

# *MPRO 2000*

*...ISO Professional Maintenance Management System*



## USER'S GUIDE



# CONTENTS

## INTRODUCTION

INTRODUCTION .....	5
ABOUT THIS MANUAL.....	5
HARDWARE REQUIREMENTS.....	5
INSTALLATION.....	5
STARTING PROGRAM.....	6
SECURITY.....	6
PROGRAM STRUCTURE.....	7
DATA BACKUP AND RESTORE.....	7
TECHNICAL SERVICE.....	8

## MPRO 2000

MPRO 2000 .....	9
MAINTENANCE .....	9
EQUIPMENT.....	10
EQUIPMENT DETAILS.....	11
MAINTENANCE DETAILS.....	11
OPENING WORK ORDERS.....	12
CLOSING A WORK ORDER.....	12
PREVENTIVE MAINTENANCE DUE.....	13
WORK ORDER STATUS.....	13
OPEN WORK ORDERS.....	14
SUPPORT.....	14
INVENTORY.....	14
ITEM MASTER FILE.....	15
INVENTORY.....	15
PURCHASING.....	16
SUPPORT DATA.....	16
PURCHASE ORDERS.....	16
REQUESTED PURCHASE ORDERS.....	17
RECEIVE MATERIALS.....	18
OPEN PURCHASE ORDERS.....	18
MAINTENANCE REPORTS.....	19
REQUESTING MAINTENANCE.....	20
AFTER THE TOUR.....	21



# **MPRO 2000**

The MPRO 2000 ISO Professional Maintenance Management System is a full feature program that is designed to provide small and large manufacturers with the ability to thoroughly define and monitor the maintenance function, provide preventive maintenance and efficiently manage the plant maintenance function. The system also provides valuable management information to analyze and evaluate the effectiveness of the various functions, including the tracking and reporting of labor, material and subcontracting costs. A full featured inventory and purchasing system is included with the maintenance program.

The MPRO 2000 ISO9000 Professional Maintenance Management System is designed for any version of Windows, including Windows 95, Windows 98, Windows 2000 and Windows NT. The program is network ready and is year 2000 compliant.

A unique feature of the program allows use of the full features of the program for demonstration purposes (quantity of new data entry is limited, but sufficient for the user to fully evaluate the capabilities of the program). Company data entered during the demonstration period is not lost when the system is fully activated. Activation simply involves the entry of a code by the user to indicate the purchase of selected modules.

The system is provided with sample data to illustrate the functions of the various features. It is strongly suggested that the user access each module and fully understand the function of each window and control to become thoroughly familiar with all the features before beginning the entry of active company records.

## **ABOUT THIS MANUAL**

The MPRO2000 manual is provided to introduce the user to the extensive capabilities and features of the MPRO2000 modules. The manual is purposely brief and simple to follow so that the user will quickly be able to access and use the program. A detailed on line manual is provided through the Help selections at each menu by pressing the "Help" button on each window of the program.

## **HARDWARE REQUIREMENTS**

MPRO 2000 can be installed on IBM 386, 486, or Pentium true compatibles with at least 640K of RAM memory. For best performance a 486 or Pentium computer running at a minimum of 33 MHz should be used. MPRO 2000 needs most of the 640K of RAM so other memory resident (TSR's) software should be held to a minimum. The complete program requires up to 12 megabytes of hard disk space. More disk space will be required as data is added. The program is fully network ready and will run on, Windows 95, Windows 98, Windows 2000 or Windows NT.

## **INSTALLATION**

MPRO 2000 is supplied on a CD with all the programs and the User's Guide. The disk will self start when inserted in the drive (or select the CD drive and then Install.exe from explorer). Select the Equipment/Plant/Facility Maintenance button, then the Install MPRO 2000 Maintenance System button.

The installation program will create new directories automatically in the drive and directory name the user specifies when prompted. The default directory is C:\M2000.

To install on a network server map the M2000 folder to a DOS drive (such as J:/M2000. Then create short-cuts on each workstation with the target J:/M2000/m2000.exe.

## STARTING PROGRAM

During the installation process a program group named MPRO 2000 as created. To start MPRO 2000 double click on the MPRO 2000 icon, or select from the program list. The program may also be started by double clicking on C:\M2000\M2000.EXE (or the directory name specified by the user in the installation process) in either windows File Manager or Explorer. The MPRO 2000 title and main menu will be displayed.



## SECURITY

A security system is incorporated in MPRO 2000 to provide limited access of the individual programs and data so that only duly authorized personnel can view or change data. Each employee of the company is identified by name and each is issued a unique password. In addition, the modules that the employee is permitted access are designated. Five levels of security are provided to limit the activity of the employee in that module.

- Level 1- System Administrator
  - Enters security passwords
- Level 2- Personnel
  - Access to employee records and labor rates
- Level 3- Manager
  - Access to all other records, data and management reports
- Level 4- Operator
  - Access to all other records and data.
- Level 5- Review
  - Can only view summary records, cannot change data.

Only employees with security Level 1 have access to the security portion of the system. To access the security setting, select "SUPPORT" from the main menu of MPRO 2000. Then select "EMPLOYEES".

The employee designated as the system administrator (by setting the security level for that employee to 1) should enter the security level and password for each employee. **Note that only the employee(s) with Level 1 security will have access to this screen. Be sure the at least one employee has the Level 1 designation before deleting the "DEMO" employee from the employee list.** The MPRO 2000 system is shipped with an employee named "DEMO" with the password "DEMO" and security level 1 so there is initial access to the security screen.

## PROGRAM STRUCTURE

### HELP SCREENS

Each of the functions are supported by extensive on line help that is accessible at every window. Help may be accessed from either the help contents selection from the window menus or by selecting the "Help" button on each window.

