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C. OWL Software Products

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# I. Getting Started

## Introducing Master Investor

Welcome to Master Investor (MI) for Windows. MI is a fully integrated system that combines portfolio management with technical analysis. The purpose of MI is to help individual investors and professional money managers organize and analyze the information that is critical to making informed investment decisions.

The MI program provides complete tracking of security and cash transactions with automatic computation of net worth, capital gains, unrealized gains, return on investment, asset allocation and much more. But MI does more than track your investments. It allows you to organize your information into up to 999 portfolios and produce reports based on any one or more portfolios. This allows you to set up portfolios to record investments held in your name, by other family members, by members of an investment club or by investment clients. As well, you could set up separate portfolios for retirement savings, childrens education, speculating, and even hypothetical portfolios to follow the advice of an investment newsletter.

Simply tracking investments is not enough. The MI program also includes powerful tools to help you analyze current and potential investments. Technical analysis features include a series of charts that provide visual analysis of price movements. Available technical indicators include: moving averages, on-balance volume, stochastic oscillators, Wilder's RSI, MACD, relative strength (i.e., Ratio Cantor), polynomial trend analysis and correlation analysis. In addition to technical analysis charts, comparative analysis of annualized total return can be generated to identify your best and worst performing investments.

## System Requirements

MI requires Windows 3.1 or higher, a hard disk with approximately 2.5 megabytes of free space, 4 Megabytes of RAM, and a Windows compatible graphics printer.

In your Config.Sys file, the parameter Files= should be set to 40 or more.

## Installation

To install MI, use the Program Manager or File Manager to start INSTALL.EXE as you would any other Windows-based application. For example, if you are installing from drive A:

1. From the Program Manager File menu, choose Run.
2. In the Run dialog box, type A:INSTALL and choose OK.

The install program will allow you to select the drive and directory where MI will be installed. The default is C:\MI. If you are reinstalling MI or installing an updated version, use the same directory where you originally installed the program.

Before writing files to your hard disk, the install program checks to see if a file with the same name already exists. If there is another file with the same name, a message is displayed similar to the following.

```

                                     mi.exe
-----
Another copy of this file already exists in
c:\mi

Source File:   14 Aug 1995   10:15:14:   141005 bytes
Target File:   06 May 1995   10:15:14:   141005 bytes

Should I overwrite the existing file?

                                     Yes       No
-----
```

Click on Yes **ONLY** if the source file is newer than the Target File.

The Install program creates a program group named Master Investor with icons for the Master Investor program, Master Investor Help (MI Help) and Master Investor README (MI Read Me).

## Starting MI

Before running MI for the first time view the README file by double clicking the MI Read Me icon. The Readme file will contain the most up-to-date information about MI. To run MI double click on the Master Investor icon.

The data files shipped with the program contain sample data that is provided to help you become familiar with the various options and capabilities of MI. The sample data covers the period November 1993 through October 1995. The **Learning Master Investor** section of the Users Guide contains a step-by-step guide to getting acquainted with MI.

## **Program Setup**

Master Investor has several options that must be set prior to running reports and entering data. These options are accessed by selecting the File/Setup option from the main screen. The setup options are used to set the default window's printer, the font used to display and print reports, the format in which dates are displayed and the number of months a security must be held for capital gains to be considered long term.

### ***Printer***

When printing reports, MI sends reports to the default window's printer using the default printer orientation (i.e., Portrait or Landscape). The Printer setup may be used to change your Windows default printer, default orientation and other printer options supported by your printer.

### ***Report Font***

The Report Font option is used to select the font and font size that will be used for displaying and printing reports. Font sizes are limited to 10 through 12 pitch. We recommend Times New Roman at 12 pitch.

**Hint:** If you select a font that is too large to show all data when printing a report, MI will display a warning message. If you see this warning message, you should either select a smaller font, a smaller font size or change the printer orientation to Landscape.

### ***Date Format***

The Date Format option is intended primarily for users who do not use the American standard format of "month/day/year." Several international date formats may be selected from the a menu that is displayed after selecting this option. After selecting the desired date format, all dates should be entered and will be displayed in the selected format.

**Note:** Due to the proximity of the year 2000, MI requires that dates be entered using a 4 digit year.

### ***Long Term Months***

When MI computes capital gains, it differentiates between long term capital gains and short term capital gains. In order that MI does not become obsolete when there is a change in the tax law, MI allows user definition of the long term holding period. The default setting is 12 months.

**Note:** MI computes the minimum holding period for long term as Long Term Months plus one day.

**Hint:** If your local tax laws do not differentiate between long and short term capital gains, set the Long Term Months to zero. All gains will then be reported as long term gains.

### ***Shortcut Icons***

The Shortcut Icons option is used to enable or disable the display of the graphic icons that appear on MI's main screen. These icons provide single click access to the most commonly accessed functions in Master Investor. On some machines, displaying these graphics can slow the program. Disabling the icons will improve the display performance.

**Note:** all of the functions accessed from the icons can also be accessed from the pull down

menus.

## **Technical Support**

If you are unable to resolve a question or you have difficulty running MI, please call us or send us a letter describing the problem. Include the exact text of the error message (if any) and a complete description of the problem, your computer system (computer, memory, graphics card, DOS and Windows version, contents of CONFIG.SYS and AUTOEXEC.BAT files, etc.), the option you were running when the error occurred and any supplemental data that you entered under the option. If possible, please also include a disk created using the File-Backup Data option (your data will be held in strict confidence). We will investigate the problem and respond as quickly as possible.

We at 'Otto-Williams Ltd. take great pride in providing quick responses to our customer's questions. Including your phone number will also help in the event we need additional information to diagnose the problem.

Our technical support group can be reached at:

**MI Tech Support  
Otto-Williams Ltd.  
P.O. Box 794  
Lanham, MD 20703-0794**

**Phone: 301-306-0409  
EMail: 72144.1223@Compuserve.Com**

## II. Learning Master Investor

MI is distributed with sample data so that you can become familiar with the various options and capabilities of the program before entering your own data. The sample data that is distributed with MI covers the period from November 1, 1993 through October 30, 1995.

The following paragraphs provide instructions for using some of the key elements of MI. We encourage you to experiment with all of the reports, charts and data entry screens to become thoroughly familiar with MI before entering your own data.

### Managing Portfolios

A central feature of MI's portfolio management capabilities is the ability to create reports for any one portfolio or for any combination of portfolios.

In the Reports menu, select Net Worth/Detail Report, then select all portfolios. Note how the report separates the assets and liabilities for each portfolio. Next, select the Net Worth/Composite report with all portfolios. Note how the report composites the portfolios together as if they were a single portfolio.

In organizing your finances, you should consider dividing your assets into enough portfolios to show the finest level of detail that you require when reporting on a single portfolio. At the minimum, we recommend that a portfolio be created for each category of tax treatment (taxable, tax deferred, tax exempt, etc.) that applies to your assets. In addition, you may want to consider adding hypothetical portfolios to test various trading systems or to monitor the performance of advisory newsletters. To add, rename or delete portfolios from your system, select the Define/Portfolios option.

MI gives you the ability to move assets from one portfolio to another. For example, to move a share lot from one portfolio to another select Buy-Sell/Stock-Mutual Fund/Edit-Delete options. Select General Electric then select the share lot purchased on 8 December 1993. When the security transaction screen is displayed, click the Portfolio button. From the displayed menu you may then select an alternate portfolio. You may also select New Portfolio to create a new portfolio where the share lot will reside.

To move a savings account, other asset or liability from one portfolio to another, select the type of account to be moved from the Define menu. For example, to move a savings account, choose Define/Savings. After selecting the account, click the Portfolio button to change the portfolio.

**Note:** stocks, bonds and options are defined independently of any portfolio since a given security may reside in many different portfolios. Conversely, savings/cash accounts, other assets and liabilities are defined within a portfolio since they can reside in only one portfolio at a time.

### Tracking Savings, Other Assets and Liabilities

Within MI, savings accounts can be thought of as any cash based account including bank savings accounts, money market mutual funds, certificates of deposit and brokerage cash management or sweep accounts. MI maintains a complete transaction history of all deposits and withdrawals.

Savings transactions are entered using the options in the Savings menu. For example, select Savings/Deposit/Brokerage Sweep Account. When the Savings screen is displayed, enter the transaction date, deposit amount and any Memo text you may need to describe the deposit. Click

the Save button to save the transaction.

The present balance of savings accounts may be viewed by selecting Reports/Holdings-by-Type/Savings. A ledger of deposits and withdrawals can be viewed by selecting Reports/Transaction Detail/Savings. Similar reports are available for other assets and liabilities.

Whereas savings accounts are cash based, other assets are generally property based. Other assets may include real estate, cars, rare coins, stamp collections and any other property that has a known value.

Liabilities are any cash amount or property that you owe to someone else. They include the mortgage on your house, car loans, installment debt, etc.

### **Tracking Security Transactions**

The MI program provides complete tracking of security transactions with automatic computation of capital gains, unrealized gains and return on investment. Security transactions are entered using options in the Buy-Sell menu.

To buy a stock or mutual fund select options Buy-Sell/Stock-Mutual Fund/Buy. Click the Stock/Fund button and select a stock or mutual fund. Click the Portfolio button and select a portfolio, then enter the information on the left half of the Security Transaction screen (i.e., purchase date, number of shares, principal cost, commission and other cost). Click the Save button to save the transaction.

Each time a new security transaction is entered and saved, MI offers an option to withdraw funds from a savings account to pay for the purchase or deposit funds to a savings account when shares are sold. Clicking the Yes button on the Sweep Funds dialog allows you to select a savings account for the deposit or withdrawal.

MI allows you to designate the cost basis accounting method to be used when selling shares of a stock or mutual fund that you own. For example, select Buy-Sell/Stock-Mutual Fund/Sell. On the Sell screen click the Stock/Fund button and select Merck then click the Portfolio button and select John C. Smith Family. Next, enter Shares Sold = 100, Gross = 3800 and Commission = 100.

