stocks

COLLABORATORS

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stocks

1.1 Stocks V3.04a Help

(c) Copyright 1991, 1992, 1993, 1994 Bug Free Development

Stocks is a powerful technical analysis tool used for charting stock
price and volume data. Numerous mathematical formulas can be applied
to the data in the form of
Studies
. These studies are plotted with the
stock price/volume data to allow you to forecast future price
movements from previous actions.

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1.2 Stocks: Copyright, License and Disclaimer

The Stocks program and its documentation are (c) Copyright 1991, ↩
    1992,
1993, 1994 Bug Free Development All rights reserved.

Registration

1.3 Stocks: Features

The Stocks program is extremely fast while supporting an extensive feature list:

* Displays Multiple Studies in a Single Window

* Daily, Weekly, and Monthly period ranges

* Traditional Bar Charts using High, Low, and Close

* Japanese Candlesticks using High, Low, Open, and Close

* Point & Figure Three-box Reversal Charts with Customizable Range Selections for Box Definitions

* Configurable Trading Rules that Generate Buy/Sell Signals

* Compare Historical Data with Trading Rules to Evaluate Effectiveness

* Plots Company Earnings

* Arithmetic and Log Scales for Price and Volume

* Automatically Scales Price and Volume Legend to Fit Window

* Support for Displays on Workbench and a Custom Public Screen

* Prints Numerous Studies on a Single Page

* Stock Lists

* Configurable Display and Print Options

* Support for HP LaserJet, Postscript Printers, and AmigaDOS PrintGfx Device Drivers

* On-Line HyperText Help with Context Sensitive Menu Help

* ASCII Data Files for Easy Maintenance

* Data Price Values Support Both Fractional and Decimal
  Representation for US and International Currencies

* ARexx Macro Support

* Configurable commission formulas using ARexx script

1.4 Stocks: Introduction

The Stocks program processes historical stock data formatted as ←
ASCII
text files. The use of ASCII representation of data allows you to
easily enter or correct your price/volume data. In addition to
price/volume data, the Stocks program supports stock split, trailing
four quarter earnings plots and allows you to customize your
environment using both an ASCII configuration file for system defaults
and configuration changes on a per stock basis. See the section on

Configuration File
for more information on configuring your system.
Data can be charted using periods of a single day, weekly summaries
and monthly summaries.

The stocks program may be invoked from the WorkBench or by using the
CLI by specifying an operation and a stock data file.

For example:

stocks -d cbm

would instruct the Stocks program to display the price/volume data for
the   stock   located in file CBM in the directory pointed to by

Default Path
.   See the section
Command Line Options
for a complete
description of all the command line options.

1.5 Stocks: Installation

To use the Stocks program your system must have the following ←
minimum
system requirements:

an Amiga 500,600,1200,2000,2500,3000,4000 with a color display.

AmigaDos 2.0+

512 Kilobytes Memory

1 Floppy Disk

Installation instructions:

copy stocks program to C:

copy the default configuration file stocks.config to the S: directory.

copy #?.rexx to the REXX: directory.

copy #?.guide#? help texts to a directory specified by the environmental variable AmigaGuide/Path.

After you have copied the program and help file, edit the stocks.config for your machine and preferences. See the Section on

                Configuration File
                 for a complete description of configuration options.

1.6 Stocks: Command Line Options

                If the stocks program is executed from the CLI. The format ↩
                    for the
command is:

STOCKS [operation] [options] [stock file]

    or

STOCKS [operation] [options] -L

An operation and stock filename or the filename of a list of stocks must be specified when the Stocks program is invoked. The options are well optional.

The following values are supported:

```
 Operation Description
 --------- -----------

 -C       Check the current period's stock price/volume against
          buy/sell conditions.

 -D       Display stock price/volume/studies in a window.

 -F       Generate a Point-and-Figure chart for the specified stock
          file.

 -P       Plot the stock chart to the printer.

 -T       Trade based on buy/sell conditions against all historical
```

                data in the stock file.

 Option Description
 ------   -----------

 -L   Plot all the stocks specified in a
                list file
                 .

 -M   Plot a monthly summary of the stock price/volume/studies.

 -W   Plot a weekly summary of the stock price/volume/studies.

The default period for charting data is days. To chart using weekly or
monthly summary specify -W or -M command options or use the
                Weekly
                 or

                Monthly
                 menu options.

1.7 Stocks: List File

A list file is an ASCII file containing a set of stock files that are
to be displayed. Each stock data filename is contained on a separate
line. If no list filename is specified on the command line, the
default list file (STOCKS.LIST) located in the directory specified by
the default directory is used.

The command syntax for specifying a list file other than the default is:

-L=filename

where

filename is the name of a file containing a list of stock filenames to
display, print or process.

An example of a list file is:

aapl dec cbm ibm msft

where aapl, dec, cbm, ibm, and msft are the names of stock data files.

1.8 Stocks: Menus

                The Stocks program sports a standard Amiga menu interface. ←
                 Holding the
right mouse button while the pointer is in the Stocks display window
changes the title bar to a menu strip.

The following table describes the menu structure for the Stocks program:

Program

        About...

        Open...

        Close

        Preferences...

        Printer Setup...

        Print

        Quit

Chart

        Daily

        Weekly

        Monthly

        Point & Figure

        Candlesticks

        Earnings

        Trading

        Price Scale

        Volume Scale

Studies

        AVG A

        AVG B

        AVG C

        GANN

        MACD

        PTPS

        PERCENT R

        RSI

        STOCHASTICS

```
                TREND LINE

                VPT

                AVG VOLUME
               ARexx

                Edit Function Keys...

                Execute Script...
```

1.9   Stocks: Menu/ Program/ About...

Selecting the About menu choice brings up a dialog box ←
                containing the
version of the Stocks program, a copyright notice and registration
information.

If you are using the evaluation version of the program, that fact is
stated in the dialog box along with the following gadgets: AGREE,
REGISTRATION,   and   CANCEL.   If   you   don't   agree   to   the

                license and warranty
                information outlined in this document, press
CANCEL and don't use the program. If you do agree with the license and
warranty press AGREE to continue.

If you have registered and need to enter the registration information,
select REGISTRATION. This will open another dialog box containing a
form to enter the registration information. Registration requires that
you agree to the license and warranty and that you pay a software
license fee. See the section on
                Registration
                 for more information on
how to register.

If you are a registered user, the dialog box registration information
contains your name and serial number.