### SAMPLE DATA

MPRO 2000 is supplied with sample data simulating a manufacturing business. The data is automatically provided during the installation process. It is strongly recommended that this data be left on the system until the user becomes thoroughly familiar with all the features of the program. While becoming familiar with the program this sample data may be modified, or additional data may be entered. For each new window it is suggested the user read the help associated with the window. Follow the instructions for adding, modifying or deleting data and records.

After becoming familiar with the features of MPRO 2000 the sample data may be removed individually from the appropriate windows using the delete method provided for at that window.

### STRUCTURE

MPRO 2000 is designed to be extremely simple to use and to provide the maximum amount of information using very few windows. For example the "Maintenance" and then the "Equipment" selection of the menu will immediately provide the user with detailed data about the equipment that is selected as well as the maintenance history about the selected equipment- without changing windows! Buttons are provided so that complete detailed data about either the equipment itself or the maintenance records can be easily retrieved.

All programs are constructed using several basic window types: Menus, Scrolling Tables, Data Entry windows, and Reports

Menus: Selection of area of interest.

Scrolling Tables: A list of available records.

Data Entry window: Individual detail data about a selected record.

Reports: Print out of information.

To rapidly access data, locate fields are included in the tables which are expected to contain a large amount of data. When the desired data is typed in and the tab key selected to accept the field, the table cursor goes immediately to the selection. Also, when the table records are in focus (the mouse cursor is pointed to a record), typing a single character will access the nearest record meeting that parameter. As additional characters are added the desired record is located.

#### Tables:

[PgDn] scrolls the table to the next page of data.

[PgUp] scrolls the data to the previous page of data.

[Ctrl-PgDn] scrolls the table to the last page of data.

[Ctrl-PgUp] scrolls the table to the first page of data.

#### Forms:

[Tab] accepts the data entry for the highlighted field and advances the highlighted cursor to the next field. When the last field is accepted all the data is saved for the record and control returns to the table window.

Select the "OK" button to accept all the data from any window.

Within a highlighted field move the cursor to the desired location using the mouse or the left and right arrow keys. Characters may be deleted with the [Delete] or [Backspace] keys.

## BACKING UP AND RESTORING DATA FILES

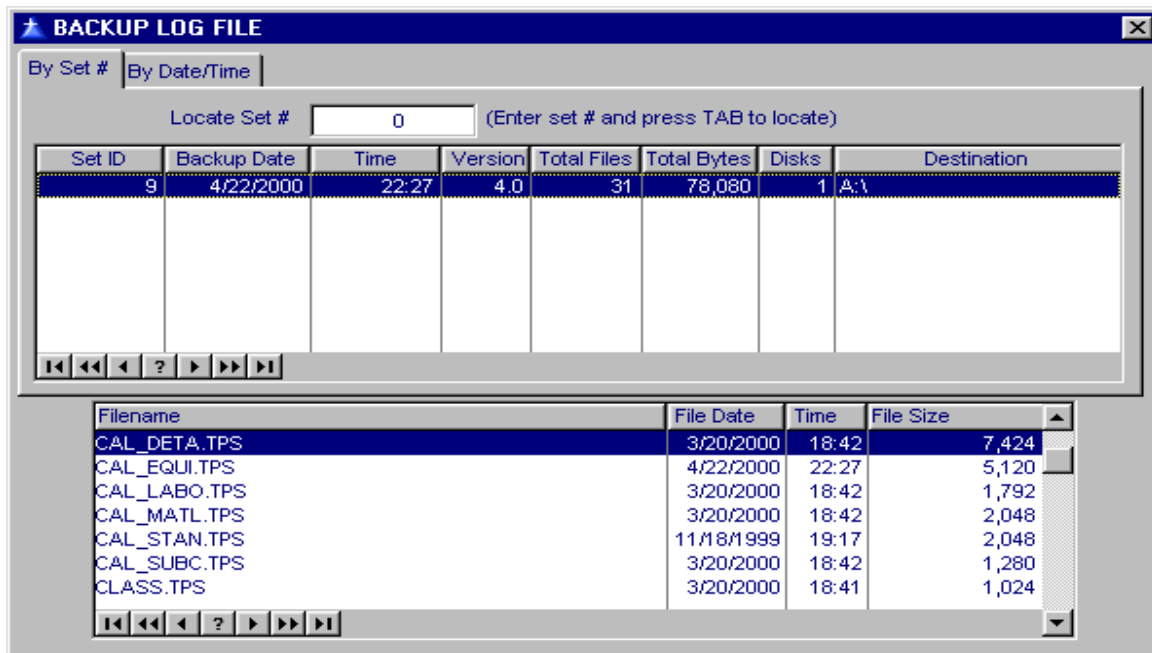
The Backup and Restore feature is intended to be used to back up all the data files (\*.tps) residing in the base directory for the program. The Backup and Restore feature can be run from within the main program or can be run from the BACKER.EXE file in the base directory.

The data is stored in a compressed form, on disks or in the hard drive, to conserve space. Every time a backup is carried out a unique Set Number is allocated and stored on each floppy in the disk set. During Restore the user can click on the Log File button to see the Set Number, Disk Number, Date of Back Up etc. If you insert a disk from the wrong set or out of sequence you will be warned accordingly.

Starting the Backup and Restore feature: from the main menu select File, then BACKUP and RESTORE. To Backup all the data files (\*.tps) simply select the BACKUP icon and follow the instructions. Alternately, double click on the BACKER.EXE file in the program base directory. To Restore all the data files select RESTORE and follow the instructions. After Backup or Restore the user will automatically exit from the program (since all program data files must be closed during the Backup process).



