



Infor Distribution FACTS 7.9.0 Manufacturing Control Users Guide

Copyright © 2014 Infor

Important Notices

The material contained in this publication (including any supplementary information) constitutes and contains confidential and proprietary information of Infor.

By gaining access to the attached, you acknowledge and agree that the material (including any modification, translation or adaptation of the material) and all copyright, trade secrets and all other right, title and interest therein, are the sole property of Infor and that you shall not gain right, title or interest in the material (including any modification, translation or adaptation of the material) by virtue of your review thereof other than the non-exclusive right to use the material solely in connection with and the furtherance of your license and use of software made available to your company from Infor pursuant to a separate agreement, the terms of which separate agreement shall govern your use of this material and all supplemental related materials ("Purpose").

In addition, by accessing the enclosed material, you acknowledge and agree that you are required to maintain such material in strict confidence and that your use of such material is limited to the Purpose described above. Although Infor has taken due care to ensure that the material included in this publication is accurate and complete, Infor cannot warrant that the information contained in this publication is complete, does not contain typographical or other errors, or will meet your specific requirements. As such, Infor does not assume and hereby disclaims all liability, consequential or otherwise, for any loss or damage to any person or entity which is caused by or relates to errors or omissions in this publication (including any supplementary information), whether such errors or omissions result from negligence, accident or any other cause.

Without limitation, U.S. export control laws and other applicable export and import laws govern your use of this material and you will neither export or re-export, directly or indirectly, this material nor any related materials or supplemental information in violation of such laws, or use such materials for any purpose prohibited by such laws.

Trademark Acknowledgements

The word and design marks set forth herein are trademarks and/or registered trademarks of Infor and/or related affiliates and subsidiaries. All rights reserved. All other company, product, trade or service names referenced may be registered trademarks or trademarks of their respective owners.

Publication Information

Release: Infor Distribution FACTS 7.9.0

Publication date: October 15, 2014

Contents

- About this guide..... 5**
 - Intended audience 5
 - Related documents..... 5
 - Contacting Infor..... 5
- Chapter 1 Overview 7**
 - Manufacturing Control System Overview 7
 - Posting to General Ledger 10
- Chapter 2 Work Flow & Program Concepts 13**
 - Manufacturing Control Work Flow & Program Concepts 13
 - Bill of Materials Work Flow 13
 - Formulation Work Flow..... 15
 - Formulation Program Concepts 16
 - Manufacturing Control Inquiries Work Flow 18
 - Manufacturing Reports & Prints (MCS700) Work Flow..... 19
 - End of Period Work Flow..... 22
 - Manufacturing Control File Maintenances Work Flow 22
 - Manufacturing Control Infrequent File Maintenances Work Flow 23
- Chapter 3 Transaction Procedures 25**
 - Manufacturing Control Transaction Procedures..... 25
 - Recommended Operating Procedures..... 25
 - Daily Procedures (or as needed) 25
 - Weekly Procedures (or as needed) 25
 - Period Procedures (or as needed)..... 25
 - Yearly Procedures..... 26
 - Standard Procedures..... 26
 - Bill of Materials Transaction Procedures..... 26
 - Entering bill of material finished items 26

Entering and displaying bill of material finished items planned for production.....	28
Entering production tickets for bill of material finished items.....	29
Confirming BOM production tickets	31
Running the Production Register	32
Formulation Transaction Procedures	33
Entering formulas	33
Creating a finished item	34
Entering and displaying formulas and finished items planned for production	35
Entering production tickets for formulas.....	37
Confirming formulation production tickets.....	38
Running the Production Register	40
Inquiries Transaction Procedures.....	41
Displaying bill of material finished item information	41
Displaying formula information.....	42
End of Period Transaction Procedures	43
End-Of-Period Checklist - Manufacturing Control.....	43
End-Of-Period Checklist Explanation.....	44

About this guide

This guide describes workflow, concepts and procedures for using Infor Distribution FACTS Manufacturing Control Module.

Intended audience

This guide is for Infor Distribution FACTS as end users, managers, in-house analysts, and trainers who require an understanding of the product and how to use it.

Related documents

You can find the documents in the product documentation section of Infor365, as described in "Contacting Infor" on page 5.

For information about other Infor Distribution FACTS modules or basic usage information, see these other users guides in the Infor Distribution FACTS PDF Library. Access these documents from the bookmarks of this document: FACTSDocNavigation.pdf.

Contacting Infor

If you have questions about Infor products, go to InforXtreme Online Support at <http://www.inforxtreme.com>.

If we update this document after the product release, we will post the new version on InforXtreme. We recommend that you check this Web site periodically for updated documentation.

If you have comments about Infor documentation, contact documentation@infor.com.

Manufacturing Control System Overview

The Infor Distribution FACTS Manufacturing Control module is a system, which will maintain accurate file information, provide complete audit trails and will optionally post to general ledger. Interaction with General Ledger is automatic and great flexibility is available through the use of GL posting tables (see section on Posting to GL).

The system has been designed so that all transactions will produce a printed audit trail. This allows users the secure feeling that all information is traceable throughout the system. Instructional prompts, default values and the capability to back up to previous fields promotes both operator efficiency and comfort in using the system.

Manufacturing Control is broken down into the following menus:

Bill of Materials

Formulation

Inquiries

Reports & Prints

End of Period

File Maintenances.

File maintenance programs allow the user to enter, change and delete data. These programs are used to enter the initial data required to set up the system. The user can add, change and delete the records in a file. This is called maintaining the file. Some file maintenance programs will be used often where others will be used infrequently. These infrequent file maintenances (found on the Infrequent File Maintenance menu) are used mostly in the installation of the system.

The Manufacturing System consists of two methods of production: bill of materials and formulation. A bill of material (BOM) item is an item whose quantities are maintained in a warehouse and it is produced by using component items whose quantities are also maintained in the same warehouse. As the bill of material finished item is produced, its on hand quantity is increased and the components' quantities are decreased. An example of a bill of material item would be a tool kit. The components would be one screwdriver, one wrench, one hammer, one saw, one box of nails, one roll of sandpaper and one plastic box (for packaging). All BOM finished items and component items must be set up in Inventory Control and must exist in a warehouse.

A formulation finished item is an item whose quantities are maintained in a warehouse and is produced using a formula (not an inventory item) and packaging items whose quantities are maintained in the same warehouse. The formula is produced using

ingredient items which are also maintained in the same warehouse. Following is an example of a formulation finished item produced through the formulation system:

Formula: F300 Cough Syrup
Standard production amount: 800 ounces
Ingredients of formula: hydrobromide - 400 ounces
 glycerin - 300 ounces
 camphon - 75 ounces
 sugar - 25 ounces

Finished item: 1 case of cough syrup
Uses 800 ounces of formula (F300)
Packaging items: 100 8-ounce bottles
 100 bottle caps
 100 labels
 1 crate

In the example, the finished item is a case of cough syrup which consists of 100 8-ounce bottles of cough syrup. Packaging items are used to produce the finished item along with the formula of 800 ounces of cough syrup. The formula is produced using the ingredients.

In the bill of materials subsystem, the BOM finished item is set up in the BOM Entry program. The user enters the BOM finished item in the overhead, labor and packaging factors (extra costs) in addition to each component item used and its quantity needed to produce the BOM finished item. Serial/lot items may be used for either the component or BOM finished items. Once the BOM finished item is set up the item is ready for production. Planned future production may be entered into the system through the Production planning Entry program. Production may be entered by finished item or by date. The Production Entry programs is where actual production is entered and Planned Production may be pulled over automatically from the planned production file (if applicable). During Production Entry, the user enters the number of BOM finished items to be produced. The system indicates whether there is enough of the component items on hand to complete production. After the production is entered, a production ticket must be printed to send to the warehouse to instruct production crews on what is needed. Production tickets are printed through the Production Ticket Print program. When the BOM items are produced, the user must confirm that production is complete through the Production Confirmation program. The Production Register is finally printed and updated to provide an audit trail of production and to update all appropriate Inventory, Manufacturing and General Ledger files.

A flag may be set in the SO Static Control F/M program telling the Bill of Materials system that production takes place when the item is sold and updated by the SO Daily Sales Register. If the flag is set to Y, the component items are updated in the SO system thus making production in the Bill of Materials system unnecessary.

In the formulation subsystem, the formula is set up in the Formula Entry program. Formulas are not inventory items, however, their ingredients are inventory items. The formulation finished items are set up through the Finished Item Entry program. The user enters the formulation finished item, the formula required to produce this finished item and the overhead and labor factors (extra costs). In addition, the user enters each packaging item used and its quantity needed to produce the formulation finished item. Serial/lot items may be used for either the finished item or the ingredient or packaging items. Once the formulation finished item is set up the item is ready for production.

