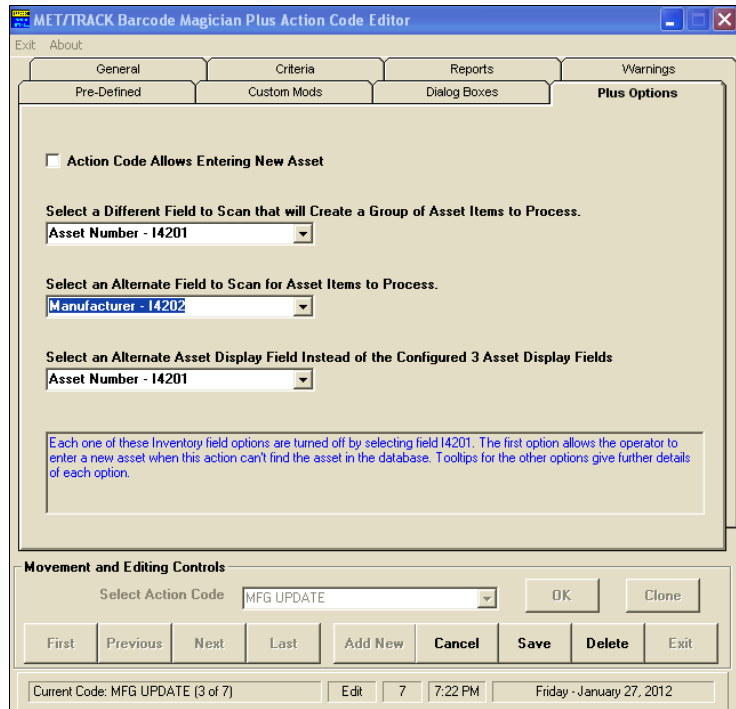
After entering the Dialog Box Prompt, click the **Add** button and it will show up in the Dialog Box List.

You can **Save** the Action Code, but make sure you re-select it from the list.



The next step is to set the Action Code to scan an alternate field, if the system does not find an asset number. If we enter a Manufacturer instead, the system will not find that entry in the asset number field, and will scan the Manufacture Field (I4202) instead. The selection is shown at right.

Click on the Custom Mods tab.



The Custom Mods is the last configuration to perform in the BCM Action Code Editor. There is only one entry necessary. In the “Met/Track Field” box, click the down arrow to select Manufacturer – I4202.

In the “What to Insert” box, click the down arrow to select Dialog Box 1.

Click the **Add** button and the Custom Modification will be displayed in the left pane.

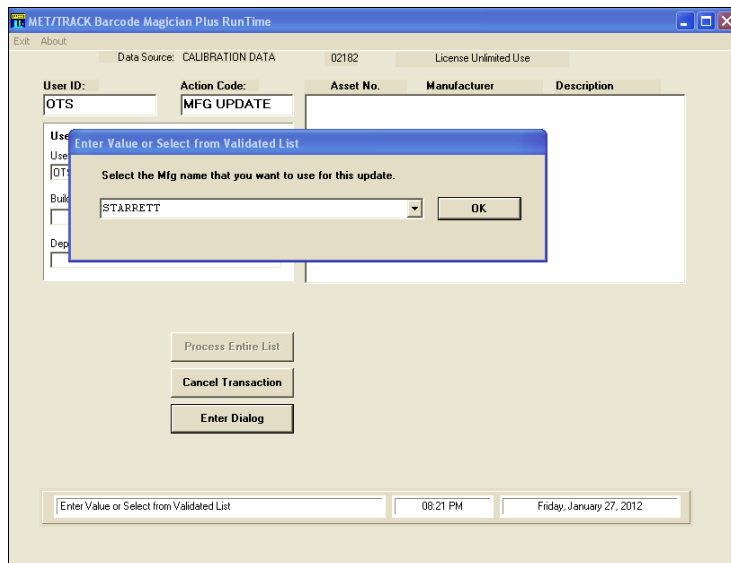
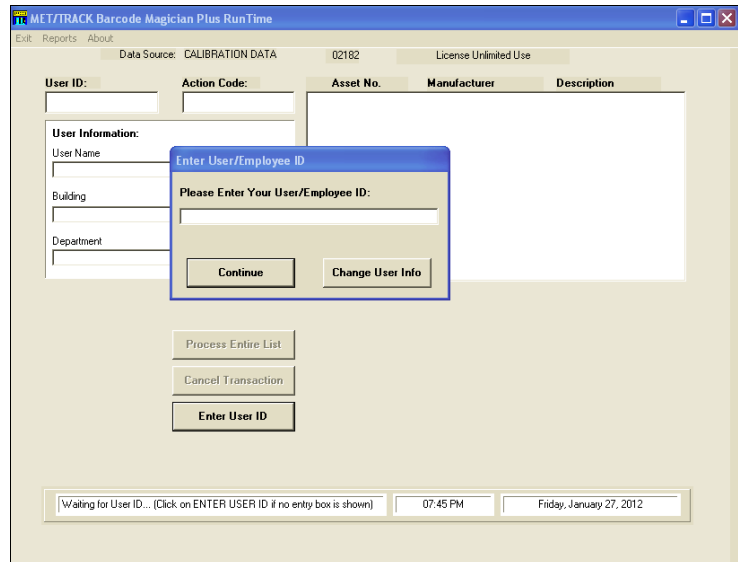
This should complete the configuration of the Action Code. Click the **Save** button to save the Action Code.