The backup files and the files that were backed up are displayed by selecting the Log File button:



## TECHNICAL SUPPORT

Unlimited technical support for MPRO2000 is provided for one year from the date of purchase. Before contacting technical support make use of the Help functions that are available at each MPRO window. Contact BDR Systems customer service at 610-873-8570 or e-mail at address [plant@bdrsystems.com](mailto:plant@bdrsystems.com) (be certain to type the address exactly as shown, do not use capital letters).

The MPRO 2000 program is comprised of seven major sections: Support, Maintenance, Request, Inventory, Purchasing, System and Reports. The integrated system is designed to track every equipment and other assets that require emergency or unscheduled maintenance as well a regular preventive maintenance. The documentation of preventive and unscheduled maintenance data is specifically designed to provide record retention and traceability to assist in achieving the requirements of ISO9000. The system also provides valuable management information to analyze and evaluate the effectiveness of the maintenance program, the cost of equipment maintenance and repair, and the status of all assets of any period. A full featured inventory and purchasing system is included in the program.

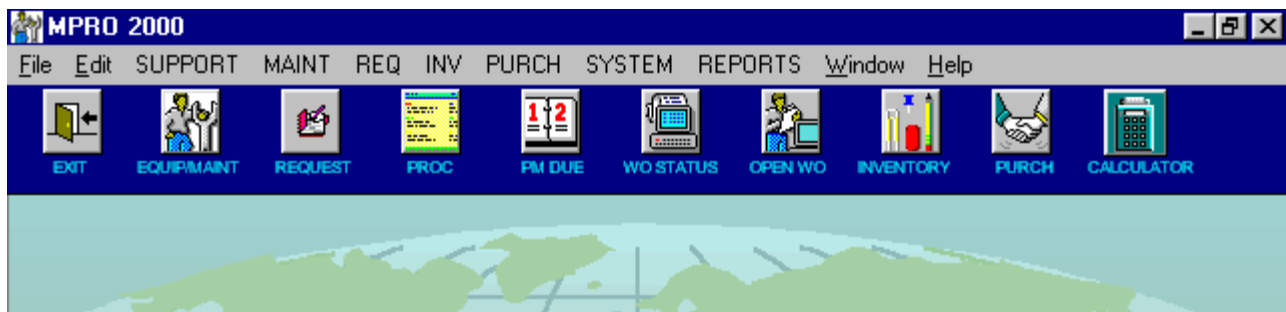
Major features include:

- Equipment/Asset Inventory
  - Detailed equipment data
  - Unlimited nameplate data
  - Downtime monitored
- Preventive Maintenance Procedures on line
- Maintenance Request System
- Work Order system
- Monitors PM and Unscheduled Maintenance
  - Maintenance Due notification
  - Labor Costs tracked
  - Material Costs tracked
  - Subcontracting costs tracked
- Inventory System
- Purchase Order System
  - Automatic Purchase Order generation
  - Receiving System
- Backup and Restore All Data Files
- Maintenance Alert screen when program is started

The system is provided with sample data to illustrate the functions of the various windows. It is strongly suggested that the user access and fully understand the function of each window and control to become thoroughly familiar with all the features before beginning the entry of active company records. To become familiar with the features and structure of the program the following tour of the program is recommended.

**MAINTENANCE**

Select the MAINT menu selection in the MPRO 2000 main menu.



The functions of the program may be accessed either with the menu selection tool bar at the top or by using the icon selection tool bar. Selecting item from the menu selection tool bar will result in a drop down sub menu from which individual features may be selected. The icon tool bar provides rapid access to the most frequently used functions of the program.

The Maintenance program is designed to be extremely simple to use and to provide the maximum amount of information using very few windows. Every maintenance action, whether preventive maintenance or unscheduled maintenance, begins with using the "MAINT" selection from the main menu. A sub menu provides selection of

Equipment, Procedures, PM Due, Work Order Status or Open Work Orders.

The selections:

Equipment: Complete access to all equipment detail and maintenance history.

Procedures: Detailed PM procedures for selected equipment.

PM Due: A table listing of all equipment requiring PM during selected period.

Work Order Status: A table listing of all work orders with pertinent data.

Open Work Orders: Current open work orders.