Make a note of the cost basis and gain displayed at the bottom right of the Sell screen. Click on the down arrow in the Sale Method box to display a list of cost basis accounting methods. Select Specific Identification. Select the second share lot and enter Sold = 100 then click the Save button followed by the Done button. Note the change in the cost basis and gain displayed on the Sell screen. You may want to experiment with other sale methods to see their effect. Once you are satisfied with the sale transaction, click the Save button.

When computing capital gains, MI uses the cost basis (including commissions) and the net sale amount (after commissions) to determine the gain. MI also separates gains into long and short term based on the Long Term Holding Period in your setup. View a capital gains report by selecting Reports/Income-Gains/Capital Gains for all issues in all portfolios. More detailed information, including commission amounts, is available in the Transaction Detail report.

### **Tracking Prices**

Options in the Prices menu are used to maintain current and historic price and volume data for stocks, mutual funds, market indexes, bonds and options. Price and volume data may be entered manually or imported from data files that are available from a variety of information services. MI is capable of maintaining daily price histories on each security. This price history forms the basis for computations of net worth, return on investment, portfolio valuations, unrealized gains, etc. In fact, the current and historic prices are used in nearly all of the reports produced by MI.

To enter or edit price and volume data for a stock or fund, select Prices/Stock Quotes. On the Price Quote screen click the Stock/Fund button and select a stock. Enter the date of the price quote, the volume, open, high, low and closing prices. If you enter a date for which a price quote already exists, the existing quote will be displayed. You may also click the Browse/Edit button to view a list of existing quotes for the selected stock or fund.

When you have finished entering or editing a price quote, click the Save button to save the quote to disk. You may then select other securities or click the Done button to return to the main menu.

### **Tracking Investment Income**

The Income menu provides options for entering and editing income derived from your investments. Income can be in the form of interest, dividends, long and short term capital gains distributions from a mutual fund or other income. Note that MI automatically tracks capital gains from the purchase and sale of securities. Entry of long and short term capital gains is required only for capital gains distributions from a mutual fund.

To add interest income from a savings account Select Income/Add Income From/Savings then select one of the listed accounts. Enter the date the interest was paid and the amount. The income type can be changed by clicking the down arrow in the Income Type box. Click the Save button to save the transaction.

Each time a new income record is added you will have the option to reinvest the income. If the income was derived from a savings or other asset account the program will display a dialog box asking if you want to deposit the income into the account from which it was derived. If the income was derived from a security, you will have the opportunity to purchase additional shares of the issue using the income or sweep the income into a savings account.

Options under Reports/Income-Gains provide summaries of interest, dividend and other income entered using the options in the Income menu.

### **Technical Analysis**

There are two basic types of stock market analysis. These are fundamental analysis and technical analysis. Fundamental analysis uses corporate earnings, assets, liabilities, cash flow, etc. as a basis for projecting future performance of a security. Technical analysis uses price movements as its primary basis for performance predictions. Technical analysis is based on the belief that the fundamental analysis of individual securities is already built into its price movements and can, therefore, be virtually ignored.

### ***Stock Charts***

MI's three basic stock charting options are accessed by selecting Charts from the main screen and Stock Charts from the Charts screen. The three basic stock charts are described in the following paragraphs. A variety of technical indicators may be overlaid on each of the three basic charts. These are accessed by clicking on command buttons at the bottom of the chart display.

The **Single Issue** option plots price and volume movements of a selected security or market index. Try this chart by Selecting Stock Charts/Single Issue. On the Chart Span screen set the ending date to 30 October 1995 and Click OK. Select Merck. Once a chart has been displayed, you may click the New button at the bottom left of the chart to select another security to be displayed. Other buttons display technical indicators that are described below.

The **Relative Performance** option plots a comparative analysis of the price movements of one security against another security or a market index. Prices of the two selected securities are plotted using the same relative scale. The price bars and axis labels are color coded to the security names. Try this chart by Selecting Stock Charts/Relative Performance. In the Chart Span dialog box set the ending date to 30 October 1995 and Click OK. Select Merck then select General Electric. Note that where the yellow area plot is rising, the price of Merck is rising relative to the price of General Electric. The converse is also true.

The **Correlation** chart performs a least squares linear regression analysis on the price movements of one security versus those of another security or index. Correlation is the statistical means of determining whether the prices of one security move in direct relation to the prices of a market index or another security. After entering the year ending date, select the two securities to be used in the correlation analysis.

Correlation analysis operates by plotting a scatter-gram of the closing prices of the first security (measured on the y-axis) against the corresponding closing prices of the other security or index (measured on the x-axis). Once the points have been plotted, the straight line that best fits the points is computed and plotted. The line is computed using a least squares linear regression. The program displays the formula for the plotted line, the standard deviation (the standard error between plotted prices and the line), and the correlation coefficient.

Correlation coefficients range from zero to plus or minus one and provide an indication of how good the price relationship is between the two securities. Values near plus or minus one indicate that there is a strong relationship between the price movements of the two securities. Values closer to zero (-0.75 to +0.75) indicate poor correlation. If the coefficient is negative, it means that a negative price relationship exists (a price increase in one yields a corresponding price decrease in the other).

After plotting the scatter-gram, a price chart of the first selected security is plotted. The solid green band denotes the predicted prices for the security within plus or minus one standard deviation.

The Correlation chart is most useful when there is a high degree of interdependence between two securities (i.e., correlation coefficient is greater than 0.9 or less than -0.9). Under these circumstances, a sudden deviation of the price outside the solid area may indicate a change of market sentiment towards the stock. Such changes in sentiment are often the result of an unexpected change in earnings, a buy or sell recommendation from a major broker, takeover rumors, etc. Rather than a signal to buy or sell, it is a signal to research any recent news on the company.

### ***Technical Indicators***

Technical indicators may be overlaid on any of the three basic stock charts by clicking the button that corresponds to the indicator to be plotted. These indicators and their interpretation are

described in the following paragraphs.

The **MA** button plots a simple moving average. Click the MA button and enter a moving average period in the displayed dialog then click OK. The period entered is the number of data points over which the average is computed. Simple moving averages are commonly interpreted to give a Buy signal when the price is above the moving average line and a Sell signal when the price is below the moving average line. While this method is useful in a trending market, it yields poor results (frequent buy and sell signals) in a horizontal market.

The **Exp MA** button plots an exponential moving average. Click the Exp MA button and enter a moving average factor in the displayed dialog then click OK. The moving average factor is the weight applied to each new point when it is added to the previous value. That is, a factor of 10 means that each new point is given a weight of one tenth of the previous average when computing the new average. The formula for this is:

$$EI = EI-1 + (PriceI - EI-1) / \text{Factor}$$

Exponential moving average lines are interpreted in the same manor as simple moving average lines.

The **Fit** button uses a best fit algorithm to fit a polynomial curve to the closing prices. Click the Fit button and enter a polynomial order from 1 to 9 then click the OK button. The polynomial order refers to the number of elements in the polynomial equation used to determine the best fit line. A polynomial order of 1 is a straight line. Curvature and complexity of the line increases as the polynomial order is increased. The formulation of a fourth order polynomial is:

$$Y = A + BX + CX^2 + DX^3 + EX^4$$

The best fit line can generally be regarded as a price trend. A buy is thought to be signaled when the line is moving up and prices are below the line. Conversely, a sell is signaled when the line is trending downward and prices are above the line.

The **OBV** button plots On-Balance Volume. On-Balance Volume is a technical indicator that shows the strength of price movements by incorporating volume information. When the stock closes higher than the previous period's close, the volume is added. Conversely, when the stock closes lower, the volume is subtracted. The cumulative value is plotted as a single line that is overlaid on the price chart. Click the OBV button to display the On-Balance Volume line

The main advantage of this indicator is in determining the level of market support for a price advance or decline. For example: if the price of an issue is increasing over a period and the on-balance volume is relatively flat over the same period, it indicates that the price advance has poor support and may not be sustained.

The **MACD** button plots the indicator known as Moving Average Convergence Divergence. MACD is computed as the rate at which two exponential moving average lines move relative to one another. Click the MACD button and enter exponential moving average weights for the fast and slow line. [Hint](#): The fast weight must be less than the slow weight.

MACD is plotted on the bottom chart having a simple plus, zero, minus scale shown on the right of the chart. To help you understand MACD, you may also want to plot the Exponential Moving Average lines that correspond to the weights of your fast and slow MACD lines. Comparing the

MACD plot to the corresponding Exponential Moving Averages, you will see that MACD is positive when the slope of the fast moving average is greater than the slope of the slow moving average. MACD is zero when the two moving average lines are exactly parallel.

MACD is interpreted as giving a buy signal when it crosses the zero line moving from negative to positive. A sell signal is given when the MACD falls from positive to negative.

The **RSI** button plots Wilders Relative Strength Index. Click the RSI button and enter the RSI period. The RSI period is the number of points (i.e., days or weeks) over which each RSI value is computed. The formulation is:

$$RSI = 100 - 100/(1-U/D)$$

Where U is the average of the days closing higher during the period and D is the average of the days closing lower over the period. A 14 day interval is the default period on 6 month charts.

RSI is generally interpreted as showing an overbought condition (sell signal) when the value is above the 70% line. An oversold condition (buy signal) exists when the value is below the 30% level.

The **%KD** button plots the Stochastic Oscillator (%K) and the Smoothed Stochastic Oscillator (%D). The stochastic oscillator is formulated as:

$$\%K = 100 * (\text{Closing Price} - \text{Lowest Low})/(\text{Highest High} - \text{Lowest Low})$$

where the highest high and lowest low are determined over the period you enter. The smoothed stochastic oscillator (%D) is the exponential moving average of %K. The factor used in the moving average is the number of %K periods.

Click the %KD button to plot the stochastic oscillator. The stochastic oscillator (%K) is plotted in cyan and the smoothed oscillator is plotted in blue. The generally accepted interpretation of %KD states that an overbought condition exists when the %K crosses %D and both are above 70% and pointing downward. Conversely, an oversold condition exists (buy signal) when %K crosses %D and both are trending up but below 30%.

A simpler interpretation of %KD, and one that we prefer, is to buy when %K is higher than %D and sell when %K is lower than %D.

The **Clear** button clears any previously plotted oscillators or volume data from the lower chart and displays a clean grid for plotting MACD, RSI and %KD. The **Vol** button re-plots the volume bar chart.