Planned future production may be entered into the system through the Production Planning entry program. Production may be entered by finished item or by date. The Production Entry program is where actual production is entered and Planned Production may be pulled over automatically from the planned production file (if applicable). During Production Entry, the user enters the number of formulation finished items to be produced. The system indicates whether there is enough of the ingredient or packaging items on hand to complete production. After the production is entered, two production tickets (one for formula, one for finished items) are printed to send to the warehouse to instruct production crews on what is needed to produce the formula and the finished item(s). Production tickets are printed through the Production Ticket Print program. When the formula items are produced, the user must confirm that production is complete through the Production Confirmation program. The Production Register is finally printed and updated to provide an audit trail of production and to update all appropriate Inventory, Manufacturing and General Ledger files.

All bill of material and formulation information is available for display through the inquiry programs respectively. Information includes components (BOM) or ingredients and finished item (formulation), planned production, production in process, costing information, production history and production requirements. BOM or formulation notes may also be entered through the inquiries. The Inquiries provide users with all the production information at their fingertips and make production management an organized and efficient process.

The Manufacturing reports are provided to aid the user in the management of production. Each of the following reports are available in the Manufacturing Control module:

1. The Bill of Materials Listing provides a report of bill of material finished items and the component and costing information associated with each finished item.
2. The BOM Open Production Report provides a report listing by ticket (or item) the production tickets in process.
3. The BOM Requirements Report provides a report listing up to five time periods (months) of bill of material quantity requirements based on planned production.
4. The BOM Cost Change Analysis Report provides a list of new costs of BOM items if component costs are changed. It allows users to analyze how component cost changes affect total costs.
5. The Formula Listing provides a report of formulas and the ingredients, finished item, packaging items and costing information associated with code finished item.
6. The Formulation Open Production Report provides a report listing by ticket or formula, the production tickets in process.
7. The Formulation Requirements Report provides a report listing up to five time periods of formulation quantity requirements based on planned production.
8. The Formulation Cost Change Analysis Report provides a list of new costs of formulas if component costs (packaging and/or ingredient items are changed). It allows users to analyze how component cost changes affect total costs.

Posting to General Ledger

Transactions from Manufacturing Control may automatically post to General Ledger. Through the GL Distribution Flag set in the MC to GL Posting Control F/M Program, the user determines how to post to GL (if at all). The flag may be set to one of the following: 0 - indicating no GL distribution is printed or posted; 1 - indicating the GL distribution is printed (printing is in detail format) but not posted to GL; 2 - indicating the GL distribution is printed (printing is in detail format) and posted to GL in summary (posting includes the total amount posted to each account number); or 3 - indicating the GL distribution is printed (printing is in detail format) and posted to GL in detail (posting includes each item contributing to the amount for each account number).

Through the Bill Of Materials Journal and Formula Production Journal the user determines which GL journals (where in the general ledger journal file) to post production transactions from the bill of materials and formulation sub-systems.

The manufacturing transactions which may print a GL distribution and post to GL are the transactions from the BOM Production Register and the Formulation Production Register.

In the MC to GL Posting Control F/M Program, the user sets the production overhead, package and labor GL account numbers to post during production. In the GL posting tables set in Inventory Control, the user establishes for production the inventory, MC finished goods and MC components

GL account numbers to post during production. Each item in the inventory is assigned to a GL posting table. The GL account numbers used in posting production from the GL posting tables are based on the table assigned to the item in inventory. On the following page is an example of how BOM and formula production is posted to general ledger:

Production Register

Component cost -item 1 25.00

Component cost -item 2 30.00

Total component cost 55.00

Overhead cost 5.00

Package cost 3.00

Labor cost 4.00

Total cost to produce
finished item 67.00

GL Distribution

	DEBIT	CREDIT
** Inventory (Finished)	67.00	
** Inventory (Components)		55.00

*Overhead	5.00
*Package	3.00
*Labor	4.00
** MC Finished	55.00
** MC Components	55.00

* indicates GL number is created in the manufacturing GL posting control record.

** indicates GL number is created in the Inventory GL posting tables.

Finally, the user determines whether to post by branch in the MC to GL Posting Control F/M program. If set to Y, when building the GL distribution, the program inserts the branch assigned to the warehouse (in the IC Warehouse F/M) producing the materials (manufacturing the items).

Example: the G/L number is 120-00 and the branch is the last two characters (as set in the System Control F/M program). If the warehouse manufacturing the items is assigned branch 02, then if posting by branch, the G/L number posted is 120-02.

Bill of Materials

The programs on this menu allow the user to produce bill of material finished items. A bill of material item is an item whose quantities are maintained in a warehouse and it is produced by using component items whose quantities are also maintained in the same warehouse. As the BOM finished item is produced, its on hand quantity is increased and the components quantities are decreased.

Manufacturing Control Work Flow & Program Concepts

Bill of Materials Work Flow

The Bill of Material Entry (MCE110) program is used to enter the component items and number of units used to produce one finished item. The Bill of Material Entry screen consists of two sections. The upper portion of the screen is called the header portion where general information such as the finished item number, overhead, packaging and labor factors are entered. The lower portion of the screen is called the line-item portion where each component item and quantity used to make the bill of material item is entered. Once the bill of material item is set up in the entry program, production planning may be entered as well as actual production. The user has the option of changing, adding to, removing line-items from or deleting the bill of material item at any time. A bill of material item must be set through the Item F/M program and the BOM/Formula flag must be set to B before the items bill may be set up. All component items (items which are used to produce the bill of material item) must also be set up through the Item F/M program.

Production Planning (MCE120) may be used any time to enter production planned for the current or any future date. Production planning does not update any warehouse/item information. The user may enter finished items planned for production and the quantity planned to produce. The user may also display finished items planned for production in date or item order. Once an item has been entered for planned production, the user may display the requirements of the component items which lists the following: component item number and description, quantity required to produce finished item, stocking unit of measure, current quantities on hand, on order and committed. The user may change, add or delete any finished items planned for production.

When an item is to be produced, it is entered on a production ticket through the Production Entry (MCE110) program. Only one finished item (multiple units) is entered per production ticket. The Production Entry screen consists of two sections. The upper portion of the screen is called the header portion where the finished item number, number of units to be produced, etc. are entered. The lower portion is called the line-item portion where the component items, number of units required, etc. are entered. The user has the option of changing, adding to, removing line-items from or deleting the production ticket at any time. Deleted production ticket numbers may be used again.

Existing production planning for the bill of material finished item may be displayed. Production tickets are available for printing using the Production Ticket Print. Production tickets may later be confirmed and a register may be run to update on-hand quantities.

For EWMS processing, the Production Entry (MCE130) program checks to determine if the production ticket you are going to change has been waved by Radio Beacon. If it has, you will not be able to modify it, if it has not, the system sends a 'nuke' record to Radio Beacon causing this ticket to be removed. It will then need to be reprinted in order to get it sent back down to Radio Beacon.

Use the Production Ticket Print (MCP110) program to print production tickets. A production ticket tells the warehouse staff how many of a finished item to produce and the component items and number of each used to produce the finished item. The printed production tickets include all header and line-item information. The ticket's print size is 8-1/2" x 11" and will not exceed 80 columns.

For EWMS processing, the Production Ticket Print (MCP110) program creates 2 flat files that will be sent to Radio Beacon. Select the EWMS checkbox to control whether a flat file needs to be created.

Technical Notes for MCP110:

This program checks to see if you are using EWMS for this module based on the controls in the Warehouse File Maintenance. If you are and you answered "Y" to the send to EWMS question two flat files are created in the ssi7/ewms directory. The first file conforms to the Radio Beacon "PH" and "PD" file specifications. This will tell the picker what needs to be picked for the manufacturing process. The second file conforms to the Radio Beacon "RH" and "RD" file specifications. This is used to receive the newly created product into inventory. Once the program is complete, the flat files are moved from the ssi7/ewms directory to the upload directory specified in the warehouse file maintenance program. This process keeps Radio Beacon from trying to import the file before it is completely built.

Use the Production Confirmation (MCE140) program when production is complete. This program allows you to confirm BOM production tickets entered through the Production Entry program. The program also allows users to correct production tickets already confirmed and not updated by the Production Register. The confirmation process involves confirming that a finished BOM item was produced. Once a production ticket is confirmed, it is ready to print on the next Production Register. The user may access the ticket-by-ticket number or BOM finished item number. If accessing by finished item number, information for entered, printed and confirmed tickets is displayed in summary so the user may select the ticket to confirm. The summary screen displays the line number, ticket number, status of ticket (E-entered, P-printed or C-confirmed), warehouse produced in, entry date, schedule production date and quantity to be produced. The ticket number to be confirmed is displayed in a format similar to that used in the Production Entry program. The user enters the number of items produced and the date of actual production and each line-item is displayed. The user has the option of changing, adding to, or removing line-items from the ticket. The user may also delete the production ticket or stop confirmation at any time. Deleted production ticket numbers may be used again.

For EWMS processing, the Production Confirmation (MCE140) program does not allow confirmation of production orders that belong to a Radio Beacon controlled warehouse. That process is done by the upload stock picks and upload stock receipts programs.