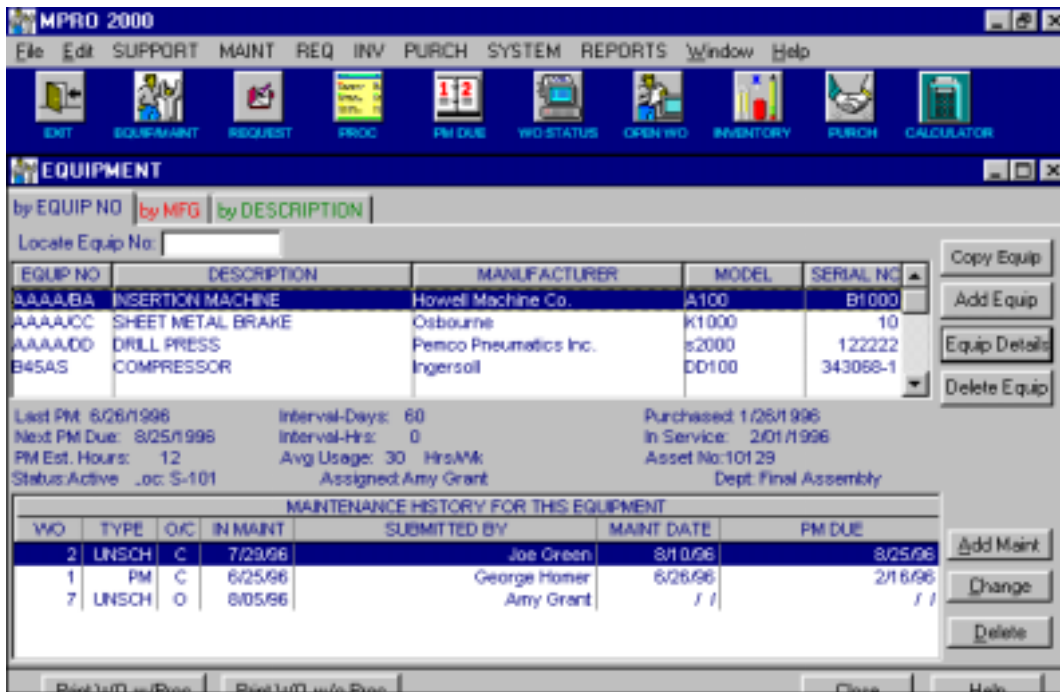
### EQUIPMENT

The equipment section contains all the assets that are included in the maintenance system. Each equipment or asset is assigned a unique equipment identification number whenever a new equipment record is added to the maintenance system. The equipment number is alphanumeric with up to 10 characters.

MPRO2000 is structured so that vital information regarding both equipment detail data and maintenance data is available on a single screen.

Without changing windows the user can select an equipment record and view pertinent detail information about the equipment and the maintenance history of that equipment. Additional detailed information is available by selecting the appropriate button next to the equipment or maintenance scrolling tables.

The "EQUIPMENT" selection of the menu will immediately provide the user with detailed data about the equipment that is selected as well as the maintenance history about the selected equipment- without changing windows! Buttons are provided so that complete detailed data about either the equipment itself or the maintenance records can be easily retrieved.



The window is divided into an upper and lower section. The upper section contains a scrolling table with a listing of all equipment that has been entered into the system. The lower section contains a scrolling table with all the maintenance records for the equipment that is highlighted in the upper screen. Between the upper and lower tables is additional equipment detailed data for the equipment that is highlighted. Use the up and down arrows, selected with the mouse, to scan through the equipment records. Note how the maintenance records and detailed equipment data change for each change in highlighted equipment.

The equipment data may be sorted and viewed by equipment number, vendor, or equipment description. Place the mouse cursor on the tab above the upper table and click the left mouse button to select the preferred sort.

### EQUIPMENT DETAILS

To the right of the equipment table are buttons to copy, add, view detail, or delete equipment records. Place the mouse cursor on the "Equip Details" button and click with the left mouse button.

Change EQUIPMENT

Equip No: AAAA/BA    INSERTION MACHINE    Mfg: Howell Machine Co.  
Last PM: 6/26/1996    Next PM Due: 6/25/1996    Model: A100    S/N: B1000

General    Financial    Preventive Maint    Nameplate    Comments    Spares    Downtime

ASSET NO: 10129    PURCHASED: 1/26/1996    IN SERVICE: 2/01/1996

PD NO: 332298

PURCHASED FROM: Acme Industries, Inc

REPLACEMENT COST: \$4,600.00

WARRANTY, YRS: 3    DEPRECIATION PERIOD: 10

WARRANTY EXPIRES: 1/25/1999    BOOK VALUE: \$5,803.01

EQUIPMENT COST

PURCH PRICE: \$4,500.50  
INS LAB: \$3,780.00  
INS MATL: \$256.78  
TOTAL COST: \$8,537.28

OK    Cancel    Help

ASSET NUMBER

Select the various Tabs to view the financial, and maintenance information about the equipment.

### MAINTENANCE DETAILS

To the right of the Maintenance History table are buttons to add, view maintenance records, or delete equipment maintenance records. Place the mouse cursor on the "Maint Details" button and click with the left mouse button.

MAINTENANCE DATA

Equip No: AAAA/BA    INSERTION MACHINE    Mfg: Howell Machine Co.  
Work Order: 2    Model: A100    S/N: B1000

GENERAL    MAINT MATERIALS    MAINT LABOR    SUBCONTRACTING    COMMENTS

MAINTENANCE TYPE:  UNSCH

IN MAINT: 7/29/1996    CHARGE COST CENTER: C1001

SUBMITTED BY: Joe Green    REASON: EMERGENCY FAILURE

PROCEDURE NO:    REV:   

ASSIGNED TO: Ron Red

WORK ORDER MAINTENANCE COST

TOTAL LABOR: \$0.00  
TOTAL MATERIALS: \$89.00  
TOTAL SUBCONTRACTING: \$1,250.00  
TOTAL WO COST: \$1,339.00

Unsch Maint Procedure    WORK ORDER COMPLETED: 8/10/1996

OK    Cancel    Help

Select the various Tabs to view the maintenance labor, materials and subcontracting information about the selected maintenance record.

To rapidly access data, locate fields are included in the tables which are expected to contain a large amount of data (see "Locate Equip No:" previous page). When the desired data is typed in and the tab key selected to accept the field, the table cursor goes immediately to the selection. Also, when the table records are in focus (the mouse cursor is pointed to a record), typing a single character will access the nearest record meeting that parameter. As additional characters are added the desired record is located.

### OPENING NEW WORK ORDERS

Opening a new work order in MPRO 2000 is very simple.

1. From the main menu select "MAINT".
2. Select "EQUIPMENT" from the sub menu.
3. Use the mouse to scroll through the Equipment table to highlight the equipment.
4. Use the mouse to select the "New Maint" button.
5. Reference information regarding the selected equipment is display at the top of the window. Also, the next sequential work order number is automatically assigned and is displayed.
6. When the above window is first opened the Maintenance Type will be displayed with the PM (Preventive Maintenance) block checked and the UNSCH (Unscheduled Maintenance) block will be hidden. If the maintenance action is emergency or unscheduled, place the mouse cursor on the PM block and click the left mouse button. This will deselect the PM block and will expose the UNSCH block. Accept the selection by pressing Tab.
7. The cursor will advance automatically to the next data entry field each time a field is accepted by pressing the Tab key. Alternately, use the mouse to advance to any specific data entry field.
8. Fields with down arrow buttons will display drop down data selection tables. Use the mouse to depress the down button. Point to the desired selection from the table using the mouse cursor and accept by clicking the left mouse button.
9. Do not enter a date in the "WORK ORDER COMPLETED" field until the work is actually completed. *This date entry will close the work order.*
10. Maintenance labor, materials and subcontracting data may be entered by selecting the labeled tabs using the mouse. Point to the requested tab and click the left mouse button.