1.10   Stocks: Menu/ Program/ Open...

Selecting the Open menu choice brings up a file requester dialog box.
Select the directory and stock filename to be displayed.

The keyboard shortcut key for OPEN is to press right-Amiga-O.

1.11   Stocks: Menu/ Program/ Close

Selecting   the   Close   menu   performs   the   same   action as ←
              pressing the
Close-Window-Gadget,   that   is   it   closes the currently displayed stock
chart. If   you   are   displaying a single stock, the Stocks program will
exit when you close the display window.

If you are displaying a list of stocks, the next stock file in the
list is displayed. To exit the program while displaying a list of
stocks, select
              Quit
               from the Program menu.

The keyboard shortcut key for CLOSE is to press 'C' or right-Amiga-C.

1.12 Stocks: Menu/ Program/ Preferences

The   Preferences   menu   choice   has   a   number of sub-menu choices ←
              . Each
sub-menu   brings   up   a dialog box allowing you to configure the default
operating parameters for the sub-menu topic. This is a convenient way
to   modify   the   configuration   information   found   in   the

              Configuration File
               using a graphical interface.

The sub-menu items are:

```
 --------------------
 Program...
 Chart...
 --------------------
 Moving Average A...
 Moving Average B...
 Moving Average C...
 --------------------
 Gann...
 MACD...
 Parabolic...
 Percent R...
 RSI...
 Stochastics...
 Trend Lines...
 --------------------
 Average Volume...
 Volume Price Trend...
 --------------------
```

The Program... sub-menu selection allows you to configure information
about the
              Default Path
              ,
              Screen Colors
              ,

                    Interlace

                    ,
                    Resolution

                    ,
                    Type

                    ,

                    Window Size

                    ,
                    Trading Rules

                    .

The   Chart...   sub-menu   item   selection   allows   you   to configure
information about
                    Candlesticks

                    ,
                    Earnings

                    ,
                    Trading

                    ,
                    Price Scale
                    , and

                    Volume Scale
                    The   other   sub-menu   selections   allows   you   to   configure ←
                        information
about the various
                    Studies
                    .

Each   dialog box   contains gadgets for SAVE, USE, or CANCEL. Selecting
SAVE   causes   the configuration to be written to the STOCKS.CONFIG file.
The   USE   selection   allows you to use the current configuration without
modifying   the   permanent   configuration   stored   in STOCKS.CONFIG.
Selecting CANCEL causes any changes made to be ignored.

1.13 Stocks: Menu/ Program/ Printer Setup

                    The   Printer   Setup menu choice opens a dialog box   ←
                        containing the
printer destination and a print driver. You can select whether chart
printouts   go   directly to the PAR: device or to a file. Selecting File
allows you to enter a filename. The default filename is 'T:stocks.plot'.

If   the   print   driver choice is "SYSTEM DEFAULT DRIVER", additional
configuration   parameters can be selected. These additional choice
include
                    Aspect

                    ,
                    Center
                    , and
                    Density
                    .

You can also setup the printer page size. In the dialog box are entries
for the number of dots per inch in both X and Y directions and page
width and height allow you complete control over the print output.
The page width and height is specified in 1/100ths of an inch.

The dialog box also contains gadgets for SAVE, USE, or CANCEL.
Selecting SAVE causes the configuration to be written to the
STOCKS.CONFIG file. The USE selection allows you to use the current
configuration without modifying the permanent configuration stored in
STOCKS.CONFIG. Selecting CANCEL causes any changes made to be ignored.

1.14 Stocks: Menu/ Program/ Print

Choosing the Print menu selection causes the currently displayed stock
and selected studies to be printed to the PAR: device or a file.

When the Stocks program is printing a file, a progress window is
displayed.   You   can   terminate   a   printout   by   pressing   the
Close-Window-Gadget on the progress display.

The keyboard shortcut key for PRINT is to press 'P' or right-Amiga-P.

1.15 Stocks: Menu/ Program/ Quit

Selecting the Quit menu choice causes the Stocks program to exit. Quit
will terminate the display of a list file.

The keyboard shortcut key for QUIT is to press 'Q' or right-Amiga-Q.

1.16 Stocks: Menu/ Chart/ Daily

                Selecting Daily causes the Stocks program to chart stock data ←
                    using a
period of one day. If the
                data file
                 contains weekly or monthly summary
data, it is ignored. Only daily data is displayed.

The keyboard shortcut key for DAILY is to press 'D' or right-Amiga-D.

1.17 Stocks: Menu/ Chart/ Weekly

          Selecting Weekly causes the Stocks program to chart stock data ←
                using a
period of one week. If the
                data file
                 contains monthly summary data, it
is ignored. Daily data included in the file is tallied by week and is
combined with the weekly information when displayed.

The keyboard shortcut key for WEEKLY is to press 'W' or right-Amiga-W.

1.18   Stocks: Menu/ Chart/ Monthly

Selecting Monthly causes the Stocks program to chart stock data using
a period of one month. Daily and weekly data included in the file are
tallied by month and are combined with the monthly information when
displayed.

The keyboard shortcut key for MONTHLY is to press 'M' or right-Amiga-M.

1.19   Stocks: Menu/ Chart/ Point & Figure

          The Point and Figure menu selection allows you to plot P&F ←
                studies.
This type of study is among the oldest forms of charting used. It is
also called the three-box reversal system. X's are plotted while the
stock is making upward price progress and O's are used during a down
trend. See the studies section on
                Point and Figure
                 for more information.

The keyboard shortcut key for POINT & FIGURE is to press 'F'.

1.20   Stocks: Menu/ Chart/ Candlesticks

          The Candlesticks menu option toggles between traditional bar ←
                charting
and Japanese Candlesticks. If the Candlestick menu option is checked,
Japanese Candlestick charting is enabled. To enable traditional bar
charting, click on the Candlestick menu option to deselect Candlesticks.

          Candlesticks

1.21   Stocks: Menu/ Chart/ Earnings

The Earnings menu selection allows you to choose whether the stock
earnings data is plotted with price information. If enabled, the
Stocks program will calculate the average price to earnings ratio (PE)
for all the entered earnings data using a weighted average formula.
The Stocks program scales earnings by multiplying the earnings per
share value by the average PE. These values are plotted as dots with a
line connecting them. The actual earnings per share is printed at the
bottom of the price window. Losses are represented by plotting the dot
at the bottom of the window. Under some circumstances, the range of
earnings is greater than the size of the price scale. Under that case,
the highest or lowest earnings are plotted at the upper or lower
boundary of the price window.