The next step is to test the Action Code in the Run-Time Program. You can close the Action Code Editor.

**Test the Action Code**

Select Start | All Programs | Barcode Magician 1.7 Applications | BCM Runtime.

A screen like the one at right will appear. This is the Run-Time program where the actual changes to the database are made.

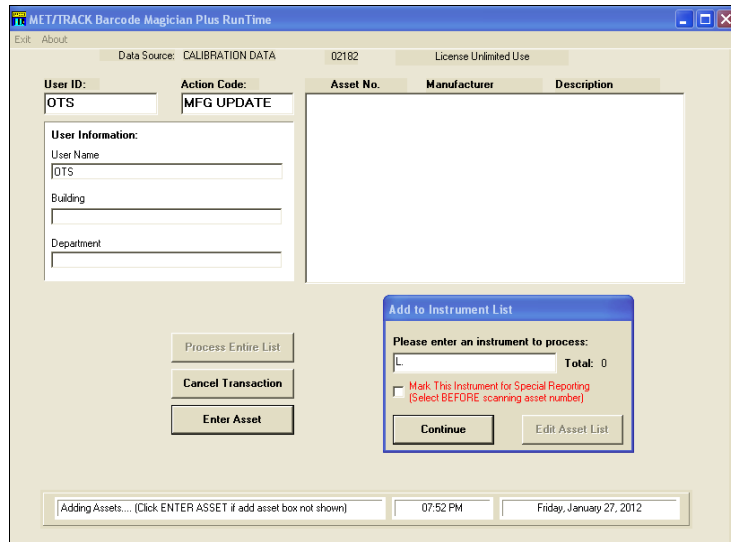


We have already entered the User ID and selected the MFG UPDATE action code. You will notice these entries in the Run-Time screen shown at left.

After selecting the MFG UPDATE Action Code, the program prompts for the MFG that we want to change to. In our example, we selected STARRETT.

We will change anything that starts with L. to STARRETT.

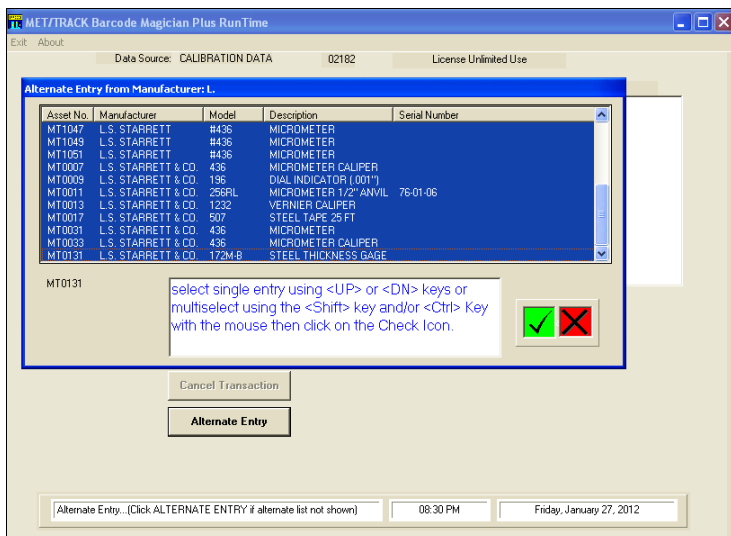
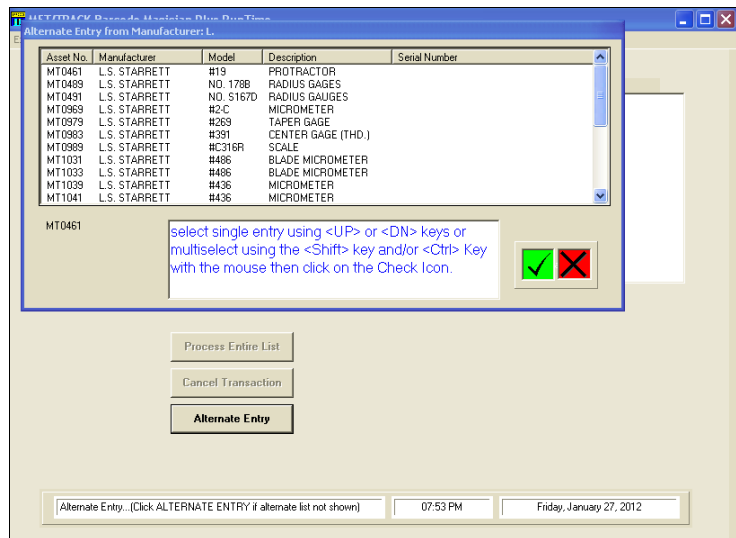
Click **OK** in the Dialog Box.



The Manufacture that we are going to change is anything starting with L.S. Starrett. All of the L.S. Starrett start with "L.". We have entered the letter L followed by a period. When the Action Code tries to search for that phrase in the asset number field, the program will not find it and then it will search the Manufacturer field for those assets. You can also enter the entire phrase to search.

Click **Continue**.

You can see from the screen at right, we have several assets with the Manufacturer starting with L.S. We are going to change the Manufacturer to STARRETT.