### CLOSING A WORK ORDER

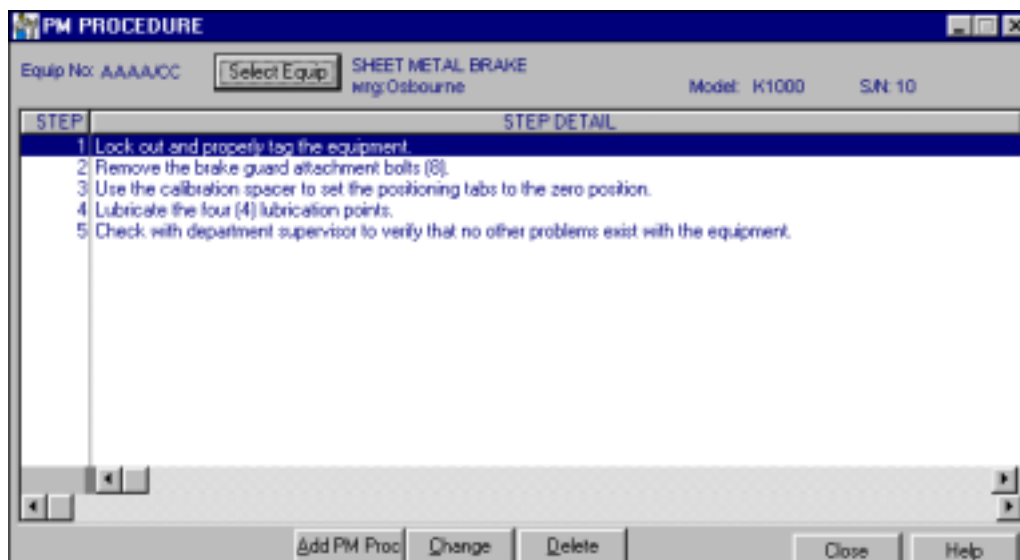
A work order is closed by entering a completion date for the maintenance activity. To close the work order select MAINT in the main menu of MPRO 2000, then EQUIPMENT. Select the "Change" button.

Point to the "WORK ORDER COMPLETED" field with the mouse and enter the date that the maintenance effort was completed. The status of the work order will be changed from "Open" to "Closed".

### PROCEDURES

Maintenance procedures may be written for either preventive maintenance functions or for specific unscheduled maintenance. The structure of the procedures is the same. The preventive maintenance procedures are written for a particular equipment and are specified whenever a preventive maintenance is performed. The unscheduled maintenance procedure is unique to a specific work order.

To access the preventive maintenance procedures select "MAINT" from the main menu and then select "PROCEDURES". The PM Procedure list will be displayed.



Press the "Select Equip" button to highlight and accept the desired equipment in the selection table. The preventive maintenance procedure for this equipment will be displayed.

To add new procedure steps point to the "Add PM Proc" button and click with the left mouse button. To change existing procedure steps or to delete a procedure step, use the mouse cursor to highlight the item to be modified. Then select either the "Change" or the "Delete" button and click the left mouse button. Change the selected step, or add a new step, and press OK to accept the change or verify the deletion of the step.

### PREVENTIVE MAINTENANCE DUE

The preventive maintenance due table displays all the equipment or assets which are due for preventive maintenance during the period specified by the user. The due date for preventive maintenance is calculated by adding the specified maintenance interval to the date of the last preventive maintenance completion. If this is a new asset the due date is calculated from the equipment in service date.

EQUIP NO	LAST MAINT	MAINT DUE	DESCRIPTION	MANUFACTURER	MODE
AAAA/BA	6/26/1996	8/25/1996	INSERTION MACHINE	Howell Machine Co.	A1
B45AS	7/25/1996	10/23/1996	COMPRESSOR	Ingersoll	DD11
AAAA/CC	6/11/1995	7/26/1995	SHEET METAL BRAKE	Osbourne	K10
AAAA/DD	6/05/1996	9/03/1996	DRILL PRESS	Pemco Pneumatics Inc.	s20

Enter the start date for preventive maintenance records to be displayed and press Tab to accept. The program will exclude all records for which the maintenance due date is before the start date. Enter the end date. The program will exclude all records for which the maintenance due date is after the end date entered.

To print a copy of the work order for a particular preventive maintenance record, highlight the record using the mouse. Then depress the "PRINT WO" button, using the left mouse button, to print the work order.

### WORK ORDER STATUS

The work order status is a listing of every work order that has been initiated. The pertinent information regarding the work order is provided. In addition to the date of initiation the current status of the work order is indicated as an "O" for a work order with no completion dates and a "C" for work orders that have a completion date.