Print the Production Register (MCR110) program to provide an audit trail of production and to update all appropriate inventory and manufacturing files. This program: prints a

listing of BOM production tickets confirmed, component items used and costing information; build and print a general ledger distribution, if desired; posts to general ledger, if general ledger is built; updates inventory and manufacturing files.

You have the ability to cost serial and lot items by the system cost (costing method for the module). The feature provides for GAAP compliance. For the FACTS SO, IC and MC modules, you can decide if the cost for serial and lot items will be averaged actual (as it has always operated in the past) or system cost (costing method for the module). The default setting for each Static Control F/M is A-Averaged Actual (same behavior as they have before the monthly is applied). Users who want to take advantage of this change will need to change the option to S-System Cost for each of the applicable modules. The net result of selecting S-System Cost is that serial/lot items will be costed like non-serial/lot items. The results of this program are affected by this selection.

Register information includes:

- Ticket: Each ticket includes ticket number, date, warehouse, finished item number and description.
- Component: Each component used includes the component item number and description, units used, stocking unit of measure, cost, costing unit of measure and extended cost.
- Ticket totals: Each ticket includes overhead, package and labor costs, component cost, calculated cost, total units produced and extended cost. The total number of tickets printed is also included.

Once this register is updated, all production tickets included on the register are not accessible for corrections.

Usage: The system assigns usage to the warehouse of the production header if the Replenish flag on the Main screen of Warehouse/Item F/M (ICF920) set to Y.'

Formulation Work Flow

The programs on this menu allow the user to produce formulas and finished items using the formulas. Formulas are not inventory items, however, a formula is made up of ingredients which are items maintained in a warehouse. A finished item is an item produced which consists of (part of) a formula and packaging items. Packaging items are maintained in the same warehouse.

Formulation Workflow Concepts

Following is an example of how formulation might be used:

Formula: F300 Cough Syrup

Standard Production Amount 800 ounces

Ingredients: hydrobromide 400 ounces

glycerin 300 ounces

camphon 75 ounces

sugar 25 ounces

Finished Item: 1 case cough syrup

Uses: 800 ounces of formula (#300)

Packaging items: 100 8-ounce bottles

100 bottle caps

100 labels

1 crate

In the example, the finished item is a case of cough syrup which consists of 100 8-ounce bottles of cough syrup. Packaging items are used to produce the finished item along with the formula of 800 ounces of cough syrup. The formula is produced using the ingredients.

When a one case cough syrup item is produced, its on hand quantity is increased by one. The ingredients: hydrobromide on hand quantity is decreased by 400, glycerin on hand quantity is decreased by 300, camphon on hand quantity is decreased by 75 and sugar on hand quantity is decreased by 25.

The packaging items: 8-ounce bottle on hand quantity is decreased by 100, bottle cap on hand quantity is decreased by 100, label on hand quantity is decreased by 100 and crate on hand quantity is decreased by 1.

Formulation Program Concepts

Use the Formula Entry (MCE210) program to enter the ingredient items and number of units used to produce a formula. The Formula Entry screen consists of two sections. The upper portion of the screen is called the header portion where general information such as the formula number, overhead and labor factors are entered. The lower portion of the screen is called the line-item portion where each ingredient item and quantity used to make up the formula is entered. Once the formula number is set up in the entry program, the finished items using the formula should be set up in the Finished Item Entry program. After packages are set up, production planning may be entered as well as actual production. The user has the option of changing, adding to, removing line-items from or deleting the formula at any time. Deleted formula numbers may be reused. All ingredient items (items which are used to produce the formula) must be set up through the Item F/M program.

Use the Finished Item Entry (MCE220) program to enter the packaging items and number of units used to produce a finished item. The Finished Item Entry screen consists of two sections. The upper portion of the screen is called the header portion where general information such as the finished item number, overhead, and labor factors are entered. The lower portion of the screen is called the line-item portion where each packaging item and quantity used to make the formulation finished item is entered. Once the finished item is set up in this program, production planning may be entered as well as actual production. The user has the option of changing, adding to, removing line-items from or deleting the package item at any time. A formulation finished item must be set through the Item F/M program and the BOM/FORMULA flag must be set to F before the finished item may be set up. All packaging items (items which are used to produce the formulation finished item) must also be set up through the Item F/M program.

Use the Production Planning (MCE230) program at any time to enter production planned for the current or any future date. Production Planning does not update any warehouse/item information. You can enter formulas and quantity planned for production and the finished items and the quantity planned for production. The user may also

display formulas planned for production in date or formula order. Once a formula has been entered for planned production, the user may display the requirements of the ingredient items which lists the following: ingredient item number and description, quantity required to produce finished item, stocking unit of measure, current quantities on hand, on order and committed. The user may change, add or delete any formulas planned for production along with finished items.

When a finished item is to be produced, it is entered on a formula production ticket through the Production Entry (MCE240) program. Only one formula (with multiple finished items as needed) is entered per production ticket. The Production Entry screen consists of two sections. The upper portion of the screen is called the header portion where the formula number, quantity to be produced, etc. are entered. The lower portion is called the line-item portion where the finished items, number of units required, etc. are entered. The user has the option of changing, adding to, removing line-items from or deleting the production ticket at any time. Deleted production ticket numbers may be reused. Production tickets are available for printing using the Production Ticket Print. Production tickets may later be confirmed and a register may be run to update on-hand quantities.

Use the Production Ticket Print (MCP210) program to print production tickets that tell employees how to create the formula and in what quantities. Two production tickets are then printed: 1) telling the warehouse staff how much of a formula to produce and the ingredients and number of each used to produce the formula; and 2) telling the warehouse staff how much of the finished item(s) to produce and the packaging items and number of each used to produce the finished item(s).

The printed production tickets include all header and line-item information. The system will print two tickets: a Formulation Production Ticket, which includes the formula number and quantity of the formula and for each of its ingredients, the number of units needed and a memo, and a Finished Item Ticket, which includes the formula number, each finished item and the quantity of the finished item and for each of its packaging items, the number of units needed and a memo.

Use the Production Confirmation (MCE250) program when formula production is complete. The program also allows users to correct production tickets already confirmed and not updated by the Production Register. The confirmation process involves confirming that a formula was produced along with the finished items which use the formula. Once a production ticket is confirmed, it is ready to print on the next Production Register. The user may access the ticket by ticket number or formula. If accessing by formula number, information for entered, printed and confirmed tickets is displayed in summary so the user may select which ticket to confirm. The summary screen displays the line number, ticket number, status of ticket (E-entered, P-printed or C-confirmed), warehouse produced in, entry date, scheduled production date and quantity to be produced. The ticket number to be confirmed is displayed in a format similar to that used in the Production Entry program. The user enters the number of items produced and the date of actual production and each line-item is displayed. The user has the option of changing, adding to or removing line-items from the ticket. The user may also delete the production ticket or stop confirmation at any time. Deleted production ticket numbers may be used again.

The Production Register (MCR210) is printed to provide an audit trail of production and to update all appropriate inventory and manufacturing files. This program will print a listing of formulation production tickets confirmed, ingredients used, finished item produced, packaging items used and costing information; build and print a general ledger

distribution, if desired; post to general ledger, if general ledger is built; update inventory and manufacturing files.

You have the ability to cost serial and lot items by the system cost (costing method for the module). The feature provides for GAAP compliance. For the FACTS SO, IC and MC modules, you can decide if the cost for serial and lot items will be averaged actual (as it has always operated in the past) or system cost (costing method for the module). The default setting for each Static Control F/M is A-Averaged Actual (same behavior as they have before the monthly is applied). Users who want to take advantage of this change will need to change the option to S-System Cost for each of the applicable modules. The net result of selecting S-System Cost is that serial/lot items will be costed like non-serial/lot items. The results of this program are affected by this selection.

Register information includes the following:

Ticket: Each ticket includes ticket number, date, warehouse, formula and quantity.

Ingredients: Each ingredient used includes the item number and description, units used, stocking unit of measure, cost, costing unit of measure and extended cost.

Ticket Formula: Each ticket includes overhead, and labor costs, ingredient cost and total cost.

Finished Item: Finished item number, description and formula quantity.

Packaging: Each packaging item used includes the item number, description, units used, stocking unit of measure, cost, costing unit of measure and extended cost.

Ticket Totals: Each ticket includes formula, overhead, labor and component cost, calculated cost, total units produced and extended cost. The total number of tickets printed is also included.

Once this register is updated, all production tickets included on the register are not accessible for corrections.

Usage: The system assigns usage to the warehouse of the production header if the Replenish flag on the Main screen of Warehouse/Item F/M (ICF920) set to Y.

The Bill of Materials and Formulation Production Register programs, MCR113 create usage credits for the component items. The usage credits appear in the ICRDST (Disbursements) file as PC for Production Credits and FC for Formulation Credits. A single entry is created, as needed, for component, ingredient and packaging item types.