1.22   Stocks: Menu/ Chart/ Trading

            The Trading menu option allows you to graphically represent ←
             buy/sell
signals   based   on   rules   you   configured   using   the

            Customized Trading Rules
             . A line connecting two dots shows the buy and
sell period. Above the sell dot is the percent gained or lost on the
trade.

The Stocks program assumes an average of the high and low price on
period after the buy/sell signal as an approximate purchase/sale price
when figuring the percent gain or loss. If a sell signal has not yet
been generated, the sell dot is placed on the last period charted and
the current profit or loss percentage is displayed.

1.23   Stocks: Menu/ Chart/ Price Scale

The Price Scale menu choice contains a sub-menu option allowing you to
select either an arithmetic or logarithmic scale. The default scale is
arithmetic. An arithmetic scale consists of values that increase at an
constant rate. For example each label is one dollar apart. A
logarithmic scale consists of values that increase at a logarithmic
rate. That is to say the distance from one to two is the same as from
two to four or three to six.

1.24   Stocks: Menu/ Chart/ Volume Scale

The Volume Scale menu choice contains a sub-menu option allowing you
to select either an arithmetic or logarithmic scale. The default scale
is arithmetic. An arithmetic scale consists of values that increase at
an constant rate. For example each label is one thousand shares apart.

A logarithmic scale consists of values that increase at a logarithmic
rate. That is to say the distance from one to two is the same as from
two to four or three to six.

1.25   Stocks: Menu/ Studies

                  The Stocks program supports a number of studies to graph ←
                     relationships
between historical price and volume data. The Studies menu allows you
to enable or disable the display of these studies. Your analysis of
these

The following is a list of studies supported by the Stocks program:

                  Moving Average A

                  Moving Average B

                  Moving Average C

                  Gann Charts

                  MACD

                  Parabolic Time Price

                  Percent R

                  Relative Strength Index

                  Stochastics

                  Trend Lines

                  Volume Price Trend

                   Average Volume
                  Select the menu item to enable or disable each study.

1.26   Stocks: Menu/ ARexx/ Edit Function Keys...

This menu selection brings up a fill-in form that allows you to
configure function keys F1 thorough F9 to execute ARexx Scripts when
pressed. There is a file requester gadget next to each function key
label that allows you to use a requester screen to select the name of
your script.

Also on the fill-in form is a selection that allows you to change the
name of the default commission script. This selection also sports a
file requester gadget.

1.27   Stocks: Menu/ ARexx/ Execute Script...

                This   menu   choice   brings   up   a   file requester. If an ARexx ←
                    script is
selected, it will be immediately be executed. More information is
available on
                ARexx Scripts
                  .

1.28   Stocks: Window Format

The Stocks program displays and prints stock charts using a segmented
page. The page is broken into a number of sections. In the top section
price data, moving averages, Gann lines, trend lines, and earnings
data   are   displayed.   If   enabled   the   moving average
convergence/divergence   study   is   then   charted. The next section
contains the Relative Strength and Stochastics studies. The final
section contains volume data, as well as volume price trend and
average volume studies.

```
 -----------------------------------------------------------
|*| Chart Title and Date Range
 -----------------------------------------------------------
 P
 R              Price Data
 I
 C
 E              Price Moving Averages

 S
 C              Gann Lines
 A
 L
 E              Trend Lines


 -----------------------------------------------------------


                Moving Average Convergence/Divergence


    MACD
 -----------------------------------------------------------
 90
 70              Relative Strength Index
 50
 30              Stochastics
 10
    RSI & Stochastics
```

```
  ------------------------------------------------------------
  V
  O
  L                    Volume Data
  U
  M
  E                    Volume Price Trends

  S
  C                    Volume Moving Average
  A
  L
  E
  ------------------------------------------------------------
```

1.29 Stocks: Configuration File

The configuration file (STOCKS.CONFIG) must be located in ↩
                the S:
directory and contains the default settings for the Stocks program.
When the Stocks program is first run, it loads the configuration
information from this file.

The following is a list of options which may be configured:

Chart Period

Chart Candlestick

Chart P&F Ranges

Chart Earnings

Chart Trading

Chart Price Scale

Chart Volume Scale

Default Path

Printer Type

Printer Aspect

Printer Density

Printer Center

Printer Page X Dpi

Printer Page Y Dpi

```
                        Printer Page Width

                        Printer Page Height

                        Screen Colors

                        Screen Interlace

                        Screen Resolution

                        Screen Type

                        Window Size

                        Studies

                        Trading Rules

                        Commission Script
                Any  line  beginning  with a ';' in the configuration file is  ←
                        considered
a comment and is ignored by the Stocks program.


                        Example
```

1.30 Stocks: STOCKS.CONFIG Example

The following is an example a stocks.config file:

```
    ;
    ; Stocks – Version 03.02a
    ;
    Screen = 640 X 400
    Window = 640 X 384
    HiRes = On
    Interlace = On
    ;
    Color 1 = 10, 10, 10
    Color 2 = 0, 0, 0
    Color 3 = 15, 15, 15
    Color 4 = 6, 7, 12
    Color 5 = 0, 14, 0
    Color 6 = 15, 3, 3
    Color 7 = 15, 0, 15
    Color 8 = 15, 15, 4
    ;
    Path = ""
    Printer "LASERJET"
    Printer Aspect = LANDSCAPE
    Printer Center = On
    Printer Density = 2
    Printer Page X Dpi = 150
    Printer Page Y Dpi = 150
```

```
Printer Page Width = 800
Printer Page Height = 1000
;
Study Avg A = On, Color 8, P1 = 5, P2 = 0
Study Avg B = On, Color 7, P1 = 20, P2 = 0
Study Avg C = On, Color 6, P1 = 50, P2 = 0
Study Avg Volume = On, Color 4, P1 = 20, P2 = 0
Study Gann = Off, Color 4
Study MACD = On, Color 8
Study Percent R = On, Color 4
Study PTPS = Off, Color 5
Study RSI = On, Color 3
Study Stochastics = On, Color 4
Study Trend Line = On, Color 4
Study VPT = On, Color 3
;
Chart Candlesticks = On
Chart Earnings = On, Color 3
Chart Trading = Off, Color 5
Chart Price Scale = Arithmetic
Chart Volume Scale = Arithmetic
;
Chart PAF Range 1 = 0.0000, 0.2500
Chart PAF Range 2 = 5.0000, 0.5000
Chart PAF Range 3 = 20.0000, 1.0000
Chart PAF Range 4 = 100.0000, 5.0000
;
Commission Script = "REXX:CalcCommission.rexx"
ARexx Script 1 = "REXX:DisplayStocks.rexx"
```

1.31 Stocks: Configuration/Chart Period

This allows you to configure the default period to ←↩
display. The
default value is DAILY.