WO	EQUIP NO	DESCRIPTION	MODEL	SERIAL	TYPE	IN MAINT	PM DUE
7	AAAA/BA	INSERTION MACHINE	A100	B1000	UNSCH	8/05/1996	/ /
6	AAAA/CC	SHEET METAL BRAKE	K1000	10	PM	7/22/1995	7/26/1995

*OPEN WORK ORDERS*

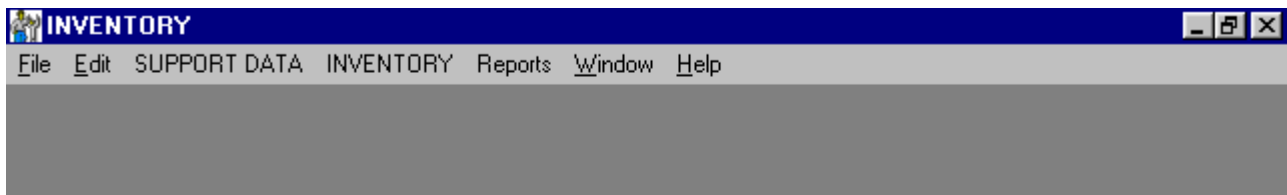
The open order listing displays every work order that has been initiated but not yet completed. The pertinent information regarding the work order is provided. In addition to the date of initiation the current preventive maintenance status of the work order is indicated.

**SUPPORT**

The support menu selection provides access to a series of files that contain data supporting the various maintenance activities. For first time program users these files are normally completed before proceeding with the entry of actual equipment or maintenance records. Most of the data is available at appropriate data entry fields in the form of drop down data selection tables in the equipment and maintenance sections of the program.

**INVENTORY**

The "Inventory" menu selection consists of the Item Master File, which contains detailed information regarding every maintenance part used, and the Inventory file, which indicates the current status of each part. This includes the vendor, last material transaction, and the current on hand balance. Whenever a part is issued for use in a maintenance work order the inventory level is adjusted accordingly. Whenever the on hand inventory falls below the minimum stocking level specified in the Item Master file the part is automatically added to the Purchase Order list for action by the user.



*SUPPORT DATA*

The support menu selection of the Inventory section provides access to a series of files that contain data supporting the various inventory windows. For first time program users these files are normally completed before proceeding with the entry of actual inventory records. Most of the data is available at appropriate data entry fields in the form of drop down data selection tables in the inventory and purchasing sections of the program.

## ITEM MASTER FILE

The item master file defines the characteristics of the individual parts. To access the item master file select "INVENTORY" from the main menu, then select "Item Master File".

STOCK NO	PART NO	DESCRIPTION	VENDOR	COST	UOM	STOCK LEVEL		ORD QTY
						MIN	MAX	
2049999-1A	Widget	Acme Industrial		\$45.35	Ea	50	100	50
3231888	Extra Widget	Acme Industries, Inc		\$4.50	Ea	25	50	25
47834-23A	Washer	Bendix Supplies		\$0.35	Ea	100	1,000	500
5456933-4ABW	Concave Washer	Acme Industries, Inc		\$0.16	Ea	50	1,000	500
65738999-BAP	Knurled Shaft	Acme Industries, Inc		\$15.75	Ea	5	15	5

To rapidly access data, locate fields are included in the tables which are expected to contain a large amount of data (see "Locate Stock No." above). When the desired data is typed in and the tab key selected to accept the field, the table cursor goes immediately to the selection. Also, when the table records are in focus (the mouse cursor is pointed to a record), typing a single character will access the nearest record meeting that parameter. As additional characters are added the desired record is located.

The item master file window is a scrolling table listing of all the parts that are used in the maintenance system. The data may be presented in the sorted order by Stock Number, Part Number, Description, or Vendor as indicated by the tabs. Point to the tab and press the left mouse button for the desired sort order.

The pertinent data about each part is shown in the table. The cost, unit of measure, min and max stocking levels are indicated. Use the right scroll button to expose the quantity of the part that is currently on order. Additional detail about each part is available by selecting the "Change" button.

To add new parts to the item master file select the "Add Item" button using the mouse. To change existing data concerning the part position the highlighted selector bar on the desired part and select the "Change" button. To delete the entire part record select the "Delete" button.

## INVENTORY

The inventory of parts on hand is accessed by selecting INVENTORY from the main menu, and then selecting "INVENTORY" from the sub menu.

STOCK NO	PART NO	DESCRIPTION	INV BAL	MEAS	Last Transaction			VENDOR
					DATE	ISSUED	REC'D	
2049999-1A	Widget		64	Ea	2002/999	0	0	Acme Industrial
3231888	Extra Widget		85	Ea	2005/999	0	0	Acme Industries
47834-23A	Washer		220	Ea	2005/999	0	0	Bendix Supplies
5456933-4ABW	Concave Washer		-7	Ea	709/999	10	0	Acme Industries
65738999-BAP	Knurled Shaft		23	Ea	709/999	5	0	Acme Industries

To rapidly access data, locate fields are included in the tables which are expected to contain a large amount of data (see "Locate Stock No:" above). When the desired data is typed in and the tab key selected to accept the field, the table cursor goes immediately to the selection. Also, when the table records are in focus (the mouse cursor is pointed to a record), typing a single character will access the nearest record meeting that parameter. As additional characters are added the desired record is located.

The current inventory status is presented as a scrolling table of all the parts in the inventory with the current inventory balance and latest transactions indicated. Use the right scrolling button to view the current inventory balance.

The data is presented in sorted order by either Stock Number, Part Number, Part Description, or Vendor as indicated on the tabs above the table. Point to the desired sort order tab with the mouse and press the left mouse button.

The "Last Transaction" section of the table indicates the date of the last transaction and the quantity that was either issued or received on that date. A part is issued when it is entered as used on a maintenance work order. A part is received when the part is entered as being received against an outstanding order in the purchasing system.

The inventory balance (the amount of parts physically on hand) may be adjusted as required. This may be the result of cycle counting of the inventory or by a complete physical count of all the inventory. If there is a variance of actual count to the computer inventory balance point to the "Adjust Inventory" button with the mouse and press the left mouse button.



Change the inventory balance quantity to the correct balance and select OK.

## **PURCHASING**

The "PURCH" menu selection enables the user to generate new purchase orders, view the status of open purchase orders, retrieve purchase order history, receive delivered parts and adjust the inventory automatically.