Manufacturing Control Inquiries Work Flow

The inquiry menu allows users to display specific information for bill of material items and formulas.

The Bill of Materials Inquiry provides the following: component information (items, number of units, etc.), planned production by date, production tickets in process (summary and detail), costing history information, history information, requirements and notes (created through this program).

In the Bill of Materials Inquiry program you can access 7 views of information in the center section of the screen. Inquiry information for each item includes:

- General

- Components
- Planned
- Production
- Cost
- History
- Requirements

The Formula Inquiry provides the following: ingredient information (items, number of units, etc.), finished items (including packaging information), planned production by date, production tickets in process (summary and detail), costing information, history information, requirements and notes (created through this program).

Inquiry information for each formula includes:

- Ingredients
- Finished
- Planned
- Production
- Cost
- History
- Requirements
- General

Manufacturing Reports & Prints (MCS700) Work Flow

1. The Bill of Materials Listing provides a report of bill of material finished items and the component and costing information associated with each finished item. You can specify: print order - item, alpha, vendor or item class, beginning and ending order choice, vendor (or item class) to print, item description(s) to print, costing information and components item information.

Report information includes the following:

- Summary: Each BOM finished item number, description(s), stocking unit of measure, and indicator for updating in SO Daily Sales Register.
- Detail (includes component information): Summary information plus each component item and description(s), units for production, stocking unit of measure and memo.
- Costing Summary: Overhead, package, labor, component and total cost for each BOM finished item number.
- Costing Detail (includes component information): Overhead, package and labor factor for each BOM finished item. Cost and extension for each component item. Overhead, package, labor component and total cost for each BOM finished item.

2. The BOM Open Production Report provides a report listing by ticket (or item) the production tickets in process. You can specify: print order (ticket or item), beginning and

ending order choice, beginning and ending date, item description(s), sort information by date, warehouse(s), and whether to print entered, printed and/or confirmed tickets.

Report information includes the following for each production ticket: ticket number, planned date, status (E-entered, P-printed, C-confirmed), warehouse, finished item number and description(s), units, stocking unit of measure, on hand, on order and committed quantities (of the finished item). The total number of tickets printed is also included.

3. The BOM Requirements Report provides a report listing up to five time periods (months) of bill of material quantity requirements based on planned production. The user prints a listing of what is required to produce and what components are needed based on all planned production that has been entered in the BOM Planned Production Entry program. At the end of the report, the user may remove the planned production information, convert it to production or leave requirements alone.

You can specify: beginning and ending item, item description(s), warehouse, whether to print components, number of time groupings, number of days to be used for automatic date increments, and dates for time groupings.

Report information includes the following:

- Bill of material items: Item number, description, on hand, on order and committed quantities, stocking unit of measure, required amount for each time period and total required. The total number of BOM items listed is also included.
- Component items: The same information as BOM item for each component. The total number of component items listed is also included.

4. The BOM Cost Change Analysis Report provides a list of new costs of BOM items if component costs are changed. It allows users to analyze how component cost changes affect total costs. You can specify: beginning and ending BOM finished item, item description(s), which cost to use in calculating cost changes - standard, average, last or manual and up to six component item cost changes.

Report information includes the following: component item(s) entered and their new cost and the costing unit of measure. For each BOM item, the item number and description, price, pricing unit of measure, current and new cost, costing unit of measure, \$ difference and the percentage (%) change are printed. The total number of BOM items listed is also included.

5. The Formula Listing provides a report of formulas and the ingredients, finished items, packaging items and costing information associated with code finished item. You can specify: beginning and ending formula, and whether to print costing information, ingredient information, and/or finished item information.

Report information includes the following:

- Summary: Formula number and description, standard quantity, unit of measure, waste percentage, overhead and labor factors.
- Detail: Summary information plus each ingredient, finished and/or packaging item number and description, units for production, stocking unit of measure and memo.
- Costing (includes ingredient, finished and/or packaging): For each item the cost, costing unit of measure and extension. For each formula, overhead, labor, ingredients and total cost.

The total number of formulas listed is also included.

6. The Formulation Open Production Report provides a report listing by ticket (or formula), the production tickets in process..

You can specify: print order (ticket or formula), beginning and ending order choice, beginning and ending date to print, sort tickets by date, warehouse(s) to print and whether to print entered, printed and/or confirmed tickets.

Report information includes the following for each formulation production ticket: ticket number, date, status (E-entered, P-printed, C-confirmed), warehouse, formula number and description, each finished item, the item number and description, units, stocking unit of measure, on hand, on order and committed quantities (of the finished item). The total number of tickets printed is also included.

7. The Formulation Requirements Report provides a report listing up to five time periods of formulation quantity requirements based on planned production. The user prints a listing of what formulas will be required to produce, what ingredients will be needed, what finished items are required to produce, and what packaging items are needed based on all planned production that has been entered in the Formulation Planned Production Entry program. At the end of the report, the user may remove the planned production information, convert to production or leave requirements alone.

You can specify: beginning and ending formula and warehouse(s) to print, whether to print detail information - ingredients, finished items, packaging items, the number of time groupings, the number of days to be used for automatic date increments and dates for time groupings.

Report information includes the following:

- Formulas: Formula number, description, unit of measure, required amount for each time period and total required. The total number of formulas listed is also included.
- Ingredients: Item number, on hand, on order and committed quantities, stocking unit of measure, required amount for each time period and total required. The total number of ingredients listed is also included.
- Finished items: The same information as ingredients. The total number of finished items listed is also included.
- Packaging items: The same information as ingredients. The total number of packaging items listed is also included.

8. The Formulation Usage Cost Change Analysis Report provides a list of new costs of formulas if component costs (packaging and/or ingredient items) are changed. It allows users to analyze how component cost changes affect total costs. You can specify: beginning and ending formulation finished item and item description(s) to print, which cost to use in calculating cost changes - standard, average, last or manual and up to six packaging and/or ingredient item cost changes.

Report information includes the following: packaging and/or ingredient item(s) entered and their old and new cost and the costing unit of measure. For each formula, the formula and description, current and new cost, costing units of measure, \$ difference and the percentage (%) change are printed. For each finished item the item number and description, formula number and description used, price, pricing unit of measure, current and new cost, costing unit of measure, \$ difference and the percentage (%) change are printed. The total number of finished items listed is also included.

End of Period

The end-of-period menu contains programs that should be run at the end of each manufacturing control period to close it correctly.

End of Period Work Flow

The Bill of Material Production and Formulation Production reports provide a report of all BOM and formulation tickets respectively confirmed and updated for the period.

Tickets are updated to the Bill of Material Production report by the BOM Production Register update. It is suggested that the report be printed and updated as part of the end-of-period procedures. To prevent file overflow, the records should be removed on a regular basis.

Report information includes the following for each ticket: ticket number, production date, warehouse, finished item number and description, units produced and stocking unit of measure. The total number of tickets printed is also included.

Tickets are updated to the Formulation Production report by the Formulation Production Register update. It is suggested that the report be printed and updated as part of the end-of-period procedures. To prevent file overflow, the records should be removed on a regular basis. Report information includes the following for each ticket: ticket number, production date, warehouse, formula number and description, units produced and unit of measure. For each finished item on the ticket, finished item number and description, units produced and memo are printed. The total number of tickets printed is also included.

For both of these reports you can specify: print order - ticket, item or date, beginning and ending order choice. item description(s), period and warehouse(s) to print.

The End-of-Period Update closes the current manufacturing period by clearing month-to-date BOM item and formula production history, rolling year-to-date BOM item and formula production history to prior year (if it is year-end) and rolling the current period forward. This update allows the user to: Close out the current period in manufacturing control; Clear the month-to-date BOM item production history and formula production history; Roll year-to-date BOM item and formula production history to prior year, if it is the end of the year. Prior to running this update, the user should run the BOM and Formulation Period Production Reports (otherwise, month-to-date production history is lost).

Manufacturing Control File Maintenances Work Flow

File maintenance programs allow the user to enter, change and delete data. These programs are used to enter the initial data required to set up the system (refer to Installation Manual).

The user can add, change and delete the records in a file. This is called maintaining the file. Some file maintenance programs may be used often (example - none in MC) where others are used less frequently. There is an Infrequent File Maintenances menu for the latter programs; most of these are used only one time during the initial set up of the system. However, the information in the infrequent file maintenances may be updated by

the system. An example would be the Nonstatic Control F/M which keeps track of the period, the register and ticket trace numbers.

The following programs are on the Manufacturing Control F/M menu:

Use BOM History F/M (MCF910) to maintain BOM history for finished items which includes for each warehouse, month-to-date, year-to-date and prior year units produced and the last date produced. The user may elect to gather historical information on some or all BOM finished items. If so, it may be entered here prior to actual processing; thereafter, it is updated by the Production Register update.