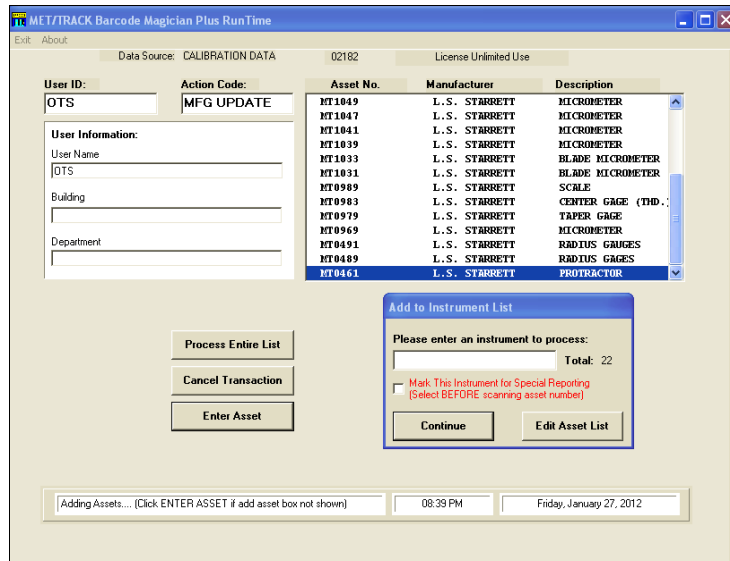
We have highlighted all the assets in the Alternate Entry Screen because all these manufacturers start with L.S

Click on the Green Check icon and the assets will automatically be populated in the list.

We now have the populated list of assets that we are changing with the new Manufacturer. Click **Process Entire List** and the update will be complete.

In summary, this is a great method to change Manufacturers, Model Numbers, and Descriptions. You could create an Action Code for each type of modification.

The major benefit is being able to see what is going to be changed before you change it,

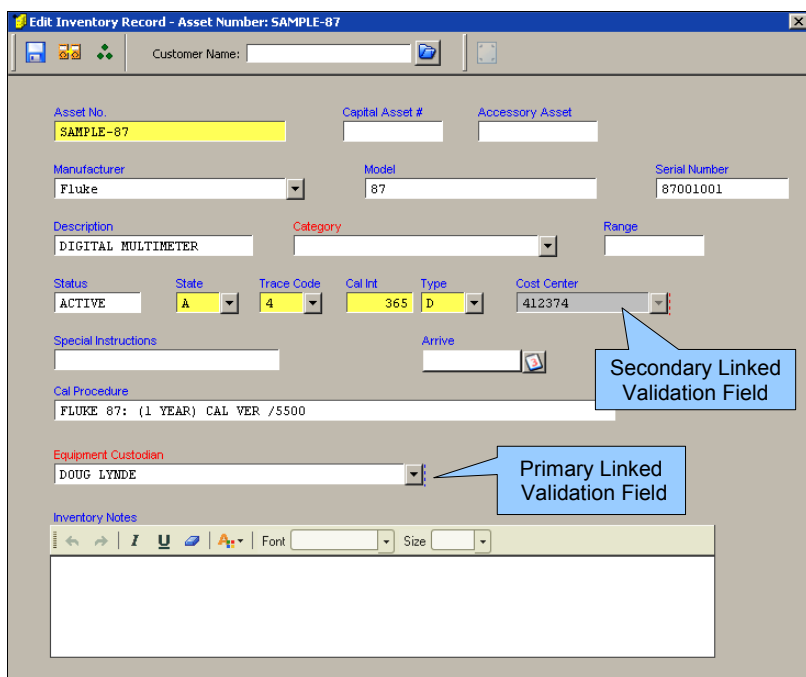


**Solution #2 – Changing Equipment Custodians in the Database**

In today's business environment, companies are changing departments, starting new projects, and consolidating operations. It is especially important in some industries to keep track of the responsible custodian for each instrument. In our example, our database has the Equipment Custodian listed in the Inventory screen. This is not a historical record. Several customers create historical location records for each instrument. The issue of changing custodians is the same, but there are other steps and database configurations that are necessary. In order to keep a simplified example, we chose to list the Instrument Custodians in the Inventory Table. We have used a Linked Validation field with a merge table that contains Email Addresses for each Custodian. This configuration also allows Email Notification to automatically send recall emails to each custodian.

Before we can describe this example, it is necessary to describe the database configuration for tracking Equipment Custodians. We have utilized Linked Validation and have linked the Equipment Custodian field to the Cost Center (Dept) field. When you change the Custodian, the Cost Center changes automatically. You will notice the Metrology Xplorer 2 screen at right shows the Cost Center field is grey'd out. There is also a Merge Table applied to the Equipment Custodian field which lists the Custodian's email address.

There are many ways to configure a system, but we decided to use the Linked Validation method and demonstrate that BCM supports Linked Validation.



Merge (4244) Equipment Custodian							
Merge	First Name	Last Name	Phone Number	E-Mail Address	Dept	Supervisor	
DOUG LYNDE	Doug	Lynde	911	dlynde@ontimesupport.com	sales	Renae	

As described in the previous page we are using linked validation to link the Cost Center, and a merge table for the Email Addresses. The screen above illustrates the details for one of the Equipment Custodians and includes the email address. The screen at right illustrates the linked validation table. When the Equipment Custodian is changed, the Cost Center will automatically change. When BCM is used to update the Equipment Custodian, it will also change the Cost Center.