### *SUPPORT DATA*

The support menu selection provides access to a series of files that contain data supporting the various purchasing windows. For first time program users these files are normally completed before proceeding with the entry of actual purchasing records. Most of the data is available at appropriate data entry fields in the form of drop down data selection tables in the inventory and purchasing sections of the program.

To access a support file to add, view or revise the data, position the highlighted selector bar on the desired file using the mouse pointer. Press the left mouse button to display the selected data.

### *PURCHASE ORDERS*

The MPRO 2000 program is designed to determine when parts used in the maintenance function depletes the inventory below the minimum stock level established in the item master file. When parts are "issued" (by adding parts to the material used on a maintenance work order) the on hand inventory is reduced accordingly. When

this occurs the part is added to the table of “requested purchase orders” using the order quantity specified in the item master file. The user can scan this table periodically and select the items for which purchase orders are to be issued.

Select “PO’s” from the purchasing main menu to view the table of all issued purchase orders.

The screenshot shows a window titled "PURCHASE ORDERS" with a search bar for "Locate Stock No:" containing the value "3". Below the search bar is a table with the following columns: STOCK NO, PART NO, PO, ISSUED, VENDOR, QTY, MEAS, REC'D, and REQ DATE. The table contains five rows of data, with the third row highlighted in blue.

STOCK NO	PART NO	PO	ISSUED	VENDOR	QTY	MEAS	REC'D	REQ DATE
1		2	8/21/1996	Ace Industrial	10	Gal	10	6/19/1996
2	3499958-1A	2	8/21/1996	Ace Industrial	50	Ea	19	6/17/1996
3	231888	4	8/23/1996	Acme Industries, Inc	250	Ea	10	9/5/1996
4	7834-23A	3	8/23/1996	Bendix Supplies	150	Ea	110	8/5/1996
5	456933-4ABW	1	8/20/1996	Acme Industries, Inc	50	Ea	0	5/5/1996

At the bottom of the window are several buttons: Print PO, Add PO, Change, Delete, Close, and Help.

To view only open purchase orders, select “OPEN PURCHASE ORDERS” from the menu.

#### REQUESTED PURCHASE ORDERS

Select “REQUESTED PURCHASE ORDERS” to view those parts which have fallen below the minimum stock level defined in the inventory system. Items will automatically be added to the list when parts are specified for use in a maintenance action (issued) and the stock level has been depleted below the minimum level.

The screenshot shows a window titled "REQUESTED PURCHASE ORDERS" with a sub-header "PURCHASE ORDERS REQUESTED". It contains a table with columns: SEL, WO #, VENDOR, STOCK NO, PART NO, DESC, and QTY. Two items are listed, with the first item selected (SEL column contains 'Y').

SEL	WO #	VENDOR	STOCK NO	PART NO	DESC	QTY
Y	2	Ace Industrial	1	54028-A-1	Cylinder Head	30
		Bendix Supplies	7	4938AB-2	Special Brake Assy	10

At the bottom of the window are buttons: Select Item, Remove Sel, Select items for Purchase Order generation, Add Items, Change, Delete, PRINT MARKED PO'S, and Close. A note below the buttons reads: "Be sure to add shipment method etc. to each item selected (or to the first selected item listed for multiple items to the same vendor)." There is also a Help button.

To automatically generate purchase orders for the listed items point to each item that is to be included and press the “Select Item” button. Each item selected for purchase order generation will be marked with a “Y” in the SEL column.. To deselect an item, point to the item and press the “Remove Select” button. When all the selections have been made point to the “Print Marked PO’s” button and press the left mouse button. Individual purchase orders will be printed for each vendor of the required parts. All parts from the same vendor will be combined on a single purchase order.

### RECEIVE MATERIALS

To accurately track the purchase order system it is required to document the receipt of parts against the purchase order that was issued to a vendor for that part. When parts are received select the "RECEIVE MATERIAL" menu item from the Purchasing main menu.

PO	VENDOR	STOCK NO	PART NO	ORDERED	QTY RECEIVED		U/M	DESC
					LAST	TOTAL		
2	Ace Industrial	2	3499958-1A	50	19	19	Ea	Widget
4	Acme Industries, In	3	231888	250	10	10	Ea	Extra Widget
3	Bendix Supplies	4	7834-23A	150	10	110	Ea	Washer
1	Acme Industries, In	5	456933-4ABW	50	0	0	Ea	Concave Washer

The stock number of the part, the dates of issue and receipt, and the required quantity with the quantity received is displayed. The data may be viewed in order of stock number, purchase order number, vendor, or date issued by selecting the appropriate tab.

This table listing are all of the current open orders. That is, those purchase orders for which there are one or more items that the quantity of the item received is less than the quantity of the item ordered.

The table displays the open purchase orders, the part number of the part, the quantity of the part ordered, the last received quantity and the total received quantity.

Select the purchase order of the received part by using the mouse to position the highlighted selector bar on the correct purchase order. The user may sort the data by Purchase order, Stock Number, Part Number, or by Vendor to aid in the selection process. Point to the desired sort tab using the mouse and press the left mouse button. When the correct purchase order is selected point to the "Receive Mat'l" button with the mouse and press the left mouse button. Enter the receive date and the quantity received to update the status.

### OPEN PURCHASE ORDERS

A scrolling table listing of all open purchase orders is accessed by selecting PURCHASING from the main menu of MPRO 2000, then select PURCHASE ORDERS, then select OPEN PURCHASE ORDERS from the sub menu.

A purchase order is considered open if the quantity of parts received against the purchase order is less than the required quantity on the purchase order.