Use Formula History F/M (MCF920) to maintain formula history for formula numbers which includes for each warehouse, month-to-date, year-to-date and prior year units produced and the last date produced. The user may elect to gather historical information on some or all formula numbers. If so, it may be entered here prior to actual processing; thereafter, it is updated by the Formulation Production Register update.

Manufacturing Control Infrequent File Maintenances Work Flow

File maintenance programs allow the user to enter, change and delete data. These programs are used to enter the initial data required to set up the system (refer to the Installation Manual).

The user can add, change and delete the records in a file. This is called maintaining the file. Some file maintenance programs may be used often where others are used less frequently. There is an Infrequent File Maintenances menu for the latter programs; most of these are used only one time during the initial set up of the system. However, the information in the infrequent file maintenances may be updated by the system. An example would be the Nonstatic Control F/M which keeps track of the sales orders period and all the register trace numbers.

All files, once set up, are maintained and updated by the system. Most file maintenances in the sales orders system do not need to be maintained by the user and it is unlikely that they will be used.

The following programs are on the Manufacturing Control Infrequent F/M menu:

Use MC To GL Posting Control F/M (MCF970) to set up how to post transactions from manufacturing into the general ledger.

Infor™ strongly recommends that Administrators or Implementation Consultants password-protect the Static Control F/M (MCF980) and Nonstatic Control F/M (MCF990) programs. Changes should be made only with extreme caution and under the supervision of a local FACTS Affiliate.

Use Static Control F/M (MCF980) to create and maintain the company MC static control record. The MC static control record is critical to the proper functioning of the MC system. The record contains information which the MC system references in performing various functions.

Use Nonstatic Control F/M (MCF990) to create and maintain the company MC nonstatic control record. The MC nonstatic control record is critical to the proper functioning of the MC system. The record contains information which the MC system references in performing various functions.

Use Rebuild MC Sort Files (MCU990) to rebuild sort files that may not be up to date with the rest of the system.

Sort files are used throughout the FACTS system to enable the user to report and retrieve information in an order other than the order in which the main file is stored. For example, the records of the customer file are stored in customer number order. To access this file in alphabetical order requires a sort file, which is stored in customer by alpha lookup order. The corresponding record in the main file may then be accessed for the necessary information.

Manufacturing Control Transaction Procedures

Recommended Operating Procedures

Daily Procedures (or as needed)

(For Bill of Materials and/or Formulation)

1. Enter Production Planning
2. Enter production
3. Print production tickets
4. Confirm production
5. Print/update Production Registers

Weekly Procedures (or as needed)

1. Print Requirements Report (for BOM and/or Formulation)

Period Procedures (or as needed)

1. Complete all BOM and/or Formulation production
2. Print/update BOM Period Production Report
3. Print/update Formulation Period Production Report

4. Run End-of-Period Update

Yearly Procedures

- *1. Run End-of-Period Update (already covered in period procedures - do NOT run twice)**

* indicates the procedure is required and must be performed in the time period designated.

Standard Procedures

This section covers standard procedures to be followed for Manufacturing Control. These procedures may vary depending on how your company's business is conducted. The following three sections of standard procedures are provided as a guideline:

1) Recommended Operating Procedures

An outline is provided of routine procedures on a daily, weekly, period (month, if 12 periods are used) and yearly basis.

2) End-Of-Period Checklist

The end-of-period procedures are critical to the proper functioning of the system. Certain programs must be run in a specific order to close the accounts receivable module accurately.

It is suggested that copies of the checklist be made and used for each period close-out to be filed for future reference.

3) End-Of-Period Checklist Explanation

A detailed account is provided of the purpose of each program on the checklist.

Bill of Materials Transaction Procedures

Entering bill of material finished items

- 1** Access this program by choosing Manufacturing Control-->Bill of Materials-->Bill of Materials Entry
- 2** Enter the finished item number. For valid finished items, the system displays the description(s) and stocking unit of measure. Press F3 to search through finished items already set up.
- 3** In the Overhead field, enter the overhead cost per unit of producing this item as an amount or a percentage. To enter a percentage, enter the number and a % before pressing Enter (CR).

- 4 In the Package field, enter the packaging cost per unit of producing this item as an amount or a percentage. To enter a percentage, enter the number and a % before pressing Enter (CR).
- 5 In the Labor field, enter the labor cost per unit of producing this item as an amount or a percentage. If entered as a percentage, enter the number and a % before pressing Enter (CR).
- 6 In the Update in SO field, enter one of the following values to indicate if component items for this finished item can be updated in Sales Orders:
 - F -finished items can only be assembled in MC, i.e., finished items can only be produced by using the MC entry and register programs.
 - C -finished items must be assembled from components entered in an SO entry program to update on-hand quantities. The user will have the option at the time of entry whether to create BOM component line-items automatically or one at a time. Creating component line-items automatically means the BOM Component Entry window is displayed with the line-items already entered. Creating component line-items one at a time means the system displays the BOM Component Entry window but waits for you to enter the number of units needed for each line-item.
 - A -finished items must be assembled from components entered in an SO entry program to update on-hand quantities. In SO the system will display a message that it is creating component items, then it will proceed to the next field. The BOM Component Entry window is not displayed. However, you can back up to the window if changes are necessary.
 - O -the operator can decide at the time of entry in SO whether to enter BOM component items as previously described for options F, C, or A.
- 7 If you enter options C or A, the finished items should not be produced with MC. Press Enter (CR) to default to F. The BOM Update flag of the SO static control record must be set to Y for an entry of C, A, or O in this field to be meaningful.
- 8 This concludes the header portion of the Bill of Material Entry program. At this time, the header record is created. After the header record is created, all the header fields except #1 are accessible through the change header routine. Field #1 can only be changed by deleting and reentering the finished item number.
- 9 In the Item Number field, enter the component item number to be used to produce the bill of material finished item. For valid entries, the system displays the item description and stocking unit of measure. You can access Note Entry (SME710) for the item highlighted in BOM line item browser or Note Entry (SME710) for the BOM document line record highlighted in the line item browser.
- 10 In the Units field, enter the number of units needed to produce one finished item.
- 11 In the Memo field, enter the memo to appear on the BOM listing (up to 20 characters).
- 12 You can select from the following to perform the listed functions:

Change a line-item

Add line-items

Insert line-items

Delete line-items

Stop line-item entry

Access Note Entry (SME710) for the item highlighted in BOM line item browser or for the BOM document line record highlighted in the line item browser.

Done Ends Bill of Materials Entry and returns you to the Finished Item field. Press Done again to exit the program.

Entering and displaying bill of material finished items planned for production

- 1 Access this program by choosing Manufacturing Control-->Bill of Materials--> Production Planning
- 2 In the Order field, enter whether to display planned production in D-date or I-item order. Press Enter (CR) to default to D.
- 3 In the Beginning field, enter the beginning date or finished item number to display. Press Enter (CR) to default to FIRST. If you selected to display planned production in item order, enter the beginning finished item number to display. Press F2 to search for items.
- 4 The program displays planned production in either date order or item order. You can select from the following functions:
- 5 You can

highlight a line item and delete the line-item.

Access Note Entry (SME710) for the BOM document line record highlighted in the line item browser.

Add a line-item - Line items may be added when entering planned production of finished items.

- 6 Change a line-item – You can highlight a line item and modify the Units needed for production.

Delete a line-item - Line items may be deleted when entering planned production of finished items.

Components-- Accesses Production Planning Requirements (MCE121) program, which is used to display the components, quantities needed for the finished item, as well as on hand, on order and committed component quantities. You access Note Entry (SME710) for the BOM document line record highlighted in the line item browser or access Note Entry (SME710) for the item highlighted in BOM line item browser. When requirements are displayed, an asterisk (*) next to the units indicates that the number of units required

is greater than available (available = on hand - committed). Press Done to return to Production Planning.

- 7 To change or delete any finished items planned for production, complete steps 5-7:
- 8 Highlight the line you want to delete or change.
- 9 Delete the line. If you Edit, the system accesses the Units field, so you change the quantity planned to produce.
- 10 To add finished items planned for production, complete steps 9-15:
- 11 Add as needed to access add-mode, then enter the planned production date Press Enter (CR) to default to the system date.
- 12 Enter the warehouse. The entry must be a valid warehouse. Press Enter (CR) to default to the warehouse assigned to the terminal.
- 13 Enter the bill of material finished item number. The entry must be a valid finished item.
- 14 Enter the quantity planned to produce.
- 15 Save the new requirements for producing the finished item.
- 16 Press Components to display the requirements for producing the quantity of the finished item entered. Press Done to return to Production Planning. When requirements are displayed, an asterisk (*) next to the units indicates that the number of units required is greater than available (available = on hand - committed).
- 17 Press Done to return to the Order field. Press Done again to exit the program.