Edit Validation Data: Equipment Custodian - (4244)	
Equipment Custodian	Cost Center
BELLA BUNDY	412624
DOUG LYNDE	412374
JASON DEGROOT	412444
JOE BLOW	412734
JOHN WAYNE	412404
ROCK BUNDY	412574

The procedure for changing Equipment Custodians is almost identical to the previous example where we changed the Manufacturers. The main difference is how the Alternate Asset Field Descriptions are listed. There is a limitation when using this feature because the Alternate Asset Field Descriptions are a system wide configuration. Since this is a system configuration, the fields are not configurable from the Action Code.

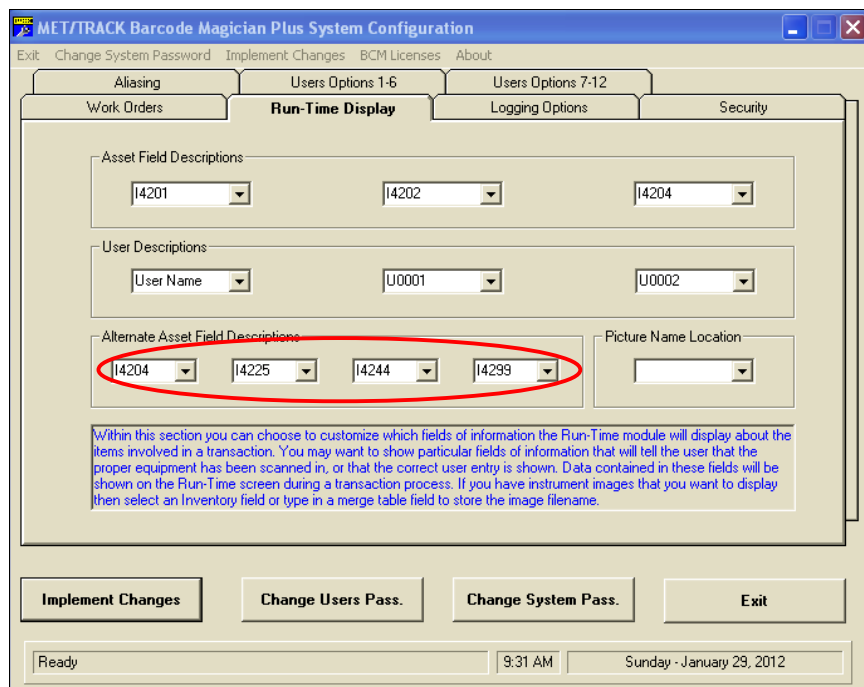
### Using the BCM Plus System Configuration Program

Select Start | All Programs | Barcode Magician 1.7 Applications | BCM System Configuration

When the BCM System Configuration program starts, it will prompt you for the BCM administrative password. After successfully entering the password, a screen like the one at right will be displayed.

The Run-Time Display tab is already displayed and that is where we are going to configure the Multiple Look-up.

The BCM Run-Time Program can display up to four fields plus the asset number in an alternative selection list. The Action Code will be configured to search an alternative field if the asset number is not found. Originally, this feature was designed to search serial numbers.



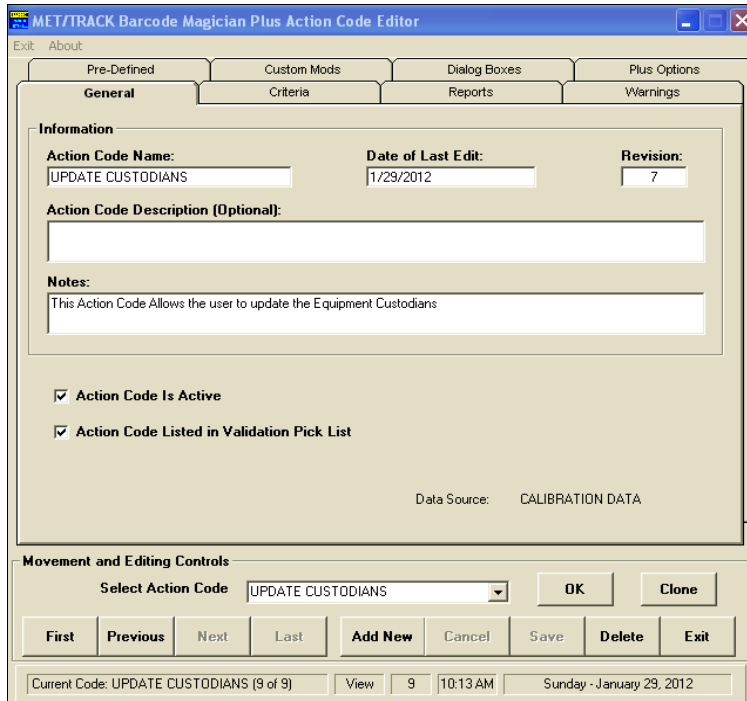
We have re-configured the Alternate Asset Field Descriptions for this example. The BCM Runtime Screen will automatically display the Asset Number (I4201). We have configured the fields Description (I4204), Status (I4225), Existing Equipment Custodian (I4244), and Instrument State (I4299). Sometimes the fields will not display in the drop down list. If the inventory fields are alphanumeric, you can type in the field numbers. In our example, Status was not listed in the list and we typed in I4225. After updating the screen, click **Implement Changes** and then click **Exit**.