## Entering Your Own Data

Once you have become familiar with the various elements of the MI program and the way they are linked to your data, you will want to begin using MI operationally with your own data. The following is a step by step procedure for setting up MI with your own data.

1. Delete the sample data. To delete the sample data and prepare the databases to accept your own personal data select File/File Maintenance/ERASE ALL DATA.
2. Define Portfolios. To create a new portfolio select Define/Portfolios/New Portfolio. In

- organizing your finances, you should consider dividing your assets into enough portfolios to show the finest level of detail that you require when reporting on a single portfolio. At the minimum, we recommend that a portfolio be created for each category of tax treatment (taxable, tax deferred, tax exempt, etc.) that applies to your assets.
3. Define Investment Objectives. To define a new investment objective select Define/Investment Objectives/New Objective. MI uses investment objectives to classify the allocation of assets in asset allocation reports and charts. Your definition of investment objectives should reflect the type of asset allocation output you desire.
  4. Define cash accounts and enter transactions. To define a new savings/cash account select Define/Savings-Cash Accounts/New Cash Account. Once you have defined a cash account you may enter cash transactions using the Deposit and Withdraw options in the Savings menu. Enter an opening balance as an initial deposit. We suggest that for old accounts, you use the balance at the beginning of a year as your opening balance and enter only deposits and withdrawals that are subsequent to that date.
  5. Define securities and enter trades. To define a new security select Define and the type of security to be defined. Start with securities that you currently own then follow up with indexes and securities that you want to track for comparative analysis and possible later purchase. After a security has been defined you may record purchases and sales of that security using the options in the Buy-Sell menu. When entering old security transactions, it is important to enter them in chronological order.
  6. Enter investment income. To enter investment income select Income/Add Income From and the type of asset from which the income was derived. We suggest that you limit your data entry to the current tax year.
  7. Enter or import current and historic price quotes. Security price quotes may be entered or imported using the options in the Prices menu. If you do not have a source of historic price data, you may wish to limit your price entries to the current prices and build from there. If you choose this course, be aware that the Net Worth chart and Portfolio Change report will be accurate only from this date forward. To gain some additional accuracy you might consider entering historic price quotes monthly going back to when each security was originally purchased.

After completing this initial setup, maintaining accurate records of your finances is a matter of entering new transactions when they occur and either importing or entering current price quotes for securities.

## **Investment Decisions**

Remember that investing in stocks and bonds is a form of gambling. The best any program, trading system or analytical technique can hope to achieve is to provide information that will improve your odds of success. MI will not make investment decisions for you. It is up to you, the user, to interpret the information presented by MI using your knowledge, experience and intuition. To make your use of MI more enjoyable, and perhaps more profitable, we suggest that you read some of the many books that are available on portfolio management, stock chart interpretation and market timing.

### III. Program Setup and File Maintenance

The File menu offers options for customization of MI, and file maintenance including data backup and restore. In addition, special file maintenance options are provided to help with maintaining some of the large data files used by the system.

Options in the Setup Menu are described in [Chapter I, Program Setup](#).

#### File Maintenance

##### *Reindex Data Files*

The Reindex Files option recompiles the database index files. Use this option after any abnormal exits from the program or if you find that data is missing from your files.

##### *Erase Old Prices*

As you continue to accumulate data, you may find that you no longer have a need to look at charts containing historical prices that are older than a certain date. The Erase Old Prices option is provided so that you can quickly delete old price quotes from your hard disk. This will save disk space and improve the performance of your system. See also Composite Old Prices.

**Hint:** If you think that at some point in the future you may want to look at old price charts for a specific issue, use the price list report and export the prices to a tab delimited file. You will then be able to import the data at a later date if the need arises.

##### *Erase Old Net Worth*

MI maintains a database containing the weekly net worth for all portfolios. This database is used for Net Worth charts and the Portfolio Change report. If your requirements are such that you do not need to look at net worth values prior to a specific date, you can save the disk space that is taken up by those records.

**Hint:** Net Worth data records are automatically created each time you run a report or chart that requires a data point that is missing from the net worth database.

##### *Composite Old Prices*

If you find that you do not look at daily (6 month) stock charts that cover periods earlier than a specific date, you can dramatically reduce the amount of disk storage required to maintain your data. The Composite Old Prices option replaces daily stock price records prior to a specified date with weekly composite price records. A weekly composite record is composed of the weeks open, close, highest high and lowest low prices, and the weeks total volume. This can dramatically improve the performance of weekly stock charts because the program no longer needs to form the weekly composite prices.

##### *Erase All Data*

MI is distributed with sample data that is provided to help new users become acquainted with the capabilities of the system without having to enter their own data. Once you are ready to begin entering your own personal financial records, the Erase All Data option provides a quick means of removing all of the sample data from the system.

### ***Convert OPPM Data***

The Convert OPPM Data option is provided for individuals that are upgrading to MI from the OWL Personal Portfolio Manager (OPPM). The option reads data from OPPM versions 3.0 and above and performs the data conversions needed to build MI databases.

After selecting this option, a file dialog screen appears allowing you to select the drive and directory where OPPM data files are stored. Once the correct directory has been selected, the program proceeds with the file conversion.

**Hint:** When converting OPPM savings, other asset and liability positions, MI records the current OPPM balance in a single record dated on the conversion date. You may wish to use the Edit-Delete options in the Savings and Other A-L menus to back date these records. See [Appendix A. Upgrading from OPPM](#) for more information.

### **Backup Data**

The Backup option creates a backup copy of your data files on a floppy disk. Select either floppy disk A or B from the menu and be sure to insert a formatted diskette in the selected drive before proceeding with the backup.

### **Restore Data**

The Restore option copies backup data files from a floppy disk, created with the File Backup option, to your hard disk and recreates the necessary index files. If your backup data consists of multiple disks, you must insert the disks in the proper order.

## IV. Defining Portfolios, Securities and Investment Objectives

The Define menu offers options to create, edit and delete master definitions of securities, savings accounts, other assets, liabilities, portfolios, and investment objectives.

Selecting one of these options loads a pop-up menu containing the names of all of the items defined for the selected option. To edit or delete a previously defined item, select it from the menu. To add a new definition, select the **! New . . . !** item at the top of the menu.

When you delete an item under the Define menu, the program automatically deletes all records that cross reference that master definition. For example, if you delete a stocks master definition the program also deletes all of that stocks transactions along with any price/volume data that has been entered for that stock.

### Define: Stock - Mutual Fund - Index

Stocks, mutual funds and indexes are defined as shown in Table IV-1.

Data Field	Description
Stock Name	The name of the stock, mutual fund or index
Symbol	The ticker symbol, Sedol or Cusac number used to identify the issue in files containing current or historical price quotes that will be imported using the Prices/Import option.
Dividend/Yr.	The amount of the annual dividend for this stock or mutual fund. This amount is usually listed in the financial pages of your newspaper. Note: Enter a monetary amount -- not a percentage.
Investment Objective	The user defined asset class of the issue. See <u>Investment Objectives</u> below.
Target Price	The price you are hoping the issue to rise to before selling.
Stop Loss Price	The price at which you will sell the issue to minimize losses should the price fall.

If you delete a stock, mutual fund or index definition, all transactions, income (interest, dividends, and capital gains) and price history data for that issue will also be deleted from MIs data files.

### Bond

Bonds defined as shown in Table IV-2

Data Field	Description
Bond Name	The name of the Bond
Symbol	The ticker symbol, Sedol or Cusac number used to identify the issue in files containing current or historical price quotes that will be imported using the Prices/Import option.

Coupon Yield %	The stated coupon yield of the bond. Equivalent to the interest rate if the bond were purchased at face value
Face Value	The face value of the bond.
Maturity Date	The date the bond matures.
Investment Objective	The user defined asset class of the bond. See <u>Investment Objectives</u> below.
Target Price	The price you are hoping the issue to rise to before selling.
Stop Loss Price	The price at which you will sell the issue to minimize losses should the price fall.

If you delete a bond definition, all transactions, income (interest, dividends, and capital gains) and price history data for that issue will also be deleted from MIs data files.

### Puts and Calls

Put and call options are defined as shown in Table IV-3:

**Table IV-3**

<b>Data Field</b>	<b>Description</b>
Option Name	The name of the Put or Call Option
Symbol	The ticker symbol, Sedol or Cusac number used to identify the issue in files containing current or historical price quotes that will be imported using the Prices/Import option.
Dividend/Yr.	Zero, this field does not generally apply to options.
Strike Price	The specific price at which you may buy or sell the security. This is also known as the exercise price.
Option Date	The date when the option expires.
Investment Objective	The user defined asset class of the option. See <u>Investment Objectives</u> below.
Target Price	The price you are hoping the issue to rise to before selling.
Stop Loss Price	The price at which you will sell the issue to minimize losses should the price fall.

If you delete a put or call definition, all transactions, income (interest, dividends, and capital gains) and price history data for that issue will also be deleted from MIs data files.

### Savings (Cash Accounts)

Savings and other cash basis accounts are defined as shown in Table IV-4.

**Table IV-4**

<b>Data Field</b>	<b>Description</b>
Account Name	An identifying name of the cash account.
Portfolio	The portfolio in which the account resides.
Account Number	The identifying number of the account.

Interest Rate	The current interest rate paid on this account.
Investment Objective	The user defined asset class of the cash account. See <u>Investment Objectives</u> below.

---

If you delete a savings definition, all transactions and income data for that account will also be deleted from MIs data files.

## Other Assets

Other assets are generally property assets such as real estate, fine art, coin collections, etc. that you wish to track using MI. They are defined as follows:

**Table IV-5**

<b>Data Field</b>	<b>Description</b>
Asset Name	A name or description of the asset
Portfolio	The portfolio in which the asset resides.
Account Number	The identifying number of the account. (optional)
Growth Rate	An estimated rate at which the asset appreciates.
Investment Objective	The user defined asset class of the asset. See <u>Investment Objectives</u> below.

---

If you delete an other asset definition, all transactions and income data for that asset will also be deleted from MIs data files.

## Liabilities

Liabilities include the mortgage on your house, car loans and other debt. Liabilities are defined as follows:

**Table IV-6**

<b>Data Field</b>	<b>Description</b>
Liability Name	An identifying name of the liability.
Portfolio	The portfolio in which the liability resides.
Account Number	The identifying number of the account.
Interest Rate	The current interest rate paid on this account.