Entering production tickets for bill of material finished items

- 1 Access this program by choosing Manufacturing Control-->Bill of Materials-->Production Entry.
- 2 Enter the number of the ticket (1-999999), the item number or finished item number.
- 3 In the Whse field, enter the warehouse to produce the finished item (i.e., all component items will come from this warehouse). Press Enter (CR) to default to the warehouse assigned to the terminal.
- 4 In the Entered field, enter the date of the production entry Press Enter (CR) to default to the system date.
- 5 In the Production field, enter the planned production date, i.e., date production is scheduled to take place. Press Enter (CR) to default to the system date.
- 6 In the Units field, enter the number of units to produce.
- 7 Press F2 to display production planning for the finished item being entered.
- 8 This concludes the header portion of the production entry program. At this time, a ticket number is automatically assigned and displayed. After the header record is created, all header fields except #1-3 are accessible through the change header routine. Fields #1-3 can only be changed by deleting and reentering the production ticket. Upon completion

of the header, the on-order quantities are updated for the warehouse for the BOM finished item.

- 9** Upon completion of the header, the program automatically displays the required component line-items. The units required of the component items are calculated based on the number of finished units entered in the header. Once the component line-items are added, the committed quantities are updated in the warehouse for those component items. On hand, on order, committed quantities and the stocking units of measure are displayed in the line-item section of the screen.

- 10** You can perform a number of functions:

Change a line-item

Add line-items

Insert line-items

Delete line-items

Stop line-item entry

Access Note Entry (SME710) for the item highlighted in BOM line item browser or for the BOM document line record highlighted in the line item browser.

Done Ends Bill of Materials Entry and returns you to the Finished Item field. Press Done again to exit the program .

- 11** To change or delete any finished items from production tickets, complete steps 12-14:
- 12** Highlight the line number you want to delete or change.
- 13** Delete the selected line or edit the line.
- 14** If you select to edit the line, the system accesses the Units field, so you change the quantity to produce. Save your changes.
- 15** To add finished items to production tickets, complete steps 16-21:
- 16** Enter the planned production date. Press Enter (CR) to default to the system date.
- 17** Enter the component item number to be used to produce the bill of material finished item. The entry must be a valid number. Valid entries display the item description and stocking unit of measure.
- 18** Enter the number of units needed to produce one finished item.
- 19** Enter the quantity planned to produce.
- 20** Enter the memo for the component item to appear on the production tickets (up to 20 characters).
- 21** Save your changes

Confirming BOM production tickets

- 1 Access this program by choosing Manufacturing Control-->Bill of Materials-->Production Confirmation.
- 2 In the Ticket field enter the number of the production ticket to be confirmed. If the ticket has not been printed, you can enter N or YES to confirm it anyway. If you enter N the program returns to this field so you can enter another ticket number.

Press F2 to search tickets or finished items. A listing of tickets is displayed including the status (E-entered, P-printed, and C-confirmed), warehouse, entry date, scheduled production date and planned production quantity for each ticket.

- 3 In the Units field enter the number of units that were actually produced. Press Enter (CR) to default to the number of units entered originally to be produced.
- 4 In the Date field, enter the actual date of production. Press Enter (CR) to default to the scheduled production date entered through the Production Entry program.
- 5 In the Serial/Lot # Entry screen, enter the serial/lot number of the finished item. Enter the quantity (if a serial number, 1 is entered automatically). The undistributed amount displayed must equal zero in order to produce all units. During the process of displaying component items, the system displays to the Serial/Lot # Entry screen if an item is a serial/lot item; if components are not serial/lot items, the system skips this field. In the Serial/Lot # Entry field, enter the serial/lot number of the component item(s) used to produce the finished item. The entry must be a valid serial/lot number. Enter the quantity (if a serial number, 1 is entered automatically). The undistributed amount displayed must equal zero in order to produce all units. Press F3 to end serial/lot entry.
- 6 In the Date field enter the date of actual production (i.e., when the finished item was produced).
- 7 This concludes the header portion of the Production Confirmation program. The program automatically displays the required component line-items. The units required of the component items are calculated based on the number of produced units entered in the header.
- 8 End entries. If the undistributed is not equal to 0, the amount left undistributed is set to 0 and reduces the components units for production by the undistributed amount.
- 9 You can select from the following to perform the listed functions:

Change a line-tem

Add line-items

Insert line-items

Delete line-items

Stop line-item entry

I- Accesses Note Entry (SME710) for the item highlighted in BOM line item browser.

D- Accesses Note Entry (SME710) for the BOM document line record highlighted in the line item browser.

Done- Ends Production Confirmation.

Stop- Stops confirmation. Confirmation may be stopped prior to completion. Changes to the production ticket will remain changed, except for the units produced and the serial/lot numbers. These will be reset when the ticket is entered again for confirmation.

Running the Production Register

- 1 Access this program by choosing Manufacturing Control-->Bill of Materials-->Production Register.
- 2 In the Beginning Ticket field enter the beginning ticket to print (1-999999).
- 3 In the Ending Ticket field enter the ending ticket to print (1-999999).
- 4 In the Beginning Date field enter the beginning production date to print.
- 5 In the Ending Date field enter the ending production date to print.
- 6 In the Warehouse field enter the warehouse to print. The entry must be a valid warehouse. Press Enter (CR) to default to the warehouse assigned to the terminal.
- 7 In the Date field, enter the Production Register date. The date must be in the current manufacturing period. The current period for manufacturing control (MC) general ledger (GL) and inventory control (IC) is displayed in the upper right corner of the screen.
- 8 For users printing the GL distribution, the following field is displayed:

If you are printing the GL distribution, the system displays the following message:
Receipt Register. OK to Print GL Distribution?

The general ledger distribution is built during the printing of the Production Register according to the entries made in the Production Confirmation program and the information entered in the general ledger posting tables and the MC to GL posting control record.

After printing the Receipt Register, verify the printout. If you need to correct the register data, select Cancel or enter N to exit the program. After you make the correction, you can rerun the Receipt Register. If everything is correct, select OK or enter YES to continue. The program then prints the GL distribution.

Once the GL distribution is printed, the program displays the message: Check GL Distribution. OK to Update?

After printing the distribution, verify the printout. If everything is correct, select OK or enter YES to continue. The program proceeds with the update. If you need to make a correction, select Cancel or enter N to exit the program. After you correct the information the correction is made, re-run the entire register process—meaning run the register first,

then print the GL distribution, followed by the optional update.

OR

If you are not printing the GL distribution, the program displays the message: Receipt Register. OK to Update?

- 9 After printing the Receipt Register, verify the printout. If you need to make a correction, select Cancel or enter N to exit the program. After you make corrections, rerun the register. If everything is correct, select OK or enter YES to continue.

Formulation Transaction Procedures

Entering formulas

- 1 Access this program by choosing Manufacturing Control-->Formulation-->Formula Entry.
- 2 In the Formula field, enter the formula (up to 6 characters). Press F2 to search existing formulas (formulas previously entered through this program).
- 3 In the Desc field, enter the formula's name or description (up to 30 characters).
- 4 In the Overhead field, enter the overhead cost per unit of producing this formula as an amount or a percentage. If entered as a percentage, enter the number and a % before pressing Enter (CR).
- 5 In the Labor field, enter the labor cost per unit of producing this formula as an amount or a percentage. If entered as a percentage, enter the number and a % before pressing Enter (CR).
- 6 In the Standard Production Quantity field, enter the standard quantity of this formula that is normally produced (0-99999999). For example, enter the quantity of a standard batch.
- 7 In the UM (Unit Of Measure), enter the unit of measure of the standard quantity (up to 2 characters). For example, if 100 pounds are normally produced, enter LB.
- 8 In the Waste % field, enter the total maximum percentage of waste when this formula is produced for the standard production quantity (0-99.9). This waste % is used in the Production Entry and Confirmation programs to ensure that the units of formula produced do not differ from the units required by more than this percentage.
- 9 This concludes the header portion of the Formula Entry program. At this time, the header record is created. After the header record is created, all the header fields except #1 are accessible through the change header routine. Field #1 can only be changed by deleting and reentering the formula number.
Line numbers are assigned automatically beginning with 001 and incrementing by one for each additional line-item up to 999. In the rare case where 999 line-items have been entered, the program refuses further entries.
- 10 In the Item Number field, enter the ingredient item number to be used to produce the formula. The entry must be a valid number. Valid entries display the item description and

stocking unit of measure. The user may create a memo line by entering M as the item number. The program assumes a memo line is to be entered and advances to the description field. Press F1 to allow the currently displayed value to remain the same. Press F4 to remove the line and backs up to the previous line number.

- 11 In the Units fields, enter the number of units needed to produce the standard production quantity (field #5) (1-99999999).
- 12 In the Memo field, enter the memo to appear on the Formula listing (up to 20 characters).
- 13 This concludes the line-item portion of the Formula Entry. Save your changes
- 14 This concludes the line-item portion of the Formula Entry.
You can select from the following to perform the listed functions:

Change a line-item

Add line-items

Insert line-items

Delete line-items

Stops line-item entry

I- Accesses Note Entry (SME710) for the item highlighted in BOM line item browser.