### Configure the Action Code

The next step is to configuration the Action Code for our Equipment Custodian update. Select Start | All Programs | Barcode Magician 1.7 Applications | BCM AC Editor.

After the Action Coded Editor starts, you must log in with the BCM Administrative Password. This will be the same password used for the BCM Configuration Program.



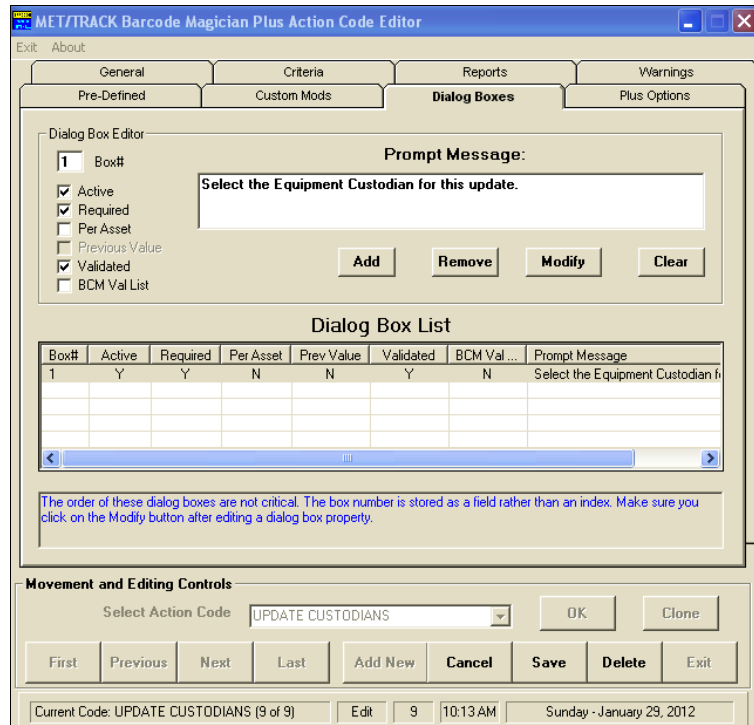
We are going to create a new Action Code called EQUIP CUSTODIANS. Click the **Add New** button and a new Action Code screen is displayed. We entered **UPDATE CUSTODIANS**.

You can click the **Save** button, and then edit the Action Code. After saving the Action Code, you will have to re-select it from the list to be edited.

After creating the Action Code, we selected the Dialog Boxes tab. The purpose of this process is to create an operator prompt using a validation list to select the new Equipment Custodian. Important: You must have the entry in the Met/Track validation list first. BCM will detect that the Equipment Custodian field is validated and it can display the validated list. On the screen at right, we entered 1 for the Box# and then selected the Dialog Box to be Active, Required, and Validated. This is a very simple configuration.

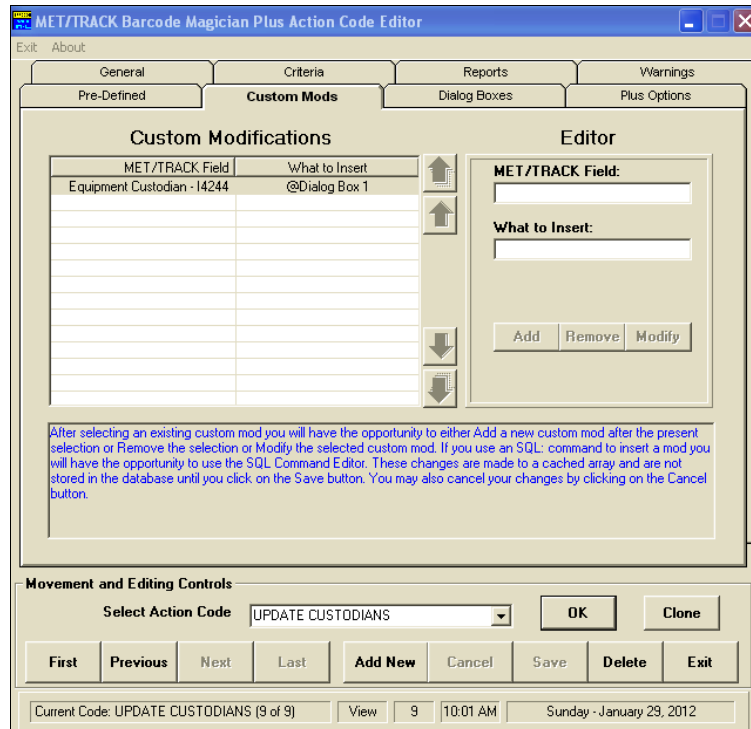
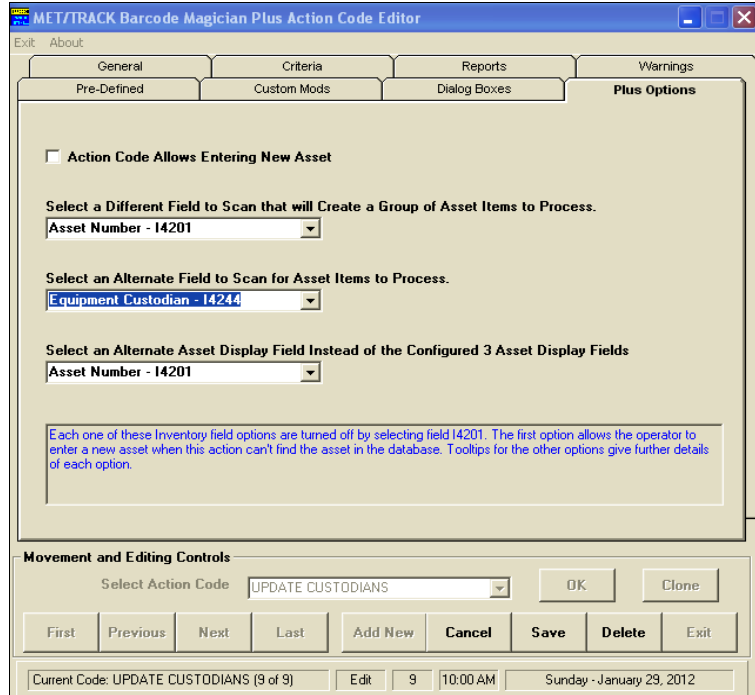
After entering the Dialog Box Prompt, click the **Add** button and it will show up in the Dialog Box List.