Command Syntax:

CHART PERIOD = DAILY/WEEKLY/MONTHLY

For more information about this topic see the sections on

Menus/ Chart/ Daily
,
Menus/ Chart/ Weekly
,
Menus/ Chart/ Monthly
.

1.32 Stocks: Configuration/Chart Candlesticks

This allows you to configure the default mode for formatting ←
price. If
ON (enabled) the price high, low, open, and close values are displayed
using
Japanese Candlestick
format. If this characteristic is OFF,
traditional price high, low, and close values are displayed. The
default value is ON.

Command Syntax:

CHART CANDLESTICKS = ON/OFF

For   more   information   about   this   topic   see   the   section on

Menus/ Chart/ Candlesticks
.

1.33 Stocks: Configuration/Chart P&F Range

This allows you to configure the resolution of each Point & ←
Figure
square. Up to ten (10) ranges can be configured. Each range is bounded
by the base price value (number2) in one line and the base price value
of the next range. The last range base price value is used as the base
for all higher values.

Command Syntax:

CHART PAF RANGE number1 = number2 , number3

where

    number1   The range number (1 – 10).

    number2   The base price value of the range.

    number3   The price represented by each square in the range.

The following is the default scale is used for P&F charts:

    $0.00 – $4.75 each X or O represents $0.25
    $5.00 – $20.50 each X or O represents $0.50
   $21.00 – $99.00 each X or O represents $1.00
  $100.00 +   each X or O represents $2.50

It would be represented in the configuration file as:

 Chart PAF Range 1 = 0.0000, 0.2500
 Chart PAF Range 2 = 5.0000, 0.5000
 Chart PAF Range 3 = 20.0000, 1.0000
 Chart PAF Range 4 = 100.0000, 2.5000

For   more   information   about   this   topic   see   the   section   on

                Point and Figure
                .

1.34   Stocks: Configuration/Chart Earnings

            This   allows   you to configure default characteristics for the ←
            Earnings
display. Configuration information include the default selection, ON
or OFF as well as the color to display the data in.

CHART EARNINGS = ON/OFF, COLOR number

where
    ON/OFF   Allows you to configure the default selection when
                the Stocks program is executed.

    COLOR   Allows you to configure the color that is used to
                display the earnings data.

For   more   information about this topic see the section on
            Earnings Data
            and
            Menus/ Chart/ Earnings
            .

1.35   Stocks: Configuration/Chart Trading

            This   allows   you to configure default characteristics for the ←
            Trading
display. Configuration information include the default selection, ON
or OFF as well as the color to display the data in.

CHART TRADING = ON/OFF, COLOR number

where
    ON/OFF   Allows you to configure the default selection when
                the Stocks program is executed.

    COLOR   Allows you to configure the color that is used to
                display the trading points.

For   more   information about this topic see the section on
            Trading Rules
            and
            Menus/ Chart/ Trading
            .

1.36   Stocks: Configuration/Chart Price Scale

                  This allows you to configure the default Price Scale. ←
                  Configuration
options include arithmetic or log. The default setting is Arithmetic.

CHART PRICE SCALE = ARITHMETIC/LOG

where
    ARITHMETIC/LOG Allows you to configure the default price scale

For more information about this topic see the section on

        Menus/ Chart/ Price Scale
            .

1.37   Stocks: Configuration/Chart Volume Scale

                  This allows you to configure the default Volume Scale. ←
                  Configuration
options include arithmetic or log. The default setting is Arithmetic.

CHART VOLUME SCALE = ARITHMETIC/LOG

where
    ARITHMETIC/LOG Allows you to configure the default price scale

For more information about this topic see the section on

        Menus/ Chart/ Volume Scale
            .

1.38   Stocks: Configuration/Default Path

This allows you to configure the default directory path to prepend to
stock filename or stock list filename before attempting to open the
file.

Command Syntax:

PATH = "path"

For example:

PATH = "Work:Files/Stocks/"

1.39   Stocks: Configuration/Printer Type

This allows you to specify what format printer you are using. The
current version of the Stocks program supports a number of printer
types. The default value is "DEFAULT SYSTEM DRIVER".

Command Syntax:

PRINTER = "printer type"

where printer type is:

```
 LASERJET               HP LaserJet and compatible printers.
 OKIDATA                Okidata Microline 92/3 dot matrix printer.
 POSTSCRIPT             Postscript printer.
 DEFAULT SYSTEM DRIVER  Use graphics driver specified by PrintGfx
                        preferences program.
```

1.40   Stocks: Configuration/Printer Aspect

This allows you to specify the print orientation. This ←
                  command only
applies when the
                  Printer Type
                   is "DEFAULT SYSTEM DRIVER". The default
value is LANDSCAPE.

Command Syntax:

PRINTER ASPECT = PORTRAIT/LANDSCAPE

```
 PORTRAIT    Output is displayed vertically (lengthwise) on the output
             page.  Prices are printed along the long edge of the paper
             and time is printed along the short edge.

 LANDSCAPE   output is displayed horizontally (widthwise) on the output
             page.  Prices are printed along the short edge of the paper
             and time is printed along the long edge.
```

1.41   Stocks: Configuration/Printer Density

This allows you to configure the print density. Print density ←
                  is the
number of dots per inch printed. Its value is specific to the printer
being used. A value of one (1) represents the least resolution
possible and eight (8) represents the finest possible resolution (e.g.
an HP LaserJet uses 1=75 dpi, 2=100 dpi, 3=150 dpi and 4=300 dpi).
Print density only applies when the
                  Printer Type
                   is "DEFAULT SYSTEM
DRIVER". The default value is 3.

Command Syntax:

PRINTER DENSITY = number

where number is:

 a decimal value between 1 and 8.

1.42   Stocks: Configuration/Printer Center

                This allows you to specify whether the print output is to be ←
                    centered
on the page. This command is only valid when the
                Printer Type
                 is
"DEFAULT SYSTEM DRIVER" The default is OFF.