---

If you delete a liability definition, all transactions for that liability will also be deleted from MIs data files.

## Portfolios

As the term is used within Master Investor, a portfolio is a logical grouping of financial assets and liabilities. Portfolios are defined as follows:

**Table IV-7**

<b>Data Field</b>	<b>Description</b>
Portfolio Name	A descriptive name that identifies the portfolio.

---

When a portfolio definition is deleted, all transactions and income records assigned to that portfolio will either be deleted or optionally may be transferred to another portfolio.

### **Investment Objectives**

As the term is used within Master Investor, an investment objective is a user defined class of assets. This may be defined in terms of investment objectives (i.e., growth, tax free income, capital appreciation, etc.) or any other classification scheme that is appropriate for the individual user. Investment objectives are defined as follows:

**Table IV-8**

<b>Data Field</b>	<b>Description</b>
Investment Objective	A descriptive name the asset class.

When an investment objective is deleted, MI requires that you select another objective to replace the deleted objective. All assets having the deleted objective are reassigned to the replacement objective.

## V. Buying and Selling Securities

### Buying Securities

Once a security has been defined using one of the options in the Define menu, you may choose the Buy option for the type of security being purchased. This will display the security transaction screen for the type of security being purchased. The security transaction screen contains the following information that is to be filled in at the time of purchase.

**Table V-1: General Information**

<b>Data Field</b>	<b>Description</b>
Security Name	A command button on the top left of the screen is labeled with the type of the security to be purchased. Click on the command button to select the security to be purchased.
Portfolio	Click on the Portfolio command button to select a portfolio where the purchase lot will reside.
Option on Stock	Put and Call options only. Click on the command button to select the stock to which the option applies. For example, you would select XYZ Corp. if you are purchasing a put or call option on XYZ Corp.

**Table V-2: Purchase Information**

<b>Data Field</b>	<b>Description</b>
Purchase Date	The date you purchased the security or option
Number of Shares	The number of shares of the security being purchased. For bonds this is the number of bonds. For options, this is the number of stock shares that you may buy or sell when exercising the option.
Principal Cost	The total purchase price of security or option excluding commissions and fees.
Commission	The commission paid to a broker or dealer for purchasing the shares
Other Cost	Any other costs of purchasing the shares such as margin costs.
Total Cost	This is automatically computed as the sum of the principal, commission and other cost.

In addition to purchase information, the security transaction screen also contains sales information. Note that this information appears only for the purpose of editing sale information after it has been posted using the Sell option.

**Table V-3: Sales Information**

<b>Data Field</b>	<b>Description</b>
Date Sold	The date you sold the security or option
Gross Amount	The gross (total) amount of the sale. For stocks, this is the selling price times the number of shares.
Commission	The commission paid to a broker or dealer when selling the

	security.
Net Amount	Computed - Gross amount less commission.
Cost Basis	Computed - You may override this value.
Gain/Loss	Computed - Net amount less cost basis.

---

**Hint:** When you receive dividends or capital gains distributions that are reinvested in shares of the same stock or mutual fund, use the Income menu to record the income then select Yes from the Income Reinvested dialog box to record the number of shares purchased with the dividend or capital gains distribution.

## Selling Securities

To sell shares of a security you hold, select the Sell option for the security type being sold. The Sell screen will be displayed allowing you to select the security being sold and the portfolio from which the security is being sold. Once you have selected the security and portfolio, the total number of shares held in that portfolio will be displayed.

**Hint:** If more than one portfolio is involved in the sale of a security the total sale must be divided into one sale for each portfolio. Alternatively, you may reassign purchase lots into a single portfolio prior to entering the sale.

The sell screen contains the following information.

Table V-4: Sell Screen Data

<b>Data Field</b>	<b>Description</b>
Name	Click the command button to select the name of the security being sold.
Portfolio	Click the command button to select the portfolio that holds the shares to be sold.
Shares Held	Computed - the sum of shares held for the specified security in the specified portfolio. This is the maximum number of shares that may be entered into the shares sold field.
Date Sold	The date you sold the security or option.
Shares Sold	The number of shares or bonds sold.
Gross	The gross (total) amount of the sale. For stocks, this is the selling price times the number of shares.
Commission	The commission paid to a broker or dealer when selling the security.
Sale Method	MI supports IRS approved cost basis accounting methods for First In - First Out, Specific Identification, Single Category Cost Averaging and Double Category Cost Averaging. Select the method that applies to the sale transaction. Note - In the USA, cost averaging methods apply only to mutual funds and once you sell shares using a cost averaging method, all subsequent sales of that fund must use the same method.
Net Amount	Computed - Gross amount less commission.
Cost Basis	Computed - You may override this value. The computed amount is based on the selected Sale Method.
Gain/Loss	Computed - Net amount less cost basis.

## Short Sales

A short sale occurs when someone sells stock that they do not hold or do not want to transfer at the time of the sale. To obtain the stock for the short sale, the seller borrows identical stock from a broker to deliver to the buyer. At some later date, the seller must cover the borrowed shares either by delivering shares that he or she already owns or by buying the stock on the open market.

To record a short sale in MI, select Buy-Sell/Stock-Fund/Sell Short. Once the option has been selected, MI will display the Short Sale screen. The Short Sale screen contains the following information to be filled in at the time of the short sale.

Table V-5: Short Sale Data

<b>Data Field</b>	<b>Description</b>
Stock/Fund	Click the command button to select the name of the stock being sold.
Portfolio	Click the command button to select the portfolio where the short position is to be held.
Short Sale Date	Enter the date the shares were sold short.
Shares Sold	Enter the number of shares sold short.
Gross	Enter the total amount of the short sale.
Commission/Fees	Enter the amount of the sales commission plus any additional fees you had to pay to borrow the stock.
Net	Computed: Gross less Commission/Fees

Once a short position has been opened by entering the information above, it will appear on reports as having a negative value (i.e., open short positions represent a liability since you owe the shorted shares to the broker you borrowed them from).

To cover, or close, a short position select Buy-Sell/Stock-Fund/Cover Short and select the short position to be covered. The Short Sale screen will be displayed containing the information that was entered when the short position was opened. The following data must be entered to cover the short position.

Table V-6: Cover Short Data

<b>Data Field</b>	<b>Description</b>
Cover Date	The date you delivered shares to your broker to cover the borrowed shares.
Cover with New Purchase	Select this command button to if you need to purchase the stock to cover the short position. After clicking this command button fill in the rest of the information on the screen.
Cover with Existing Shares	Select this command button if you are covering the short position with shares you already own. After clicking this button, select the share lots and enter the number of shares from each lot that were delivered to cover the short position. Once you have completed your entries the balance of the information will be filled in by the program and you can click the Save button

Acquisition Date	The date the shares were acquired
Cost	Cost of shares sold
Commission	The purchase commission
Other Cost	Any other cost associated with the purchase of the stock delivered to the broker.
Total Cost	Computed: Sum of the cost, Commission, and other cost
Cost Basis	Computed: This value may not be overridden on short sales.
Gain	Computed: Net less Cost Basis.

---

## **Options**

Put and Call options may be bought and sold in the same way as any other security. The major difference between an option and other securities occurs when the option is exercised.

### ***Exercising a Call***

To exercise a Call option (i.e., option to buy shares), select Call Option / Exercise followed by the call option to be exercised. When the transaction screen is displayed, fill in the Date Exercised and click the Save button. MI will then create a buy transaction screen for the stock purchased using the Call option. The buy screen will be filled out with the number of shares, principal cost (optioned shares times the strike price) and the cost of the option entered into the Other Cost field. If you incur an additional commission when exercising the call option, add it to the buy commission field.

### ***Exercising a Put***

Before exercising a put option (i.e., option to sell shares) you must already hold the shares to be sold. If you do not already own the shares to be sold, select Stock-Buy to record the purchase of the shares to be sold before exercising the option.

To exercise a put option select Put Option/Exercise followed by the option and lot to be exercised. When the security transaction screen is displayed, enter the date the option was exercised. The program will then display the Sell screen containing all relevant information. If you incur an additional commission when exercising the sale, enter the amount in the commission field. In addition, you may choose a sale method other than the default (First In - First Out) to minimize or maximize your gain or loss.

## **VI. Tracking Cash Accounts - Other Assets and Liabilities**

Options in the Savings menu provide the means for recording changes in the value of cash based accounts including savings accounts, money market mutual funds, certificates of deposit and brokerage sweep accounts. Options in the Other A/L menu are provided to record changes in the value of other assets and liabilities. Other assets may include real estate, collectibles, automobiles, household furniture, etc. Liabilities are obligations such as mortgage loans or other notes you owe.

Before recording savings, other asset or liability transactions, the account must be pre-defined using options in the Define menu. Once an account has been defined, transactions may be recorded using the deposit and withdraw options for savings or the increase and decrease options for assets and liabilities.

**Hint:** Income accrued to a cash or other asset account should be entered using the options in the Income menu. Once the income has been entered, a dialog box will be displayed allowing the income to be deposited directly to the cash or asset account. In addition to income, funds may be automatically deposited to and withdrawn from savings (cash) accounts when buying and selling securities.

The Edit-Delete options are provided to allow users to edit or delete transactions. After selecting the Edit-Delete option, select the account followed by the transaction to be edited or deleted. You may then either edit the transaction or click the Delete button to delete it.

**Hint:** To change a deposit to a withdrawal, place a minus sign in front of the amount.

## **VII. Tracking Security Prices**

The Prices menu offers options to maintain current and historic price and volume data for stocks, mutual funds, market indexes, bonds and options. Price and volume data may be entered manually or imported from other data files that are available from a variety of information services. MI is capable of maintaining daily price histories on each security and adjusting the data for stock splits. This price history forms the basis for computations of net worth, return on investment, portfolio valuations, unrealized gains, etc. In fact, the current and historic prices are used in nearly all of the reports produced by MI.

In addition to security price and volume data, MI also maintains a database containing weekly valuations of net worth for each portfolio. The Build Net Worth History option in the Prices menu provides a means of maintaining this database.