You can **Save** the Action Code, but make sure you re-select it from the list.



The next step is to set the Action Code to scan an alternate field if the system does not find the asset number. If we enter a custodian name instead of an asset number, the system will scan the Equipment Custodian Field (I4244). The selection is shown at right.

Click on the Custom Mods tab.



The Custom Mods is the last configuration to perform in the BCM Action Code Editor. There is only one entry necessary. In the “Met/Track Field” box, click the down arrow to select Equipment Custodian - I4244.

In the “What to Insert” box, click the down arrow to select Dialog Box 1.

BCM supports linked validation and will automatically update the linked database fields using the Root Linked Field. There is no need to enter the other linked fields.

Click the **Add** button and the Custom Modification will be displayed in the left pane.

This should complete the configuration of the Action Code. Click the **Save** button to save the Action Code.

The next step is to test the Action Code in the Run-Time Program. You can close the Action Code Editor.

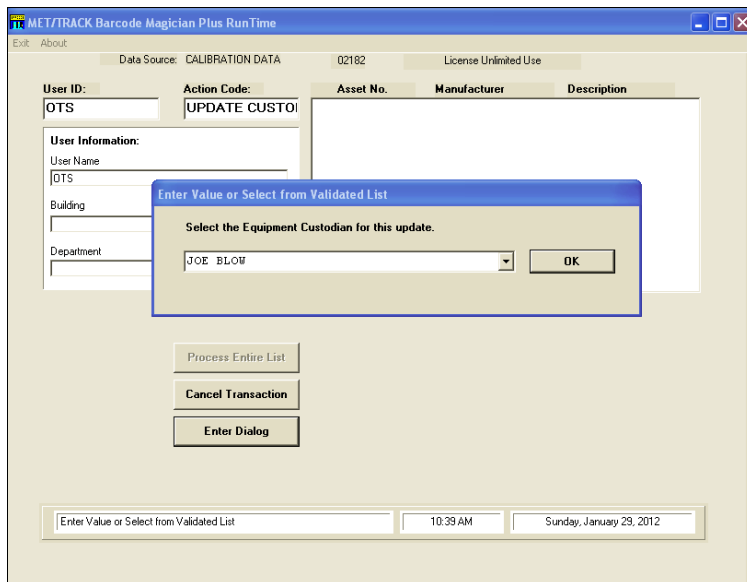
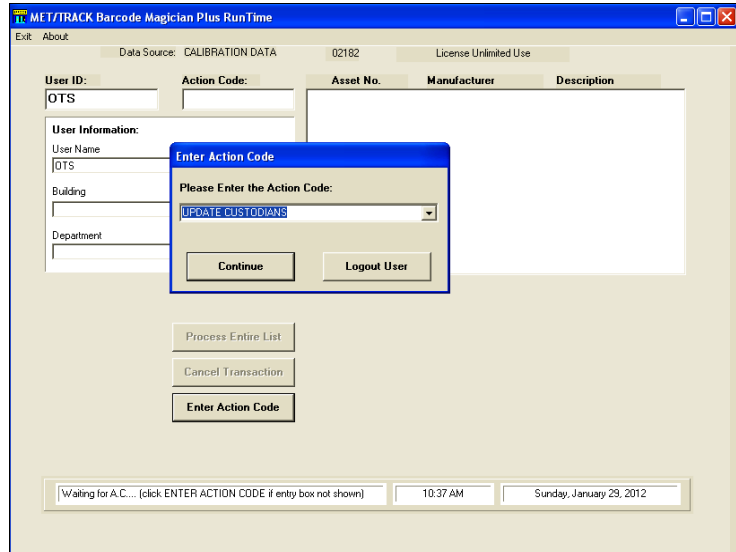
### Test the Action Code

Select Start | All Programs | Barcode Magician 1.7 Applications | BCM Runtime.

We are going to change the Equipment Custodian in our database. John Wayne has retired and we are going to move his equipment responsibilities to Joe Blow. This change will also move the Cost Center information automatically.

A screen like the one at right will appear. This is the Run-Time program where the actual changes to the database are made.

We have already entered the BCM User ID and the next step is to select the UPDATE CUSTODIANS Action Code as shown at right.