Command Syntax:

PRINTER CENTER = ON/OFF

1.43   Stocks: Configuration/Printer Page X Dpi

This allows you to specify the number of dots per inch across the page
widthwise. You should refer to your printer manual for exact values
used by each print density. The default is 150 dpi.

Command Syntax:

PRINTER PAGE X DPI = number

1.44   Stocks: Configuration/Printer Page Y Dpi

This allows you to specify the number of dots per inch down the page
lengthwise. You should refer to your printer manual for exact values
used by each print density. The default is 150 dpi.

Command Syntax:

PRINTER PAGE Y DPI = number

1.45   Stocks: Configuration/Printer Page Width

This allows you to specify the page width in 100ths of an inch. The
default is 800 (8.00 inches).

Command Syntax:

PRINTER PAGE WIDTH = number

1.46   Stocks: Configuration/Printer Page Height

This allows you to specify the page height in 100ths of an inch. The
default is 1000 (10.00 inches).

Command Syntax:

PRINTER PAGE HEIGHT = number

1.47   Stocks: Configuration/Screen Type and Size

This allows you to display your stock data on a customized public
screen or the Workbench screen. If you specify a custom public screen,
you can its define the number of colors, the color palette and the
screen size.

Selecting WORKBENCH causes the Stocks program to display its data on
the Workbench screen. If you choose a custom public screen, you must
specify the type and size of the screen. To display two or more stock
charts on the same screen, run the stocks program two or more times.
Each invocation will result in another window displayed on either the
Workbench or your custom public screen.

Command Syntax:

SCREEN = WORKBENCH
      or
SCREEN = MODE , number1 X number2

In the second case, a custom public screen number1 pixels wide and
number2 pixels tall is used.

MODE is defined as:

    CLONE   Clones the Workbench screen mode
    NTSC   NTSC screen mode
    PAL   PAL screen mode
    VGA   VGA screen mode
    A2024   A2024 screen mode

The   default setting for SCREEN is a custom public screen named
'Stocks' with a MODE of CLONE and a display size of 640 x 400 pixels
(i.e SCREEN = CLONE, 640 X 400).

1.48 Stocks: Configuration/Screen Interlace

This allows you to configure the interlace mode on your custom screen. Interlaced screens offer twice the number of pixel rows but may cause some screens to flicker. The default value is ON.

Command Syntax:

INTERLACE = ON/OFF

This characteristic does not applies if the default screen type is Workbench.

1.49 Stocks: Configuration/Screen Resolution

This allows you to configure whether a high resolution custom display is enabled. The default is ON.

Command Syntax:

HIRES = ON/OFF

This characteristic does not applies if the default screen type is Workbench.

1.50 Stocks: Configuration/Screen Colors

The number of colors currently used by the Stocks program for a custom screen is eight. You can change the color palette of the custom screen by specifying the red, green, and blue levels for each of the eight colors displayed on the screen.

Command Syntax:

COLOR N1 = N2, N3, N4

where
 N1 = the color number
 N2 = red level
 N3 = green level
 N4 = blue level.

The following are the default color mappings and uses for each color:

```
 Color    R  G  B   Description   Uses
 -----   --------   -----------   ----
  1      10 10 10   Gray          Background

  2       0  0  0   White         Relative Strength
                                  On Balance Volume
                                  Earnings
```

```
3        15 15 15    Black              Price
                                        Volume

4         6  7 12    Blue               Gann
                                        Percent R
                                        Stochastics
                                        Avg Volume

5         0 14  0    Green              Parabolic Time Price
                                        Trading Buy/Sell Points

6        15  3  3    Red                Moving Average C

7        15  0 15    Purple             Moving Average B

8        15 15  4    Yellow             Moving Average A
```

Note: This characteristic does not applies if the default screen type
is Workbench.

1.51   Stocks: Configuration/Window Size

This allows you to customize the size of the display window ←
within the

screen.

Command Syntax:

WINDOW = number1 X number2

The format specifies a window sized number1 pixels in width and
number2 pixels in height. Windows are opened if the -D

Command Line Option
is used.

1.52   Stocks: Configuration/Studies

You can customize the studies you wish to see and the colors to ←
graph

the studies with.

Command Syntax:

STUDY study-name = ON/OFF [, COLOR N][, optional parameters]

The information in brackets is optional (DO NOT INCLUDE BRACKETS) in
your command syntax.

study-name refers to the following studies:

AVG A

AVG B

AVG C

GANN

MACD

PTPS

PERCENT R

RSI

STOCHASTICS

TREND LINE

VPT

AVG VOLUME

ON/OFF indicates whether the study is to be displayed or ←
        printed by
default. When you are operating the Stocks program in display mode
(interactively), you   can   enable or disable studies through the

Studies Menu
.

Adding ', COLOR N' to your configuration command, changes the color
used to graph the study to the color you specified. You may use the

Screen Colors
 option to change the palette choice for the color.

Additional   parameters maybe configured for the different studies.
Refer to the individual study sections for a description of the
additional configuration options.

1.53 Stocks: Configuration/Trading Rules

The Stocks program allows you to define buy and sell rules ←
              . This
allows you to create your own computerized trading system by telling
the Stocks program what conditions you require to buy a stock and what
conditions need to exist before you will sell the stock. The Stocks
program graphs the purchase and sell points based on your rules and
includes the percent gained or lost on that trade.

The Stocks program is currently limited to 'Long' trades. Short
selling is not currently supported.

To enter buy rules enter a configuration record:

BUY WHEN trade-condition [FOLLOWED BY trade-condition ...]

where
    trade-condition is defined as a mathematical expression using
    math operators:

        (,), +, -, *, /, % (modulo divide)

    relational operations:

        <, <=, =, >=, >, <> (not equal to)

    conditional operations:

        AND, OR, NOT

    and study elements:

        PRICE HIGH
        PRICE LOW
        PRICE CLOSE
        PRICE OPEN
        PRICE AVG
        VOLUME

                AVG A

                AVG B

                AVG C

                AVG VOLUME

                MACD

                PTPS

                PERCENT R

                RSI

                STOCHASTICS

                VPT
                To specify the value for the current period follow the study ←
                    element
with '[0]'. To specify the value for the previous period use [1], to
indicate two periods ago use [2], etc.