D- Accesses Note Entry (SME710) for the BOM document line record highlighted in the line item browser.

Done End the Formula Entry

Creating a finished item

- 1 Access this program by choosing Manufacturing Control-->Formulation--> Finished Item Entry.
- 2 In the Finished Item field, enter the finished item number. The entry must be a valid finished item number and displays the description(s) and stocking unit of measure. Press F2 to search through finished item already set up through this program. Press F3 to search for items.
- 3 In the Overhead field, enter the overhead cost of producing this finished item as an amount or a percentage. To enter as a percentage, enter the number and a % before pressing Enter (CR).
- 4 In the Labor field, enter the labor cost of producing this finished item as an amount or a percentage. To enter as a percentage, enter the number and a % before pressing Enter (CR).
- 5 In the Formula # field, enter the formula number used to make up this finished item (i.e., formula contains the ingredients). Press F2 to search existing formula numbers.

- 6 In the Quantity field, enter the quantity of the formula needed to produce one finished item, i.e., enter the quantity or amount of the formula (lbs., ounces, boxes, etc.) needed to produce one finished item. Press Enter (CR) to default to the standard quantity produced of the formula.
- 7 This concludes the header portion of the Finished Item Entry program. At this time, the header record is created. After the header record is created, all the header fields except #1 are accessible through the change header routine. Field #1 can only be changed by deleting and reentering the finished item number. Line numbers are assigned automatically beginning with 001 and incrementing by one for each additional line-item up to 999. In the rare case where 999 line-items have been entered, the program advances to the prompt-selection field and refuses further entries.
- 8 In the Item Number field, enter the packaging item number to be used to produce the finished item. The entry must be a valid number. Valid entries display the item description and stocking unit of measure. The program assumes a memo line is to be entered and advances to the description field.
- 9 In the Units field, enter the number of units needed to produce one finished item (1-99999999).
- 10 In the Memo field, enter the memo to appear on the production ticket (up to 20 characters).
- 11 This concludes the line-item portion of the Finished Item Entry. The prompt-selection field allows the user to perform the following functions:
 - Save your changes
 - Change a line-item
 - Add line-items
 - Insert line-items
 - Delete line-items
 - Stops line-item entry
 - I- Accesses Note Entry (SME710) for the item highlighted in BOM line item browser.
 - D- Accesses Note Entry (SME710) for the BOM document line record highlighted in the line item browser.
 - Done End the Finished Item Entry

Entering and displaying formulas and finished items planned for production

- 1 Access this program by choosing Manufacturing Control-->Formulation--> Production Planning.
- 2 In the Order field, enter D or F to indicate whether to display planned production in D-date or F-formula order. Press Enter (CR) to default to D.
- 3 If you selected to display planned production in date order, enter the beginning date to display In the Beginning Date field. Press (Enter) CR to default to the system date.

-OR-

If you selected to display planned production in formula order, enter the beginning formula number to display in the Beginning Formula field. Press (Enter) CR to default to FIRST. If you entered D in field #1, this field is skipped.

- 4 The program displays planned production in either date order (beginning with date entered) or formula order (beginning with formula entered) in the browser in the lower portion of the screen. You can select from the following:

Change a line-item

Add line-items

Insert line-items

Delete line-items

Stops line-item entry

- 5 If you select to edit, add or insert a line, complete the following:

Enter the planned production date in the Date field. Press Enter (CR) to default to the system date.

Enter the warehouse in the WH field. The entry must be a valid warehouse. Press Enter (CR) to default to the warehouse assigned to the terminal.

Enter the formula number in the Formula field. The entry must be a valid formula. If the formula is already entered for the same date on a previous line, the user must edit the current entry to change or delete

Enter the quantity planned to produce in the Units field. Press Enter (CR) to default to the standard production quantity entered for the formula in the Formula Entry program.

Save your changes when you are done..

- 6 You can select from the following options:

Stop line-item entry

D- Accesses Note Entry (SME710) for the Formula Entry document line record highlighted in the line item browser.

Requirements - Accesses Production Planning Requirements (MCE231), which is used to review ingredients and required, on hand, on order, and committed quantities in the for the formula number in the specified warehouse.

- 7 Press Done to exit the program.

Entering production tickets for formulas

- 1 Access this program by choosing Manufacturing Control-->Formulation--> Production Entry.
- 2 In the Doc/Formula Number field, enter the number of ticket (1-999999) or the formula number. Press Enter (CR) assigns the next number on file.
- 3 In the Whse field, enter the warehouse to produce the formula (i.e., all ingredients will come from this warehouse). Press Enter (CR) to default to the warehouse assigned to the terminal.
- 4 In the Entered field, enter the date of the production entry. Press Enter (CR) to default to the system date.
- 5 In the Production field, enter the planned production date, i.e., date production is scheduled to take place. Press Enter (CR) to default to the system date.
- 6 In the Formula: To Produce field, enter the quantity of the formula to produce. Press Enter (CR) to default to the standard production quantity as set in the Formula Entry program. Press F2 to display production planning by date for the formula being entered. If at any time during the Production Entry program this number is modified through the change header routine, the following question is asked: *Recalc (recalculate) I-ingredients, F-finished items, B-both or N-neither*. When you enter a response, quantities are recalculated as needed.
- 7 This concludes the header portion of the production entry program. At this time, a ticket number is automatically assigned and displayed. Upon completion of the header, if planned production was selected, the program automatically displays the required finished items for the formula. The units required of the ingredient items are calculated based on the number of finished units entered in the header. If planned production was not selected, you must enter the finished item information.
- 8 when the system asks Display Ingredients?, enter N or Y to indicate whether to display ingredients for the formula. Information displayed includes for each ingredient, the item number and description, units needed, stocking unit of measure and memo. Press Enter (CR) to default to N and proceed to the Item Number field.
- 9 You can perform a number of functions:
 - Change a line-item
 - Add line-items
 - Insert line-items
 - Delete line-items
 - Stops line-item entry
 - I- Accesses Note Entry (SME710) for the item highlighted in BOM line item browser.

D- Accesses Note Entry (SME710) for the BOM document line record highlighted in the line item browser. 11. To add a line item, enter A and complete the following:

- 10 To add a line item, enter A and complete the following:
- 11 In the Item Number field, enter the finished item number. The entry must be a valid number. Valid entries display the item description and stocking unit of measure. You can create a memo line by entering M as the item number. The program assumes a memo line is to be entered and advances to the description field.
- 12 In the Units field, enter the number of units needed of this finished item for the formula being produced.
- 13 In the Memo field, enter the memo to appear on the Production Register (up to 20 characters).
- 14 The system displays the question: *Recalc quantities for packaging items?*, if the finished items were changed or modified for the formula, enter Y or N to indicate whether to recalculate quantities for the packaging items of the finished item just entered. If the finished items were not changed or modified for the formula, this field is skipped.
- 15 When the system displays the question Display packaging lines for this item?, enter N or Y to indicate whether to display packaging items of the finished item. Press Enter (CR) to default to N and return to the Item Number field.
- 16 You can select from the following:
- 17 Stop line-item entry

D- Accesses Note Entry (SME710) for the Formula Entry document line record highlighted in the line item browser.

Ingredients Displays ingredients for the formula. Information displayed includes for each ingredient, the item number and description, units needed, stocking unit of measure and memo.

Packaging Displays packing items for the formula. Information displayed includes for each packing item, the item number and description, units needed, stocking unit of measure and memo.

Done Exits the Production Planning Entry

Confirming formulation production tickets

- 1 Access this program by choosing Manufacturing Control-->Formulation-->Production Confirmation.
- 2 In the Ticket field enter the number of the production ticket to be confirmed. If the ticket has not been printed, you can enter N or YES to confirm it anyway. If you enter N the program returns to this field so you can enter another ticket number.

Press F2 to search tickets or finished items. A listing of tickets is displayed including the

status (E-entered, P-printed, and C-confirmed), warehouse, entry date, scheduled production date and planned production quantity for each ticket.

- 3 In the Entered field the system displays the date the formulation production ticket was entered in Production Entry (MCE240). You can modify this date.
- 4 In the Planned field the system displays the planned production date, i.e., date production is scheduled to take place that was entered in Production Entry (MCE240) displays in this field. You can modify this date.
- 5 In the Formula to Produce field enter the number of units that were actually produced. Press Enter (CR) to default to the number of units entered originally to be produced.
- 6 In the Date field, enter the date of actual production (i.e., when the formula was produced). Press Enter (CR) to default to the scheduled production date entered when the ticket was entered originally in the Production Entry program.
- 7 If an ingredient, finished or packaging item is a serial/lot number, FACTS displays the Serial/Lot # Entry (MC030) screen. Enter the serial/lot number of the ingredient, finished or packaging item (where applicable). Refer to the Serial/Lot # Entry (MC030) topic for details.
- 8 This concludes the header portion of the Production Confirmation program. The program automatically displays the required component line-items. The units required of the component items are calculated based on the number of produced units entered in the header.
- 9 You can select from the following to perform the listed functions:

Change a line-item. Line-items may be changed or deleted by entering the line number to be changed. During this change routine, F1 allows the currently displayed value to remain the same. After changing a finished item, the prompts asks Display packaging lines for this item? Enter N or Y to indicate whether to display packaging items used to produce the finished item.