## Entering Price and Volume Data

Price and volume data may be entered, edited or deleted by selecting the appropriate Stock, Bond, Put or Call Quotes option. Once the appropriate option has been selected, the Price Quotes screen will be displayed with the following information.

Table VII-1: Manual Price Entry Data

<b>Data Field</b>	<b>Description</b>
Security Name	Click the command button (labeled Stock/Fund, Bond or Option as appropriate) to select the security for which prices are to be entered, edited or deleted. After entering prices for a given security, you may click this button to select another security of the same type (Stock, Bond, etc.).
Quote Date	Enter the quote date for which prices are to be entered, edited or deleted. The date may be entered by typing the date in the field or may be incremented or decremented using the Spin button (up and down arrows). Alternatively, an existing quote for the security may be selected by clicking on the Browse/Edit button.
Volume	Enter the share volume in hundreds.
Open	Enter the market open price. If you do not know the open price you may leave it as zero. In this event it will be assumed to be equal to the low price on stock charts.
High, Low, Last	Enter the market High, Low and Last (Closing) price.
Save	Click the Save button to save any changes you have made to the price record displayed. Note: the save button is not active until an edit has been entered by leaving an edited field.
Delete	Click the Delete button to delete a displayed price record. The delete button is enabled only when an existing price record is displayed. Once a record is deleted, you may undelete it by clicking the UnDelete button.
Cancel button	Click the Cancel button to exit price entry mode after all entries have been saved.

## Importing Price and Volume Data

Current and historic price and volume data is available from a wide variety of sources. These include on-line services such as CompuServe as well as others who provide historic price information on diskette. Formats for several popular services are pre-defined in MI. See [Appendix B](#) information on downloading data from these services.

### *Importing Quotes*

To import price and volume data, select Import from the Prices menu. The Import Quotes screen will be displayed with the following information.

Table VII-2: Import Quotes Screen

Data Field	Description
Import Format	Select the import format that applies to the data file to be imported. <b>Note:</b> Import format names that end in .L have special meaning. See Format Name under <a href="#">Defining Import Formats</a> below.
Quote Year	Some data files express the quote date using only the month and day. For those files, enter the year of the price quotes in the file. The default is the current year.
Beginning and Ending Dates	Enter the date span of the quotes that you want to import. Only those quotes dated between the specified beginning and ending dates will be imported. The default is the current date.
Import File	Enter the file name that contains the price data to be imported. Alternatively, click the select button to display a standard file dialog box where you may select the file to be imported. The default is the last file imported.

Once the above information has been entered, click the Import button. During the import process, MI will display the quotes as they are loaded. When the entire file has been processed, MI will display a message box with the count of records that were actually loaded into the database.

### *Defining Import Formats*

If the format of your price/volume data files is not already supported, you may add a new format definition using one of the Setup options in the Import Quotes screen. MI supports user definition of import formats for both delimited and tabular (text in fixed columns) data files. When adding or editing a format definition, the following information must be provided.

Table VII-3: Import Format Definition Screen

Data Field	Description
Format Name	Enter a descriptive name for the data format.  <b>Special Format for London Exchange Quotes:</b> Format names that end in .L (period followed by capital L) are reserved for importing London Exchange quotes from the GQUOTE service on CompuServe. These quotes are output in units of British pence. Special code has been added to MI to convert these quotes from pence to decimal

pounds. The conversion takes place only when both the Format Name and Ticker Symbol end in .L.

Date Format

The purpose of the Date Format entry is to tell MI how to interpret date character strings so that the program knows which characters refer to the month, day and year. The date format entry is actually a template that uses Ys refer to the year, Ms for the month and Ds for the day. This is best explained by example.

If Dates look like	Enter
10/30/93	MM/DD/YY
10/30/1993	MM/DD/YYYY
30/10/93	DD/MM/YY
30.10.93	DD.MM.YY
931030	YYMMDD
10/30	MM/DD

Starting and Ending Columns (Tabular Formats)

When defining a tabular format you must tell MI the text column in which each data field starts and ends. If a field does not appear in the data file, enter a zero for the starting and ending column for that field.

To determine the starting and ending columns of each field, use an ASCII text editor such as Notepad to examine the file. Make a note of the column in which each data field starts and ends.

Field Numbers (Delimited Formats)

When defining a delimited format you must tell MI number of the field in which each data item appears. If a field does not appear in the data file, enter a zero for the field number.

To determine the field numbers, examine the file using an ASCII text editor. Count from the left starting with one and add one to the field number each time a delimiter character is encountered.

Alternate Close

This entry is used to define an alternate position for the closing price. The alternate close field is used when the number of fields in the record is less than the Total Fields Per Record definition below

Some data files change the format of the data depending on the type of security that is being downloaded. Most commonly, a data service might use a different format for mutual funds than it uses for stocks.

Volume Divided by:

Depending on the data service you use, the share volume may be listed as the exact number of shares, hundreds of shares, thousands of shares, etc. The volume divisor allows you to convert the listed share volume to the volume in hundreds of shares that MI expects.

Reject Invalid Dates

Depending on the time-of-day when a file was downloaded, some data services substitute the time for the date. Normally MI would reject such a record as having an invalid date. However, if you enter N in this field (i.e., do not to reject invalid dates), these records will be accepted by MI and assigned a date equal to the Ending Date.

Total Fields per Record

Enter the number of data fields in a record that does not use

the alternate close. [Hint:](#) the alternate close is used whenever the record contains fewer fields than the total entered here. You can force MI to use the alternate close by entering a number of fields greater than exist in the records to be imported.

ASCII Value of Delimiter

Enter the ASCII decimal value of the character used to separate fields in the record. ASCII decimal values are listed in the back of most DOS manuals.

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[Hint:](#) Some data files that appear to be tabular (text in fixed columns) are actually tab delimited.

## Recording Stock Splits

To record a stock split, select the Record Split option from the Prices menu, select the security type (Stock, Option, etc.) then select the security that split. On the Split Definition screen enter the following information.

Table VII-4: Stock Split Data

<b>Data Field</b>	<b>Description</b>
Split: <u>XXX</u> For: <u>YYY</u>	Enter the ratio of the stock split such as <u>2</u> for <u>1</u> or <u>3</u> for <u>2</u> , etc. Stock dividends are also entered as a ratio. For example, a 10% stock dividend would be entered as <u>1.1</u> for <u>1</u> .
Effective Date of Split.	Enter the date when the stock split became effective.

When a stock split is recorded, MI updates historical stock prices having dates on or before the effective date of the split in line with post split prices. For example, prices occurring on or before the effective date of a 3 for 2 split are multiplied by a factor of 2/3.

If you hold shares of a stock on the effective date of a stock split, MI also adjusts the number of shares held to reflect the stock split. For example, if you hold 100 shares of a stock when it splits 3 for 2, MI will increase the number of shares by a factor of 3/2 (i.e., the 100 shares becomes 150 shares). Share lots that have already been sold are not affected by recording a stock split.

**Hint:** Before recording a stock split you should be sure that your share positions in that stock are correct and reflect your share positions on the effective date of the stock split.

**Warning:** If a stock split occurs after shares have been sold, the return on value report will be computed using pre-split shares at post-split prices. While the starting and ending values will be incorrect, the Return on Value will be correct.

## **Recomputing Historical Net Worth**

MI automatically creates a file containing weekly net worth values for each portfolio. These records are created whenever a portfolio change report or Net Worth chart needs a net worth value that does not already exist in the file. If the value already exists in the file, it is not recomputed thus saving time when running the report or chart.

Occasionally, users will need to enter, edit or delete information that, invalidates the net worth values that were previously computed and stored in the file. These entries include reassignment of assets from one portfolio to another, backdated transactions and corrections to price data.

If any of these conditions occur, the Build Net Worth History option may be used to rebuild the weekly net worth values so that they reflect the current status of entries in your data files.

## VIII. Investment Income

The Income menu provides options for entering and editing income derived from your investments. Income can be in the form of interest, dividends, long and short term capital gains distributions from a mutual fund or other income.

**Hint:** MI automatically tracks capital gains from the purchase and sale of securities. Entry of long and short term capital gains is required only for capital gains distributions from a mutual fund.

The Add Income option is used to enter new investment income records to your database. Select the type of investment from which the income was derived followed by the security or asset. On the Income screen select the type of income from the pulldown menu. Note that the default income type depends on the type of security selected (i.e., dividends for stocks and options, interest for bonds and savings, etc.). After selecting the income type, enter the date the income was received and the amount of income. Click the Save button when you have finished entering the required information.

Each time a new income record is added you will have the option to reinvest the income. If the income was derived from a savings or other asset account the program will display a dialog box asking if you want to deposit the income into the account from which it was derived. If the income was derived from a security then you will have the opportunity to purchase additional shares of the issue using the income or sweep the income into a savings account.

The Edit-Delete Income option is used to edit or delete income that was previously entered. Select the type of investment, the investment and the income record to be edited. **Hint:** If you edit or delete income that was previously swept into a savings account or used to purchase additional shares of a security, you must also edit or delete the corresponding transaction.

## IX. Reports

The MI report generator provides for generation of a variety of customized reports. Where appropriate, each report can be customized by the user for specified time spans and/or combinations of portfolios. All reports may be either printed, viewed on-screen, or exported for use in other programs. When exporting for use in a word processor, use the Plain Text option. When exporting reports for use in a spreadsheet or database application, use the Tab Delimited option.

**Hint:** The File/Setup menu contains options for selecting your default printer, and the font and font size used for reports. If the report text runs together, select a smaller font or font size for report generation. We recommend the font Times New Roman at a pitch of 12 points, if available.

### Net Worth

The Net Worth report provides a detailed listing of the present value of all stocks, bonds, savings, other assets and liabilities for included portfolios. Subtotals are provided for each asset category. In detailed report mode, subtotals are also provided for each included portfolio. In Composite Report mode, all included portfolios are reported as if they were a single portfolio. Stock and bond values are computed using the most recent price data you have entered. If you have not entered any price data for a given stock or bond, its value will be based on your most recent transaction.

### Security Summary

The Security Summary report provides a quick summary of open positions in stocks, bonds and options. For each security the report lists the number of shares held, the average cost per share or strike price, current share price, total cost of shares held, current value and the unrealized gain or loss.