It generally makes sense to compare values which have the same scale.
That is comparing PRICE CLOSE to AVG A, RSI to STOCHASTICS (both are
on a scale of 0 - 100), or VOLUME to AVG VOLUME. Trying to compare

PRICE to STOCHASTICS or PRICE to VOLUME is allowed but doesn't make
tremendous sense since these studies are based on different scales.

for example:

 BUY WHEN (AVG C[0] > (AVG C[1] + AVG C[2] + AVG C[3])/3)

would instruct the Stocks program to indicate a buy condition when
today's moving average C is greater than the last three moving average
Cs combined.

The FOLLOWED BY operator allows multi-period events to be monitored.
You can specify you are interested in a stock if the first event
occurs, but that you desire to wait until the confirming event happens.

for example:

 BUY WHEN PRICE CLOSE[0] > PRICE HIGH[1] FOLLOWED BY STOCHASTICS[0] < 10

would instruct the Stocks program to get ready to issue a buy signal
when today's closing price is greater than yesterday's high price. But
to wait until the stochastics indicator is less than 10. The stocks
program will wait indefinitely for the FOLLOWED BY event to occur.

A similar syntax is used to customize sell rules. Just substitute SELL
WHEN for BUY WHEN in the previous syntax definition.

1.54   Stocks: Configuration/Commission Script

This allows you to configure the ARexx script used to calculate
commissions when the Stocks program performs a trade.

Command Syntax:

COMMISSION SCRIPT = "filename"

Example:

COMMISSION SCRIPT = "REXX:CalcCommission.rexx"

1.55   Stocks: Data File Format

            The format used by the Stocks program for data files is a simple ←
                ASCII
file. These data files contain a number of stock record types:

            Comments

            Configuration

Price Data

Earnings Data

Stock Splits

1.56 Stocks: Data File/Comments

Any line that can not be interpreted as one of the other known record types is considered a comment and is ignored by the Stocks program.

1.57 Stocks: Data File/Price & Volume

Stock data records are recognized as lines which have a '/' in the third position in the row. This is interpreted as the date the shares traded using the form mm/dd/yy. Following the date is one or more spaces or tabs the volume of total number of shares traded for that period. After the volume one or more spaces or tabs and the high price for the period. Then the low price, closing price and optionally the opening price. The format is a follows:

```
   MM/DD/YY VOLUME HIGH-PRICE LOW-PRICE CLOSE-PRICE OPEN-PRICE
```

Commas in the volume number are ignored.

Fractions of shares can be represented as true fractions or decimal values. The Stocks program recognizes fractions in halves, fourths, eighths, sixteenths, thirty-seconds, and sixty-fourths. These fractions of a dollar MUST FOLLOW the whole dollar value after a single space.

for example:

```
 04/26/91    2,270,100 16 1/4    15         15 3/8
 04/29/91    593000    15 3/4    14 3/4     15
 04/30/91    263800    15 1/4    14 1/4     14 1/4    14 1/2
```

or

```
 04/26/91    2270100   16.25     15         15.375
 04/29/91    593,000   15.75     14.75      15
 04/30/91    263800    15.25     14.25      14.25     14.5
```

The Stocks program calculates the period represented by each stock price record by the number of days between records. Any records which are greater than seven days apart are assumed to be an entire month. Records greater than five days apart are assumed to be week summaries.

1.58 Stocks: Data File/Company Earnings

Earnings data is entered using an earnings record. Earnings records are denoted by a line beginning with 'E=' and a the trailing four quarters earnings value. If enabled, the Stocks program will calculate the average price to earnings ratio (PE) for the entered earnings using a weighted average formula. The Stocks program will also plot the earnings data in the price window by multiplying the earnings per share value by the average PE.

1.59   Stocks: Data File/Stock Splits

Sometimes, companies adjust the price and number of shares of stock outstanding by implementing a split. To record such an event in the stocks data file, a stock split record is entered prior to the first day of the new price.

When this is done, the value of the company stays the same, each stock owner holds more or less shares of less or greater value.

When a stock split record is encountered by the Stocks program, all prior price and volume values are adjusted by the split information. Volumes are multiplied by the number of equivalent new shares then divided by the number of shares prior to the split. Prices and Earnings are multiplied by the old number of shares and then divided by new number of shares.

Stock splits are specified by a data record beginning with 'S' and having the form:

Sn=o

where
    n is the new number of shares owned
    o is the previous number of shares prior to the split.

For example,

S2=1

indicates the stock has just split two for one. Each old share is now two new shares. A if a stock closed at $10 per share and 1000 shares traded during the day prior to the split, after the split the same day would graphed as a $5 close with 2000 shares traded. The total dollar volume is the same $10,000 worth of shares traded.

S1=3

is the format to use to configure a three for one reverse split where three old shares are now equal to one new share. A if a stock closed at $3 per share and 3000 shares traded during the day prior to the split, after the split the same day would graphed as a $9 close with 1000 shares traded. The total dollar volume is the same $9,000 worth of shares traded.

1.60   Stocks: Data File/Custom Study Configuration

Records   in   a   stock   data   file   that   begin   with   ':'   are   ↩
considered
configuration   records   and   are   processed   by   the configuration
interpreter   in   the   same manner as the
Configuration File
. This allows
you   to   further   customize   the   display   and   chart   preferences   for   a
particular stock.

 For example, you may want to display the volume data
on   an   arithmetic   scale for most stocks but use logarithmic scale for a
particular   stock.   Another   example   where this feature is useful is to
tune the study parameters for each stock.

Some   configuration   options   are   not   allowed   on   an individual stock
basis.   These   options   are   generally screen,   window,   and printer
settings.

Allowable options include:

Chart Period

Chart Candlestick

Chart P&F Ranges

Chart Earnings

Chart Trading

Chart Price Scale

Chart Volume Scale

Studies

Trading Rules
Invalid options are:

Default Path

Printer Type

Printer Type

Printer Aspect

Printer Density

Printer Center

Printer Page X Dpi

Printer Page Y Dpi

Printer Page Width

Printer Page Height

Screen Colors

Screen Interlace

Screen Resolution

Screen Type

Window Size

1.61 Stocks: Studies (Formulas Applied to Stock Data)

The Stocks program supports a number of studies to graph ←
relationships
between historical price and volume data. Your analysis of these
changes in the stock prices could help you forecast the future
direction of the stock. Each study uses a default set of graph
criteria located in the
configuration file
. These default setting can
be   customized   for   each   individual   stock   by   including

Custom Configuration Records
in the individual
stock data file
.