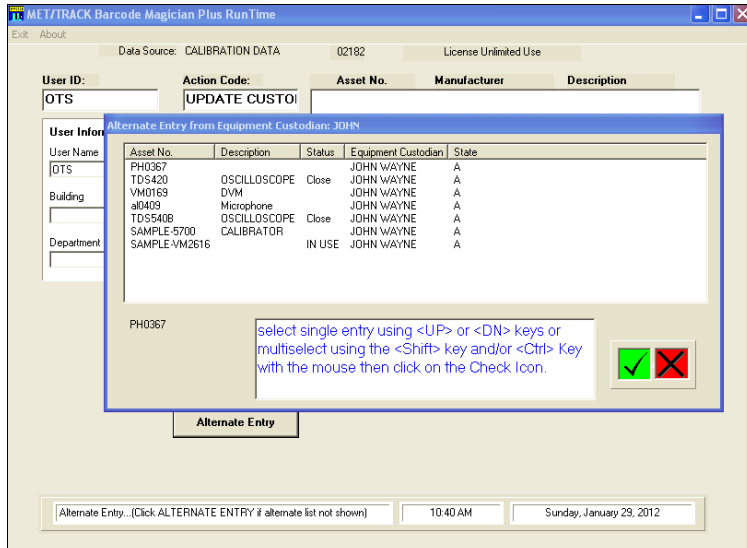


We have already entered the User ID and selected the UPDATE CUSTODIANS action code. You will notice these entries in the Run-Time screen shown at left.

After selecting the UPDATE CUSTODIANS Action Code, the program prompts for the new Equipment Custodian that we want to update. In our example, we selected JOE BLOW.

We will change anything that starts with JOHN as in JOHN WAYNE.

Click **OK** in the Dialog Box.

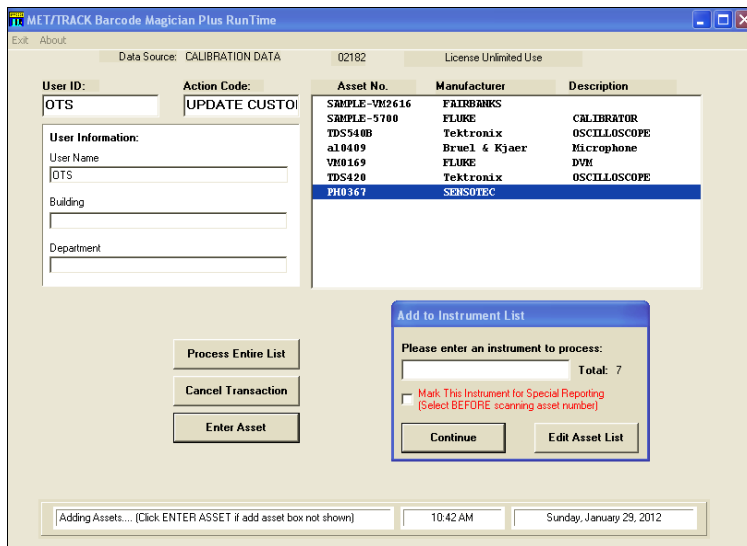
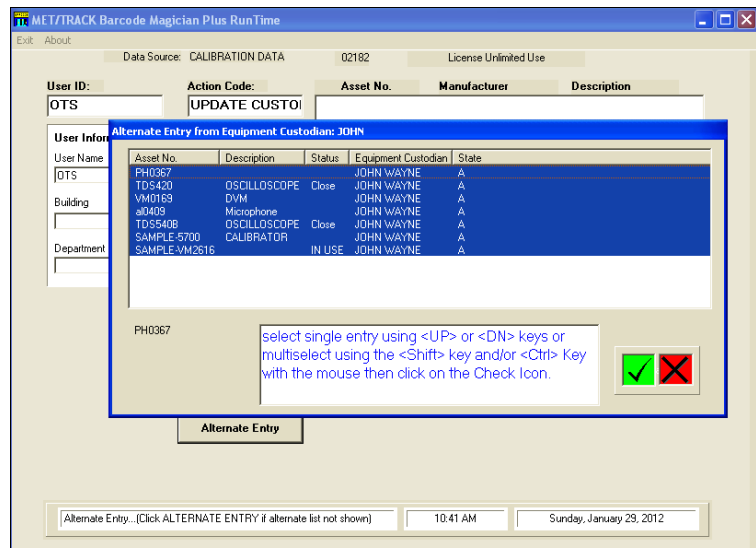


The Equipment Custodian that we are going to change starts with John. We have entered John and all the instruments assigned to John Wayne are displayed. When the Action Code tries to search for John in the asset number, the program will not find it, and then it will search the Equipment Custodian field and find those assets. You can also enter the entire phrase to search.

Click **Continue**.

We have highlighted all the assets in the Alternate Entry Screen because all these Equipment Custodian start with John, for John Wayne.

Click on the Green Check icon and the assets will automatically be populated in the list.



We now have the populated list of assets that we will change with the new Equipment Custodian. Click **Process Entire List** and the update will be complete. This completes this example.

## Advanced BCM Topics

Both of the examples within the application note are very useful within today's environment. However, there are some issues to note.

### Dialog Box – Pick Fields vs Validated Fields

In both examples, when using the Dialog Box entry, we selected the validation check box. This means that BCM will only accept the validated entries within the Met/Track database. If you do not check the Validated check box, and the Met/Track field is configured as a pick field or a validated field, BCM will treat this as a pick field. You will have the option to select from a drop down list or type in the entry manually.