### Holdings by Type

The Holdings by Type report provides a listing of open positions of a specific type. The report may be generated for Stocks-Mutual Funds, Bonds, Options, Savings, Other Assets or Liabilities. The report lists the present value of all open positions for the type selected.

### Income - Gains

#### *Capital Gains*

The Capital Gains report generates a listing of the capital gains and losses realized from sales of securities over a given time period. The report can be generated for either all securities in the selected portfolios or for one security in selected portfolios. You will enter the period of time to be covered by the report.

Gains and losses are marked either short or long term depending on the length of time the shares were held and the long term holding period (see File/Setup). Note that capital gains distributions from mutual funds are also included in this report.

#### *Dividends*

The Dividend report generates a listing of dividend income received from selected portfolios over a user specified time span. The dividends are listed in chronological order for each security. Subtotals are provided for each security and for each included portfolio.

### ***Interest***

The Interest report generates a listing of interest income received from selected portfolios over a user specified time span. Interest income is listed in chronological order for each security. Subtotals are provided for each security and for each portfolio.

### ***Other Income***

The Other Income report generates a listing of the income identified as "other income" when it was entered using one of the Income options. The report can be generated for a user selected time span and any combination of portfolios. Like interest and dividend income, other income is listed in chronological order for each security. Subtotals are provided for each stock, bond, savings account or other asset and for each included portfolio.

### ***Unrealized Gains***

The Unrealized Gains report provides a measure of the gains and losses that would be realized if stocks and bonds were sold at present prices. Gains and losses are marked either short or long term depending on the length of time the shares were held and the long term holding period (see [File/Setup](#)). Long and short term subtotals are provided for each included portfolio. The report can be generated for either all securities in the selected portfolios or for a single security.

## **Transaction Detail**

The Transaction Detail report provides a detailed listing of transactions for a single security, savings account, other asset or liability. From a series of menus, you will select the security type, the specific security or account, and the portfolios to be included in the report. The report then lists all transactions for the selected item during the user specified time span.

### ***Securities Transactions***

For security transactions, the report lists the transaction date, number of shares, share or option cost, commissions and other costs. If the security was sold or the option was exercised the report also lists the gross amount of the sale, sales commission, cost basis and the gain or loss.

### ***Savings - Asset - Liability Transactions***

For savings, other assets and liabilities the Transaction Detail report produces a ledger showing each credit and debit to the account during the specified reporting period along with the balance on each transaction date.

## **Portfolio Change**

The Portfolio Change report lists the net worth, and the monetary and percentage change in net worth of selected portfolios between two user specified dates. MI converts the user specified dates to week-ending dates and either computes or retrieves the net worth for those two dates.

**Note:** Net worth values for the current week are always computed then stored in the Net Worth file. Historic net worth values (for weeks earlier than the current week) are computed only if a net worth value for the specific week is not already available in the Net Worth file. See [Recomputing Historical Net Worth](#) for more information.

## **Price Change**

The Price Change report lists the prices and the monetary and percentage change in prices of all securities between two user specified dates.

## Target - Stop Status

The Target - Stop Status report generates a listing of the status of the current price versus your target and stop loss prices for each security. The listed status is OK if the current price is between the stop loss and target prices. ABOVE TARGET indicates the current price is greater than the target price and BELOW STOP means the current price is less than the stop loss price.

## Theoretical Performance

The Theoretical Performance report computes the annualized yield over the reporting period for all stocks, bonds, options, savings and other assets. The Income Rate column of the report indicates the theoretical income that would be derived from the issue based on the defined annual dividend (for stocks and mutual funds), the coupon rate (for bonds), the interest rate (for savings) and appreciation rate for other assets. The Capital Gain column is based on changes in the price of securities over the period of the report.

**Note:** The performance is theoretical because the income rate is based on defined income rates and not on actual income received.

## Asset Allocation

The three Asset Allocation reports list the allocation of assets either by portfolio, by asset type or by investment objective. Allocation for each class (i.e., portfolio, type or objective) is expressed as the total asset value of the class and the percentage of total assets in the class relative to the total assets of all classes. Each of the three reports may be run for any combination of portfolios.

**Hint:** A graphical representation of asset allocation is available. See [Charts/Asset Allocation](#).

## Return On Investment

The Return On Investment (ROI) report lists the actual return including dividends on share lots that were held **at any time during** the reporting period. If the share lot was sold, the ROI reflects the annualized return during the period the shares were held. If the share lot was not sold, the ROI reflects the return from the purchase date to the ending date of the report.

**Note:** ROI will be listed as zero for share lots that were bought and sold on the same day. ROI will also be listed as zero for any share lots with a present value of zero.

## Return On Value

The Return On Value (ROV) report lists the actual return including dividends on share lots that were held **during the entire** reporting period. The ROV computation differs from the Return On Investment in that ROV includes **only** the income and unrealized capital gains that were derived during the reporting period whereas the ROI report includes income and capital gains over the entire holding period.

**Hint:** While the ROI report shows how an investment has performed since it was purchased, the ROV report shows how an investment has performed over a specific holding period.

## Price List

The Price List report lists quoted prices (open, high, low, last) and volume for a specified security over a selected time period.

**Hint:** Use the Export option to create a file containing prices that can be imported by another

program. The Export option can create a tab delimited text file that can be imported by most spreadsheet and database programs. You may want to use a text editor to remove page and column header lines before importing the prices into your spreadsheet or other application.

### **Master Definitions**

The Master Definitions report lists all defined securities, assets and liabilities showing their type (security type, savings, other asset or liability), account number or security symbol and investment objective.

## X. Charts

### Asset Allocation

Asset allocation charts display the percentage of assets assigned to each category in the form of a pie chart. The assets may be categorized by portfolio, by asset type or by investment objective. The three asset allocation charts are graphical representations of the information available in the Asset Allocation reports.

### Net Worth

The Net Worth chart provides a graphical representation of changes in the value of one or more portfolios over time. Charts are plotted in the form of an area graph. When multiple portfolios are plotted on a single chart, the area graph of each portfolio is stacked on top of the preceding portfolio. The maximum number of portfolios that may be included in a 3 year Net Worth chart is 8.

**Note:** The first time a Net Worth chart is plotted it may take a considerable amount of time to compute and store net worth values for each week to be plotted. Subsequent plotting of Net Worth charts covering the same period will use the stored values and will therefore be displayed much faster.

**Hint:** To see the maximum detail of value changes plot only one portfolio at a time. Note that negative net worth values are not plotted.

## Stock Charts

Options in the Stock Charts menu provide for display of technical analysis charts. Each time you select one of the three options in the Stock Charts menu, the Chart Span dialog box will be displayed allowing you to enter the duration (i.e., 6 months, 1 year, 2 years or 3 years) and the ending date (i.e., date of the last point plotted) of the chart. Charts plotted for durations of longer than 6 months use weekly composite data formed from daily quotes. A weekly composite quote is formed by extracting opening price, highest high, lowest low and the closing price for the week.

The Options button on the Chart Span dialog box provides access to additional chart display options as shown below. Once set, the option settings remain in effect until changed.

Table X-1: Chart Options Dialog

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Option	Description
Candlestick Chart	This option enables plotting of technical analysis charts in the candlestick format instead of the default bar chart format. Candlestick charts are useful in recognizing patterns of opening versus closing prices. When the opening price is less than the closing, the price range between the opening and closing price is displayed as an open box. Conversely, when the opening price is greater than the closing price the range is displayed as a filled or solid box. <b>Hint:</b> if you imported or entered data that lacks valid opening prices the candlestick chart will not produce valid results on 6 month charts.
Show Price Grid	When enabled, a horizontal price grid and vertical date grid is drawn on the chart. You may want to disable these options if you are planning to print the chart on a non-color printer.
Show Date Grid	
Show Target/Stop Loss Prices	When enabled, horizontal lines showing the defined target price and stop loss price are plotted on the chart. The lines are plotted only when they are within the range of prices plotted on the chart. The Target line is plotted in green and the Stop Loss line is plotted in red.
Use Log Scale for Prices	When enabled, the price portion of the chart will be plotted using a logarithmic scale instead of the default linear scale. Logarithmic scaling has the advantage of showing equal percentage price moves with the same vertical change regardless of the actual price.

---

After entering the chart span and setting any display options, you will select the security or in the case of the Relative Strength and Correlation charts the two securities to be plotted.

Along the bottom of each stock chart there are a series of command buttons that provide access to technical indicators and allow plotting of another security using the same chart span and option settings. Refer to the [Technical Indicators](#) section for a discussion of interpretation of technical indicators.

The function of the command buttons are described below.

Table X-2: Stock Chart Command Buttons

Button	Description
New	After completion of your analysis, click the New button to select another security to be plotted.
MA	Plots a simple moving average based on the user defined number of weeks.
Exp MA	Plots an exponential moving average based on the user defined point weight.
Fit	Plots a best fit 1st to 9th order polynomial curve. The "order" (1 to 9) of the polynomial is user defined. A first order polynomial is a straight line. Curvature and fit precision increase as the order of the polynomial increases.
OBV	Plots On-Balance Volume.
MACD	Plots Moving Average Convergence Divergence based on the user defined fast and slow point weights.
RSI	Plots Wilders Relative Strength Index using a user defined period.
%KD	Plots stochastic oscillator (%K) and the slow stochastic oscillator (%D) using a user defined period.
Clear	Clears the bottom chart of volume or plotted oscillator data.
Vol	Re-plots the volume in the bottom chart

### ***Single Issue***

The Single Issue chart displays the industry standard Price/Volume chart or, optionally, a candlestick chart for one security at a time.

The Price/Volume chart is the basic chart shown in most newspapers. It provides a graphic display of the open, high, low and closing prices, and trading volume. The price portion of the chart is scaled to provide the maximum vertical distribution of prices. That is, it is vertically stretched to just cover the range of prices to be displayed.

### ***Relative Performance***

The Relative Performance chart compares the price movements of two different securities. After entering chart duration and any option changes, select the two securities to be charted together. Prices for the first security you chose will be displayed on the left axis and prices of the second security will be displayed on the right axis and are color keyed to the plotted prices. The relative performance is plotted at the bottom of the chart as an area plot. A rising line indicates that the primary stock (the first stock selected) is performing better than its counterpart.