The following is a list of studies supported by the Stocks program:

Moving Averages

Gann Charts

MACD

Parabolic Time Price

Percent R

Relative Strength Index

Stochastics

Trend Lines

Volume Price Trend

Average Volume

Point and Figure
All studies are displayed or printed in conjunction with the ←
price and
volume data. Many of the studies are overlaid in window panes right on
top of the price/volume data allowing you to see the actual detailed
information about price and volume while interpreting the studies.

Changing the period (daily, weekly, or monthly), changes the data used
to calculate the studies.

1.62 Stocks: Studies/Moving Averages

The Stocks program supports three moving averages labeled A, B, ←
and C.
You can configure the period of each average and can display all three
moving averages at once. Moving averages A and B are also used to
calculate
MACD
.

Avg A is the first moving average. The default period for the average
is 5 days. You can modify this by specifying a different period after
the color.

The
configuration file
and
ARexx Command
format is:

STUDY AVG A = ON/OFF, COLOR n1, P1 = n2, P2 = n3

where
    n1 is the new color
    n2 is the new period
    n3 represents the type of moving average formula.

Avg B is the second moving average. The default period for the average
is 20 days. You can modify this by specifying a different period after
the color.

The
configuration file
and
ARexx Command
format is:

STUDY AVG B = ON/OFF, COLOR n1, P1 = n2, P2 = n3

where
    n1 is the new color
    n2 is the new period
    n3 represents the type of moving average formula.

Avg C is the third moving average. The default period for the average
is 50 days. You can modify this by specifying a different period after
the color.

The
                configuration file
                 and
                ARexx Command
                 format is:

STUDY AVG C = ON/OFF, COLOR n1, P1 = n2, P2 = n3

where
    n1 is the new color
    n2 is the new period
    n3 represents the type of moving average formula.

n3 is calculated using a formula. The formula is AVERAGE_TYPE +
DATA_TYPES. AVERAGE_TYPE is equal to 0 for simple, 1 for weighted, 2
for exponential moving averages. DATA_TYPES are 16 for price close, 32
for price open, 64 for price high, 128 for price low.

For example:

n3 = 16 instructs the Stocks program to calculate a simple moving
average based on the closing prices.

n3 = 192 instructs the Stocks program to calculate a simple moving
average based on an average of the high and low prices.

n3 = 17 instructs the Stocks program to calculate a weighted moving
average based on the closing prices.

n3 = 194 instructs the Stocks program to calculate an exponential
moving average based on an average of the high and low prices.

The Stocks program calculates and plots the moving averages as a line
charts in a window pane shared the price data and other studies
graphed on the price scale.

1.63 Stocks: Studies/GANN

                A Gann chart utilizes Gann's theory that stock and commodity ←
                prices
tend to move in trends which follow certain ratios. Those ratios
relate price and time. Common ratios are formed by taking one unit of
price and increasing the unit of time such as one day, two days, four

days, etc. Also, ratios can be formed by two, four, eight units of
price for a single period of time.

The Stocks program attempts to calculate meaningful dates in a stock's
history and plots the Gann Trend Lines from those key dates. Key dates
are generally the highest and lowest points that the stock reached as
well as days where Moving Average B changes direction.

The Stocks program calculates and plots the Gann Trend Lines as a line
chart in a window pane shared the price data and other studies graphed
on the price scale.

The

                configuration file
               and
              ARexx Command
               format is:

STUDY GANN = ON/OFF, COLOR number

where
    ON/OFF   Allows you to configure the default selection when
                 the Stocks program is executed.

    COLOR   Allows you to configure the color that is used to
                 display the Gann study data.

1.64 Stocks: Studies/MACD

               The MACD study is constructed by taking the difference ↩
                 between

               Moving Average A
                  and
               Moving Average B
               . The Moving Average
Convergence-Divergence (MACD) study was developed by George Appel and
is determined as follows:

    MACD = MA.A - MA.B

where

    MACD = MACD Line
    MA.A = Moving Average A
    MA.B = Moving Average B

The Stocks program calculates and plots the MACD study as a histogram
chart in a window pane below the price pane. The scale for the window
pane is adjusted so the distance from the tallest MACD bar to the
lowest MACD bar fits within the window pane.

The

```
                        configuration file
                         and
                        ARexx Command
                         format is:
```

STUDY MACD = ON/OFF, COLOR number

where
    ON/OFF   Allows you to configure the default selection when
                  the Stocks program is executed.

    COLOR   Allows you to configure the color that is used to
                  display the MACD study data.

1.65 Stocks: Studies/Percent R

               The Percent R study (%R) was developed by Larry Williams and ←
                is used
to display the closing price of a stock relative to the range of
prices from lowest to highest during a given period. The default range
for the period is 14 days. The Williams %R indicator was first
introduced by Larry Williams in the mid-1970's and is very similar to
Wilder's
               RSI
                and Lane's
               Stochastics
               .

It is calculated as follows:

    $\%R = 100 \times (H - C) / (H - L)$

where

    %R = Williams %R indicator
    H = Highest price within a time period
    L = Lowest price within a time period
    C = The latest closing price

The Stocks program calculates and plots the %R study as a solid blue
line in a small window pane below the price window.

The
               configuration file
                and
               ARexx Command
                format is:

STUDY PERCENT R = ON/OFF, COLOR number

where
    ON/OFF   Allows you to configure the default selection when
                  the Stocks program is executed.

```
       COLOR              Allows you to configure the color that is used to
                          display the %R study data.
```

1.66 Stocks: Studies/PTPS

PTPS stands for Parabolic Time Price System. It is based ↩
on the
assumption that a stock follows a trend that forms a parabola as the
stock gains or looses momentum. Price acceleration is assumed to take
place as the trend continues. The PTPS provides an excellent mechanism
for setting stop-loss price levels. The formula used to calculate PTPS
is:

Long Trades:

     SAR = SARy + AF x (H - SARy)

Short Sales:

     SAR = SARy - AF x (L - SARy)

where

      SAR = Stop and Reverse Point
     SARy = Yesterday's SAR
       AF = Acceleration factor (0 < AF <= 0.02)
        H = Highest price since opening the long position
        L = Lowest price since opening the short position

The Stocks program calculates and plots the PTPS study as a line chart
in a window pane shared the price data and other studies graphed on
the price scale.