The same rules apply to Linked Validation, but Met/Track does not allow pick fields in Linked Validation. However BCM will do this. At the prompt, you can select from the drop down selection list or type in a value. If you type in a non validated value with a system using linked validation, only the root field will be updated, unless additional configurations are applied to the Custom Mods selection in the Action Code Editor.

Box#	Active	Required	Per Asset	Prev Value	Validated	BCM Val...	Prompt Message
1	Y	Y	N	N	Y	N	Select the Equipment Custodian for this update.

Use caution with combining Validated Lists and Pick Lists together and run some tests first using some test asset numbers.

### Updating the Validated Field List in the Database.

In our example with the MFG UPDATE Action Code, we successfully changed the manufacturer information in the Manufacturer (I4202) field, which is displayed in the Inventory screen. However, our example did not update the Manufacture Validation list in Met/Track. With our previous example, the manager would have to log into Met/Track and refresh the validation list. When performing a refresh function, Met/Track selects a distinct list for that asset field. You do not have control over this process. If there are entries that you do not want, you must manually edit them out.

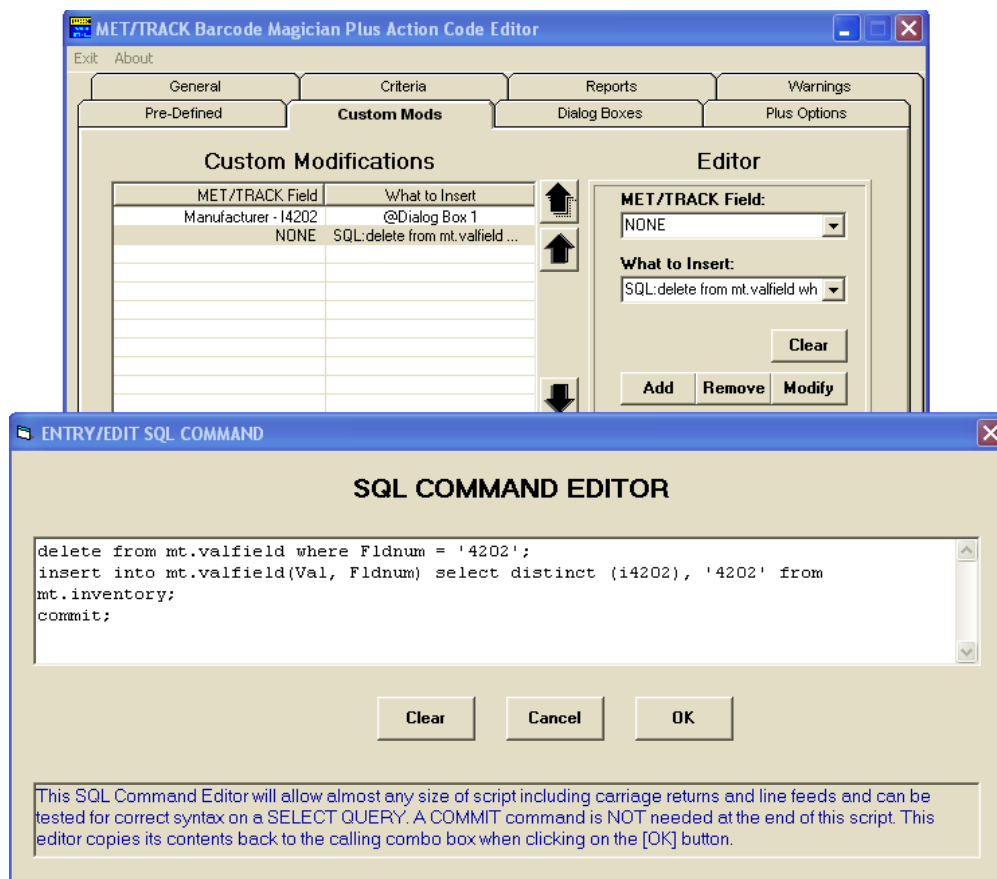
If you want BCM to automatically build a new Validation list, this can be done with an SQL statement executed with BCM. This is an advanced topic and if you are not familiar with SQL, seek some assistance. Use the following example at your own risk!

We have added another entry to our MFG UPDATE Action Code in the Custom Mods section. In the Met/Track field we selected NONE. In the What to Insert section we select SQL:. BCM Plus 1.7 has an SQL Editor and it works well for this example.

In order to update the Met/Track Validation list we have written the following SQL code:

```
delete from mt.valfield where Fldnum = '4202';
insert into mt.valfield(Val, Fldnum) select distinct (I4202), '4202' from mt.inventory;
commit;
```

The first line deletes the entries for field I4202 from the Valfield table. This table is only used for simple validations, not linked validations. The second line performs the insert of the new validation list and is selected from the database in the same manner that Met/Track does. This second line could be expanded to add or ignore entries in the list. The Custom Mod Screen is shown below.



A similar method could be used to update Linked Validation, but that method is more involved and requires more SQL commands to achieve the same results. We are available to help with SQL statements to do this.

## Conclusion

In summary, BCM is very configurable and provides a safe and reliable way to update the database. On Time Support is available to provide various of levels of support. You can also utilize the **metlist**, which is free, for help. The best experts, our customers, are very capable at making suggestions. If you have questions, let us know. We are happy to help.