Relative Performance, also known as relative strength or ratio cantor is most commonly used to compare a stock to a known index. The best index to use for a given stock is an index that is well correlated with the stock to be examined. Therefore, when analyzing a semiconductor stock it would be best to compare it to a Tech stock index or the NASDAQ index which is heavily weighted in technology stocks.

The common interpretation of Relative Performance is to buy stocks that are outperforming their market sectors and sell stocks when they are underperforming their market sectors.

### **Correlation**

Correlation is the statistical means of determining whether the prices of one security move in direct relation to the prices of a market index or another security. After entering chart duration and any option changes, select the two securities to be used in the correlation analysis.

Correlation analysis operates by plotting a scatter-gram of the closing prices of the first security (measured on the y-axis) against the closing prices of the other security or index (measured on the x-axis). Once the points have been plotted, the straight line that best fits the points is computed and plotted. The line is computed using a least squares linear regression. The program displays the formula for the plotted line, the standard deviation (the standard error between plotted prices and the line), and the correlation coefficient. The mathematical formulation of these items is shown below.

Least squares linear regression line is defined by:  $Y = B + AX$  where:

$$A = (N * \text{Sum}(X_i * Y_i) - \text{Sum}(X_i) * \text{Sum}(Y_i)) / (N * \text{Sum}(X_i^2) - \text{Sum}(X_i)^2)$$
$$B = (\text{Sum}(Y_i) / N) - A * (\text{Sum}(X_i) / N)$$

The standard deviation is given as S where:

$$S = \text{Sqrt}((\text{Sum}(Y_i - (B + A * X_i))^2) / (N - 2))$$

The correlation coefficient "R" is given by:

$$R = (N * \text{Sum}(X_i * Y_i) - \text{Sum}(X_i) * \text{Sum}(Y_i)) / \text{Sqrt}((\text{Sum}(X_i - \text{Mean}(X))^2 * (\text{Sum}(Y_i - \text{Mean}(Y))^2))$$

Correlation coefficients range from zero to plus or minus one and provide an indication of how good the price relationship is between the two securities. Values near plus or minus one indicate that there is a strong relationship between the price movements of the two securities. Values closer to zero (-0.75 to +0.75) indicate poor correlation. If the coefficient is negative, it means that a negative price relationship exists (a price increase in one yields a corresponding price decrease in the other).

After plotting the scatter-gram, a price chart of the first selected security is plotted. The solid fill area plotted on the price chart represents the solution to the least squares regression -- plus or minus one standard deviation (e.g., if the two securities were perfectly correlated then the solid fill area would be centered on the closing prices of the first security).

The Correlation Chart is most useful when there is a high degree of interdependence between two securities (i.e., correlation coefficient is greater than 0.9 or less than -0.9). Under these circumstances, a sudden deviation of the price outside the standard error area may indicate a change of market sentiment towards the stock. Such changes in sentiment are often the result of an unexpected change in earnings, a buy or sell recommendation from a major broker, takeover rumors, etc. It is always a signal to be wary.

## **A. Upgrading from OPPM**

As compared to OPPM, Master Investor provides expanded capabilities for tracking investment objectives, cash accounts, bonds and options. Because OPPM does not contain all of the data needed to support these expanded features, manual editing is needed after conversion of OPPM files. The following paragraphs describe information that must be edited or entered into MI after converting OPPM files.

### **Investment Objectives**

Since specification of investment objectives was not available in OPPM, the investment objective is undefined for all transferred securities, savings, other assets and liabilities. To assign investment objectives to assets transferred from OPPM, select the asset type in the define menu then select the asset (i.e., stock, bond, etc.). Select an investment objective by clicking the Select button next to the investment objective field. Investment objectives should be defined for all stocks, bonds, savings and other assets transferred from OPPM.

### **Bonds**

MI requires that the face value of each bond be entered as part of the bond definition. If you have transferred bonds from OPPM, select the Bonds option in the Define menu. Select a bond in the list and enter the face value of the bond on the Bond definition screen. Repeat this for all bonds transferred from OPPM.

Under OPPM you may have entered false purchase quantities for bonds to compensate for prices which are quoted as a percentage of face value. For example, if you purchased a \$1000.00 bond, you may have entered the purchase quantity as 10 so that the net worth report would show the value of the bond as \$1000 with a quoted price of 100%. If you did enter false purchase quantities then you will need to correct them manually. Purchase quantities may be edited by selecting Bond/Edit from the Buy-Sell menu.

### **Savings, Other Assets and Liabilities**

Whereas OPPM maintained a single record containing only the present value of savings, other assets and liabilities, MI maintains a complete transaction history for these items. When savings, other assets and liabilities are transferred from OPPM, MI creates a single record each account. The record contains the present value from OPPM and carries the date the data was transferred from OPPM. You may leave these records alone and simply enter deposits and withdrawals beginning after the last transaction entered into OPPM.

Optionally, you may choose to enter old transactions (i.e., deposits, withdrawals, etc.) back to some date such as the beginning of the year. If you do enter old transactions, you will need to edit the record created during the transfer. When editing the record, be sure to change the date to one before the transactions to be entered and the amount to reflect the balance as of the first of the old transactions to be entered.

### **Options**

Options transferred from OPPM are coded as stocks giving them the same functionality as they had in OPPM. To take advantage of the improved option tracking capability of MI, options that appear under the Define/Stocks menu should be deleted and re-entered as either a put or call option as appropriate. We recommend that this be done only for unexpired options that have not

been exercised.

## B. Downloading Stock Quotes

MI imports stock, bond and mutual fund quotes downloaded from Prodigy, CompuServe, GENie Dow Jones News Retrieval Service, America Online, Farpoint BBS, Quote.Com and Just Data. The program has specific requirements for download file formats and contents that are described in the following paragraphs.

### CompuServe CIM (CompuServe Information Manager) Quotes

Current stock quotes can be obtained from CompuServe when using the CompuServe Information Manager (DosCim or WinCIM) by selecting the Quotes option under the Services menu. The CompuServe software permits you to pre-define the ticker symbols for the quotes you want to retrieve. Once you have defined a group of ticker symbols, select "Quotes" followed by "Get All" to display the current quotes for all pre-defined issues. To download these quotes to your hard disk select "SAVE" or "SAVE AS" under the File menu.

Make a note of the directory in which you save the file as well as the file name. You will need to enter this information to import the saved data. We recommend that you use the same file name each time you download quotes and select the overwrite option to replace the previously downloaded file.

**WARNING:** Data downloaded using the CIM Quotes option often contains an update time and not an update date. Records that do not contain an update date are assumed to be dated on the ending date of the import time span.

### CompuServe Weekly Quotes & UK Prices

CompuServe also provides historical weekly composite quotes which, though a premium service with a per quote plus time charge. This historical information provides an excellent means of back-filling prices for an issue that you have recently begun tracking.

To obtain prices go to the "Issue Pricing History" section of CompuServe (GO PRICES). Once you enter this section, set your communications program to begin logging data (Press F5 in DosCim). You will be prompted as follows:

Issue: (Enter the ticker you want historical prices for)  
(D)aily, (W)eekly, (M)onthly ?: (Enter D for daily price history)

Next you will be asked to enter the "starting date or number of periods from the last pricing data." Enter "5" to get the most recent 5 days of data. After the data has been displayed, you will be prompted for another issue. **WARNING:** if you choose to capture historical quotes for another stock, the time span or number of periods you previously entered will stay in effect. You will not be prompted to reenter this data.

Once you have acquired the desired prices, signal your communications program to close the log file and type "/EXIT" to leave the Issue Pricing History section.

This procedure may also be used to download UK prices (GO UKPRICES). The primary difference is that the UKPRICES area of CompuServe uses the SEDOL Number instead of a ticker symbol. **Note:** In MI you must enter S followed by the SEDOL Number in the ticker symbol field. For example, the SEDOL Number for British Telecom is 0141288. In MI it would be entered as: S0141288.

## Prodigy

Current quotes can be obtained from the Prodigy Quote Track page (Jump - Quote Track). Within quote track, you must establish one or more "Tracks" containing the ticker symbols you want to download. Prodigy's tracks are limited to 15 issues per track. If you are tracking more than 15 issues we suggest using the Hard Disk track. The hard disk track is limited to 50 issues per track. Consult Prodigy's help screens for more information on establishing tracks.

After establishing your track(s), select the report setup option. Setup your report options to output the report to a "delimited file" (\*.CSV format). If you will be importing quotes from several Prodigy sessions at one time, select the append option in the report setup. Alternatively, if you will be importing quotes each time you download, select the overwrite option.

**Note:** When downloading quotes from Prodigy, be sure to download "CURRENT QUOTES" and NOT "CLOSING QUOTES."

Prodigy permits you to save report setups for either a single session or for all future sessions. To save time in future Prodigy sessions, we suggest that you make this setup permanent for all Prodigy sessions. Once your quote track and report setup has been saved, it is not necessary to modify these for future sessions. To download quotes, open your Quote Track (FILE MENU) and run the Report option (FILE MENU).

## GENie

Closing stock and mutual fund quotes can be obtained using GENie's closing quotes page. Type "M270;1" at any GENie page to go to the closing quotes page. Before selecting the option to retrieve closing quotes, set your communications program to begin logging output to a file. Enter up to 30 ticker symbols of the stocks and mutual funds you want to retrieve. After retrieving up to 30 quotes the "Enter Ticker Symbol(s)" prompt will reappear and you may enter additional ticker symbols until you have retrieved quotes for all of the stocks and mutual funds you are tracking. Once you have retrieved all of your closing quotes, set your modem communications program to stop logging.

**Hint:** depending on your modem communications program, much of this process can be automated through the use of scripts or command files. Check the documentation of your communications program for details.