Add line-items

Insert line-items

Delete line-items

Stops line-item entry

I- Accesses Note Entry (SME710) for the item highlighted in BOM line item browser.

D- Accesses Note Entry (SME710) for the BOM document line record highlighted in the line item browser.

Stop - Stops confirmation. Confirmation may be stopped prior to completion. Changes to the production ticket will remain changed, except for the units produced and the serial/lot numbers. These will be reset when the ticket is entered again for confirmation.

Ingredients - Accesses Production Entry-Ingredients (MCE241.1), where you can add item ingredients to the formula production ticket.

Packaging - Accesses Production Entry-Packaging (MCE241.P), where you can add item ingredients to the formula production ticket.

Running the Production Register

- 1 Access this program by choosing Manufacturing Control-->Formulation-->Production Register.
- 2 In the Beginning Ticket field enter the beginning ticket to print (1-999999).
- 3 In the Ending Ticket field enter the ending ticket to print (1-999999).
- 4 In the Beginning Date field enter the beginning production date to print.
- 5 In the Ending Date field enter the ending production date to print.
- 6 In the Warehouse field enter the warehouse to print. The entry must be a valid warehouse. Press Enter (CR) to default to the warehouse assigned to the terminal.
- 7 In the Date field, enter the Production Register date. The date must be in the current manufacturing period. The current period for manufacturing control (MC) general ledger (GL) and inventory control (IC) is displayed in the upper right corner of the screen.
- 8 For users printing the GL distribution, the following field is displayed:
- 9 If you are printing the GL distribution, the system displays the following message: Receipt Register. OK to Print GL Distribution?
- 10 The general ledger distribution is built during the printing of the Production Register according to the entries made in the Production Confirmation program and the information entered in the general ledger posting tables and the MC to GL posting control record.
- 11 After printing the Receipt Register, verify the printout. If you need to correct the register data, select Cancel or enter N to exit the program. After you make the correction, you can rerun the Receipt Register. If everything is correct, select OK or enter YES to continue. The program then prints the GL distribution.
- 12 Once the GL distribution is printed, the program displays the message: Check GL Distribution. OK to Update?
- 13 After printing the distribution, verify the printout. If everything is correct, select OK or enter YES to continue. The program proceeds with the update. If you need to make a correction, select Cancel or enter N to exit the program. After you correct the information the correction is made, re-run the entire register process—meaning run the register first, then print the GL distribution, followed by the optional update.

OR

If you are not printing the GL distribution, the program displays the message: Receipt Register. OK to Update?

After printing the Receipt Register, verify the printout. If you need to make a correction, select Cancel to exit the program. After you make corrections, rerun the register. If everything is correct, select OK to continue.

Inquiries Transaction Procedures

Displaying bill of material finished item information

- 1 Access this program by choosing Manufacturing Control-->Inquiries--> Bill of Materials Inquiry.
- 2 You can use the Go To or Starts With fields to enter the bill of material finished item number to be displayed.
- 3 In the center of the screen, select the information view to display in the lower portion of the screen. You can select from the following:

Components	Displays component information including the component item number, description, number of units, stocking unit of measure and memo.
Planned	Displays the planned production currently in the BOM system for the finished item. Planned production is displayed in date order. Select the Requirements button to display the Production Planning Requirements (MCE121) program.
Production	Displays the production tickets in process for the finished item in summary. Summary information includes ticket number, status (E-entered, P-printed and C-confirmed), entry date, planned production date, production date (if not confirmed, date is blank), units planned to be produced and actual units produced. Press the Line Detail button to access Production Detail for the Selected Ticket (MCI613).
Costing	Displays costing information by warehouse to produce one BOM finished item. Information for each component item includes item number and description, units needed to produce the BOM finished item, stocking unit of measure, cost, costing unit of measure and extension. Total information includes components, overhead, package, labor, and total costs. Press the Next Whse button to view costing information for the next available warehouse.
History	Displays the history of the item. Enter the beginning warehouse. Information by warehouse includes month-to-date, year-to-date and prior year units produced and the last date produced.
Requirements	Displays the requirements for producing a number of units as entered by the user. Press the # of Units button to enter the number of units to be produced. The requirements to produce the finished item are displayed including the following for each component: the item number and a part of the description, units required, stocking unit of measure, on hand, on order and committed quantities. An asterisk (*) next to the units indicates that the number of units required is greater than available (available = on hand + on order - committed).
General	Displays additional information about the finished item, including the overhead percentage, packaging and labor costs, the update in Sales Order Entry setting for component item selection, standard packing quantity and stocking unit of measure.

- 4 When you are finished reviewing BOM Item information press Done to exit the program.

Displaying formula information

- 1 Access this program by choosing Manufacturing Control-->Inquiries--> Formulation Inquiry.
- 2 You can use the Go To or Starts With fields to enter the formula item number to be displayed.
- 3 In the center of the screen, select the information view to display in the lower portion of the screen. You can select from the following:

Ingredients	Displays ingredient information including the item number, description, number of units, unit of measure and memo.
Finished Items	Displays the finished items in summary. Summary information includes the item number and description, stocking unit of measure and the amount of formula required for the finished item. Press the Packaging button to display the Packaging Items for the Selected Formula (MCI622) program for packaging information for the finished item.
Planned	Displays the planned production currently in the formulation system for the formula. Planned production is displayed in date order. You can to display requirements for ingredients or finished items for the highlighted formula. Press the Ingredients button to display the Production Planning Ingredients (MCI623) program for the highlighted formula. Press the Finished button to display the Production Planning Finished Items (MCI623) program for the highlighted formula.
Production-	Displays summary information of the production tickets in process for the formula. Summary information includes for each ticket, ticket number, status (E-entered, P-printed and C-confirmed), entry date, planned production date, production date (if not confirmed, date is blank), units planned to be produced and actual units produced. Press the Line Detail button to display Production Detail for the Selected Ticket (MCI624), where ticket detail is displayed in the same screen format as it was entered.
Cost	Displays costing information by warehouse to produce one formula. Information for each ingredient item includes item number and description, units needed to produce one formula, stocking unit of measure, cost, costing unit of measure and extension. The cost per unit is listed along with the total information, which includes the ingredient, overhead, labor and total cost. Press the Next Whse button to view costing information for the next available warehouse.
History.	Displays the history of the item. Information by warehouse includes month-to-date, year-to-date and prior year units produced and the last date produced

Requirements	Displays the requirements for producing a number of units as entered by the user. Press the # of Units button to enter the number of units to be produced The requirements to produce the finished item are displayed including the following for each component: the item number and a part of the description, units required, stocking unit of measure, on hand, on order and committed quantities. An asterisk (*) displayed next to the units indicates that the number of units required is greater than available (available = on hand + on order - committed).
General	Displays additional information about the formula item, including the overhead percentage, packaging and labor costs, standard production quantity, stocking unit of measure and production waste percentage.

- 4 When you are finished reviewing formula Item information press Exit to exit the program.

End of Period Transaction Procedures

End-Of-Period Checklist - Manufacturing Control

Period ____ Year ____

User	Date	Menu		Description
_____	_____	BOM	1.	Complete all BOM production
_____	_____	Formula	2.	Complete all formulation production
_____	_____	EOP	3.	Print/update BOM Period Production Report
_____	_____	EOP	4.	Print/update Formulation Period Production Report
_____	_____	EOP	5.	Run End-of-Period Update
_____	_____	EOP	6.	Print/update Serial/Lot number Removal Register
_____	_____	EOP	7.	Run Item Ledgercard Removal
_____	_____	EOP	8.	Run End-of-Period Update
_____	_____	EOP	9.	Print Flagged Item Report
_____	_____	F/M	10.	Adjust flagged items
_____	_____	EOP	11.	Run Item Restocking Amounts Reset

End-Of-Period Checklist Explanation

- 1-2.** Complete all production. For bill of materials and formulation, all production should be completed to ensure the inventory quantities and production figures are accurate when the period procedures begin. All completed production tickets should be confirmed and the Production Registers should be printed and updated.
- 3-4.** Print BOM and Formulation Period Production Reports. These reports allow the user to obtain a report of production completed for the current period. After the report prints, the user should remove the records just printed to clear the file. Records not removed accumulate in the file indefinitely. All Period Production Reports should be kept as an audit trail.
- 5.** Run End-of-Period Update. This is the last step to closing the manufacturing control current period and should only be run after all of the above procedures are complete. The program sets period-to-date production history to zero and closes the current period. If it is the last period of the year, year-to-date figures in these files are rolled into prior year. When this program is complete, the user may begin daily procedures in manufacturing in the new (current) period.