STOCK NO	PART NO	PO	ISSUED	VENDOR	QTY	MEAS	REC'D	REQ DATE
2	3499958-1A	2	8/21/1996	Ace Industrial	50	Ea	19	6/17/1996
3	231888	4	8/23/1996	Acme Industries, Inc	250	Ea	10	9/15/1996
4	7834-23A	3	8/23/1996	Bendix Supplies	150	Ea	110	8/15/1996
5	456933-4ABW	1	6/20/1996	Acme Industries, Inc	50	Ea	0	5/15/1996

The listing of all open purchase orders is presented in sorted order by either Stock Number, Purchase Order Number, Purchase Order Date, or Vendor as indicated on the tabs above the table. Point to the desired sort order tab with the mouse and press the left mouse button.

The pertinent data about the purchase order is shown in the table. Additional detail about each purchase order is available by selecting the “Change” button.

To add a new purchase order point to the “Add PO” button with the mouse and press the left mouse button. To modify or delete an existing purchase order position the highlighted selector bar on the desired purchase order with the mouse and then select either the “Change” or “Delete” button with the mouse.

To print the selected purchase order point to the “Print PO” button and press the left mouse button.

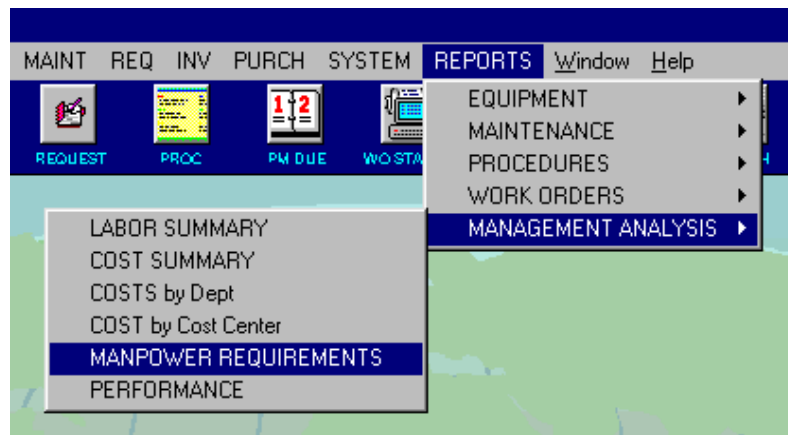
## MAINTENANCE REPORTS

The maintenance reports section provides an extensive choice of maintenance data reports, reports of equipment maintenance that are due for the user selected time period, reports of the maintenance interval for the equipment, maintenance overdue reports and a maintenance history report for any user selected equipment. Take the opportunity to explore the various report formats to fully understand the functions. The unique Management Analysis reports are of particular interest.

A powerful preview feature of the report on screen is provided for each report type. This allows you to see the format of the report and the data selected for the report, before it is actually printed. The user, therefore, can review the data and make any necessary changes to the time period or choice of other variables before printing.

The management analysis reports provide the user with labor summary, maintenance cost data, maintenance manpower requirements, and maintenance department performance reports.

To access the report menu select “REPORTS” at the main menu of MPRO2000 and then select “MANAGEMENT ANALYSIS” at the sub menu.



The labor summary report provides all the maintenance labor expenditures over any user specified time period.

The cost summary report provides the labor, materials, and maintenance subcontracting costs incurred during the user specified time period. This report is also available for each department and for each cost center. This is very valuable to charge back departments or individual cost centers for maintenance work performed over any time period.

The manpower requirements report provides the maintenance labor requirements for open work orders in the system for any user specified time period.

The performance report calculates the efficiency of the maintenance department based on completed work orders for the time period specified by the user.

Place the highlighted cursor on the desired report and click with the left mouse button to view the preview window. Select the print icon with the mouse or select "File" and then "Print".

## REQUESTING MAINTENANCE

The maintenance request system permits any employee with access to the program to request that maintenance be performed. The requester completes the information on the request screen to generate a request. The security in the program permits only a supervisor with a security level of 3 or better to convert the request to a maintenance work order. Only the maintenance supervisor can change or delete a maintenance request that has been entered.

To issue a maintenance request select "REQ" from the main menu or select the Maintenance Request icon.

REQUEST NO	EQUIP NO	REQUEST DATE	COST CTR	REQUESTED BY	DEPARTMENT	T
1	AAAA/BA	3/05/1998	C1000	Any Grant	Engineering	UP
2	AAAA/CC	3/05/1998	C1001	George Horner	Maintenance	UP

Equipment: INSERTION MACHINE  
Mfg: Howell Machine Co. Model: A100 S/N: B1000

REQUESTED MAINTENANCE:  
The #4 insertion head is sticking intermittently. Needs attention ASAP.

ISSUE WORK ORDERS  
Select request to be issued as work orders by clicking the left mouse button to highlight choices. Then press the "Issue WO" button.

Buttons: ISSUE WO, Add Request, Change, Delete, Close, Help

To add a new maintenance request select the “Add Request” button. Complete the request information, including a complete description of the maintenance to be performed. A unique sequential maintenance request number is automatically assigned to the request.

The supervisor can select multiple request to be converted to maintenance work orders by highlighting the request with the mouse cursor and clicking the left mouse button (deselect by placing the cursor on the request and again click the left mouse button. After all the selections are made select the “ISSUE WO” button. The requests are converted to work orders. To view all maintenance requests select the “All MAINTENANCE REQUESTS” selection in the “REQ” submenu.

## **AFTER THE TOUR**

After becoming thoroughly familiar with the various menu selections, experiment with the sample data provided by changing and adding records in each of the data areas. When the user is comfortable with the program remove (delete) the sample data and enter data pertaining to the company. Start by entering the known data in the Support files section. Then enter the Equipment detail data using the Maintenance menu selection. The user should then begin adding new maintenance work orders.