The ticker symbols for stocks and mutual funds in MI must match the ticker symbol, type and class shown in the GENie closing quotes. This is entered into the ticker symbol field in MI as:

GENie Ticker Symbol <space> GENie Type <space> GENie Class

Examples of stocks are:

---

<b>GENie</b>	<b>Tick Description</b>	<b>TP C</b>	<b>MI Ticker</b>
GM	GENERAL MTRS CORP	GM	GM
GM	GENERAL MTRS CORP	PR B	GM PR B
GM	GENERAL MTRS CORP	PR P	GM PR P

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Note that all mutual funds have a type of "X". This type should be ignored and NOT included in the MI ticker symbol field:

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GENie	Tick Description	TP C	MI Ticker
FMAGX	FIDELITY MAGELLAN FD	X	FMAGX
JANSX	JANUS FD INC	X	JANSX

### Dow Jones News Retrieval Service (DJNRS)

MI supports quotes retrieved from Dow Jones News Retrieval's current quotes (//CQ), historical quotes (//HQ) and Dow Jones Averages (//DJA) databases.

//HQ: The historical quotes database allows you to retrieve up to one year's worth of daily quotes for stocks. After selecting the HQ database set your communications program to begin logging to a new file. Enter the symbol of the stock followed by "P1" (e.g., IBM P1). DJNRS will display 12 days of quotes for the selected stock. Each time you press the return key, the preceding 12 days of quotes will be displayed until a full year's of quotes have been displayed. After you have retrieved all the quotes you are interested in, set your communications program to stop logging. **Hint:** you may save historical quotes for multiple stocks to a single log file.

//CQ: The current quotes database allows you to retrieve current quotes for stocks and mutual funds. After selecting the CQ database set your communications program to begin logging to a new file. Enter the symbols of the stock or mutual funds you want to retrieve. You may enter up to 5 symbols at a time separated by a space. DJNRS will display current quotes for each selected security. You may enter more symbols as needed. After you have retrieved all the current quotes you are interested in, set your communications program to stop logging.

**Warning:** do not save current quotes for multiple dates in the same log file. Since the DJNRS CQ database does not display the date, MI is unable to distinguish the date that the quote applies to.

//DJA: The Dow Jones Averages database allows you to retrieve up to one year's worth of daily quotes for the various Dow Jones Averages. After selecting the DJA database set your communications program to begin logging to a new file. Enter the symbol of the average you want to retrieve quotes for followed by "P1" (e.g., DJI P1). DJNRS will display 12 days of quotes for the selected average. Each time you press the return key, the preceding 12 days of quotes will be displayed until a full year's of quotes have been displayed. After you have retrieved all the quotes for a selected Dow Jones Average, set your communications program to stop logging. **Warning:** do not save different averages to the same log file. MI reduces volumes of Dow Jones Averages by a factor of 10. When loaded, DJA volumes are in units of thousands instead of hundreds as shown in the DJA download file.

### America Online (AOL)

Current or closing stock and mutual fund quotes can be obtained using the Display Portfolio feature of America Online for Windows. After signing onto America Online, click on Go To in the Main menu (top of screen) then click on Stock Quotes.

If you have not already entered ticker symbols for the issues you wish to track, enter each ticker symbol then click on Add to Portfolio. The ticker symbols you add to your portfolio are retained for all future sessions so you only need to enter them once.

To display current prices for issues in your AOL portfolio, click on Display Portfolio. Next click on Save Portfolio and enter a file name (e.g., PORT.TXT) where the prices will be saved. By

default, the file will be saved in the \WAOL subdirectory. When you import the quotes you will need to enter the full name of the file (e.g., C:\WAOL\PORT.TXT).

Quotes downloaded in this way do not contain volume or daily high/low data and as such, the volume loaded into MI will be set to zero and the high/low will be set equal to the current or closing quote (depending on the time of the download). The date of the data is assumed to be the import ending date.

### **PRN-5 Format (Farpoint BBS)**

The PRN-5 format is an ASCII -- comma delimited format having records of the following form:

date,high,low,close,volume

where the date is in the form "YYMMDD" and prices are in decimal format. For example, a record for 30 October 1993 would be written:

931030,27.5,26.125,27.25,30643

All records in a given PRN-5 file are for a single issue (ticker symbol). The Farpoint BBS provides free (except for the cost of the phone call) downloading of historical stock quotes in PRN-5 format. Data is available for most stocks listed on US stock exchanges. When downloading from this service you will download one file for each stock using one of several supported file transfer protocols such as XModem. The phone number for Farpoint BBS is (312) 274- 6128.

### **PRN-7 Format (Quote.Com single issue historical data).**

The PRN-7 format is an ASCII -- comma delimited format having records of the following form:

date,open,high,low,close,volume,open interest

where the date is in the form "YYMMDD" and prices are in decimal format. For example, a record for 30 October 1993 would be written:

931030,26.750,27.500,26.125,27.250,30643,0

Mutual fund data is written as

date,NAV (net asset value)

Quotes in this form are available via Internet FTP from Quote.Com (there is a charge for each file downloaded). For information about this service send EMail to: [support@quote.com](mailto:support@quote.com).

### **PRN-8 Format (Quote.Com EMail)**

The PRN-8 format is an ASCII -- comma delimited format having records of the following form:

symbol,date,open,high,low,close,volume,open interest

where the date is in the form "YYMMDD" and prices are in decimal format. For example, a record for 30 October 1993 would be written:

GE,931030,26.750,27.500,26.125,27.250,30643,0

Mutual fund data is written as

symbol,date,NAV (net asset value)

Quotes in this form are available via Internet EMail and FTP from Quote.Com. For information about this service send EMail to: [support@quote.com](mailto:support@quote.com).

### **Just Data (Australian Stock Exchange)**

MI will import daily stock quotes downloaded from "Just Data" data service in Australia (Just Data, 26 Bellevue Street, Highgate Hill, Q 4101, Phone 008 777 972 or (07) 899 2148).

Downloaded file data should be in the following form:

ad19900814cnAdtSdbJDvn1.0	Header / date record
cABCs1f1050h110011050a1100v65000	Stock price records
cCBAs1f990h1020l980a1000v1022	
cDBAs1z2200v45000	
yUGa2220.7	Index price records

The above format is exactly as the data is downloaded from Just Data and should not be modified by any of Just Data's available data conversion utilities. If multiple days of data are contained in a single file, the price records for each day must be separated by a Header/Date record.

## C. OWL Product Information

Otto-Williams Ltd. (OWL) is committed to producing intuitive, easy to use, software solutions that meet the challenges of today's fast paced world. OWL programs have been rated among the best software available by major publications including *PC World*, *Computer Novice* and the *Financial Times*.

No more deciphering complex programs and plowing through confusing software manuals. At OWL, we listen to our customers and design our programs to be easy to use with: simple menus, context sensitive help, on-line users guides, and sample data where needed, to help you get started fast. Our programs allow you to be fully operational within minutes.

### **OWL Personal Portfolio Manager (OPPM) for DOS**

Rated the best portfolio management software by the *Financial Times* (10/10/92), OPPM fully integrates investment record keeping with stock charting and technical analysis of stock price trends. Technical analysis charts include: price volume, relative strength, correlation, on-balance volume, Wilder's RSI, RVI, stochastics, moving averages and trend analysis. OPPM supports all IRS approved cost basis accounting methods. Sixteen reports include: net worth, capital gains, dividend and interest income, return on investment, unrealized gains, and many more. The report generator lets you create reports for any combination of up to 500 portfolios.

**Requirements:** DOS 2.2; 640K; Hard Disk; CGA, EGA, VGA or Hercules graphics.

### **OWL Portfolio Price Loader (OPPL) for DOS**

A companion to OPPM, OWL's Portfolio Price Loader automatically updates OPPM's database using current or historical price quotes obtained from on-line data services. OPPL gives you more time to analyze your investments by eliminating the need to search through newspapers for current price quotes and manually enter the data. Version 2.3 will read and automatically load stock and mutual fund prices that have been downloaded from: CompuServe (current, historical & U.K. Quotes), America Online, Prodigy (Quote Track), GENie, Dow Jones News Retrieval Service (Current Quotes, Historical Quotes and Dow Jones Averages databases), Farpoint BBS and Just Data (Australia Quotes). **Requirements:** OWL Personal Portfolio Manager Version 4.0 or above and Hard Disk.

### **OWL Basic Bookkeeping (BBK) for DOS or Windows**

BBK was rated among the Best of Business Shareware by *PC World* magazine (Feb., 1994). BBK provides organized and accurate accounting using the "single-entry" bookkeeping method recommended by the IRS. This method is easy to use and especially suited for small businesses and individuals. BBK helps you manage your bottom line by giving you instant access to up-to-the-minute reports showing your income, expenses, profits and losses. You don't need to be an accountant to use BBK. By spending just a few minutes a week with BBK, you can dramatically reduce your accounting costs. Instead of a shoe box full of receipts, you can give your accountant comprehensive reports that will save his or her time and your money. BBK can handle up to 1000 different expense types and supports both calendar and fiscal year accounting.

**Requirements:** DOS 2.2, 512K, Hard Disk. Windows version requires MS Windows 3.1 or above.

### **OWL Automated Sales and Invoicing System (OASIS)**

OASIS is a complete sales management system that includes: invoicing, automated billing, customer correspondence, mailing list management, and sales tracking. Invoices and bills can be printed on plain paper or your own letterhead. OASIS also provides complete capabilities for

printing mailing labels and addressing envelopes. When printing mailing labels OASIS lets you specify the label row and column where printing should start. This saves you money by letting you use partially used sheets of labels that would otherwise be thrown away. OASIS includes options to automatically print product related text (e.g., installation instructions) and product license numbers directly on invoices. OASIS also exports customer mailing lists in mail merge format for use with many word processors. **Requirements:** DOS 3.3, 640K, Hard Disk

### **Teamwork Information Exchange (TIE)**

TIE is a multi-user LAN compatible system designed to improve inter-group communications, time management, work flow, and productivity. Features automatic meeting scheduling (no more phone tag), task management (paperless task assignment, progress, status and performance reporting), E-Mail with automatic message generation, personal schedule and To Do list management. Easy to setup and use, TIE lets you and your team manage time better by giving you a "power tool" that fits perfectly into your existing management toolbox. TIE is compatible with most client server PC based LAN's. **Requirements:** DOS 3.3, 640K conventional memory, 512K LIM 4.0 compatible EMS Memory, DOS compatible network software

Please call or write for current prices and availability.