The
                configuration file
                 and
                ARexx Command
                 format is:

STUDY PTPS = ON/OFF, COLOR number

where
    ON/OFF   Allows you to configure the default selection when
                        the Stocks program is executed.

    COLOR   Allows you to configure the color that is used to
                        display the Parabolic Time Price study data.

1.67 Stocks: Studies/RSI

RSI stands for Relative Strength Index. It is an ←
oscillator that
measures the stocks closing price relative to the range of prices
during a given period. It was developed by J. Welles Wilder and is
used to indicate the strength left in a price trend. It is very
similar to Williams's
%R
and Lane's
Stochastics
.

It is calculated as follows:

    RSI = 100 - (100 / (1 + RS))

        Average of 14 day closes Above previous day
    RS = --
        Average of 14 day closes Below previous day

The value for RSI is always between 0 and 100 with the oscillator
considered 'Bullish' if the RSI is below 30 and 'Bearish' if RSI is
above 70.

The Stocks program calculates and plots the RSI study as a solid white
line in a window pane shared with the Stochastics study. This window
pane is located below the MACD and price panes. The scale for the RSI
and Stochastics window pane is 0 to 100.

The
                configuration file
                and
                ARexx Command
                format is:

STUDY RSI = ON/OFF, COLOR number

where
    ON/OFF   Allows you to configure the default selection when
                    the Stocks program is executed.

    COLOR   Allows you to configure the color that is used to
                    display the RSI study data.

1.68 Stocks: Studies/Stochastics

                Stochastics is an other oscillator similar to Williams's
                %R
                and
Wilder's
                RSI
                in that it relates the stock's closing price to the price
range for a given period. The Stochastics study was invented by Dr.
George Lane and is calculated as follows:

```
    %K = 100 x (C - L) / (H - L)


    %D = (%K + %K1 + %K2) / 3
```

where
```
    %D = %K Smoothed by simple moving average of 3 to 5 days

    %K = Raw K
   %K1 = %K from previous day
   %K2 = %K from two days ago

    C = The current closing price
    H = Highest price in a time period
    L = Lowest price in a time period
```

The default period for the %K in the Stochastics study is five days. %D should be smoothed by a moving average of three to five days.

The value for %K & %D is always between 0 and 100 with the oscillator considered 'Bullish' it is below 20 and 'Bearish' if it is above 80.

The Stocks program calculates and plots the Stochastics study as two lines charted in a window pane shared with the RSI study. The window pane is located below the MACD and price panes. %K is plotted as a dashed blue line and %D is represented by a solid blue line. The scale for the RSI and Stochastics window pane is 0 to 100.

The
```
                  configuration file
                   and
                  ARexx Command
                   format is:
```

STUDY STOCHASTICS = ON/OFF, COLOR number

where
```
    ON/OFF          Allows you to configure the default selection when
                    the Stocks program is executed.

    COLOR           Allows you to configure the color that is used to
                    display the Stochastics study data.
```


1.69 Stocks: Studies/Trend Lines

```
            Trend lines are used to represent the limit that a stock  ←
               movement will
```
reach. The rate of ascent or decent of a stock price is used to calculate the slope of the trend line and the stock should stay above the trend line if the price is rising and below a falling trend line. If the stock price breaks the line, the trend of future prices may be reversing.

The Stocks program attempts to calculate meaningful dates in a stock's

history and plots the trend lines from those key dates. Key dates are
generally the highest and lowest points that the stock reached as well
as days where Moving Average B changes direction.

Additionally, you may display your own trend lines by pressing the
left- mouse-button at the starting-point where you wish to display the
trend and press the left-mouse-button again at the end-point. The
stocks program will draw a line between those to mouse click points.

The Stocks program calculates and plots the Trend Lines as a blue
lines in a window pane shared the price data and other studies graphed
on the price scale.

The
                configuration file
                 and
                ARexx Command
                 format is:

STUDY TREND LINE = ON/OFF, COLOR number

where
    ON/OFF   Allows you to configure the default selection when
                    the Stocks program is executed.

    COLOR   Allows you to configure the color that is used to
                    display the trend line study data.

1.70 Stocks: Studies/Volume Price Trend

                VPT stands for Volume Price Trend. The VPT study attempts to ←
                    display
whether money is flowing into or out of an equity. If heavy trading
occurs on days where the price is higher than the previous day, it is
generally assumed that money is flowing into the stock. If heavy
trading occurs and the stock closes down, money is leaving.

A variation on VPT is On-Balance Volume or OBV. The idea behind OBV is
to weight the volume by the change in price. The assumption is the
greater the difference in price from one day to the next, the more
impact this change should have on the running volume balance being
maintained.

To calculate VPT, the Stocks program maintains a running balance of
volume. If the stock price is above the previous day's price, the
volume is added to the running balance. If the price is lower, the
volume is subtracted from the balance. The running balance is then
scaled to fit in the volume window pane and is displayed as a dashed
white line.

The
                configuration file
                 and
                ARexx Command

```
                format is:

STUDY VPT = ON/OFF, COLOR number

where
    ON/OFF           Allows you to configure the default selection when
                     the Stocks program is executed.

    COLOR            Allows you to configure the color that is used to
                     display the volume price trend study data.
```

1.71 Stocks: Studies/Average Volume

```
                Average  volume  is  used  to smooth out minor variations in  ←
                    volume. The
default period is 10 days.

The  Average  Volume  study  is plotted as a solid blue line in the same
window as regular volume.

The
                configuration file
                 and
                ARexx Command
                 format is:

STUDY AVERAGE VOLUME = ON/OFF, COLOR n1, P1 = n2, P2 = n3

where
    ON/OFF           Allows you to configure the default selection when
                     the Stocks program is executed.

    COLOR            Allows you to configure the color that is used to
                     display the average volume study data.

    n1               is the new color
    n2               is the new period
    n3               represents the type of moving average formula.
                         0 for simple
                         1 for weighted
                         2 for exponential moving averages.
```

1.72 Stocks: Studies/Point & Figure

```
                This  type  of  study  is among the oldest forms of charting used.  ←
                    It is
also  called  the  three-box  reversal  system. Only price movements are
plotted  in  P&F  charts,  volume  and  time are ignored. With Point and
Figure  charts,  minor  fluctuations  in price are ignored and long term
trends become more apparent.
```

P&F charts consist of columns of X's and O's. X's are plotted while
the stock is making upward price progress and O's are used during a
down trend. Originally, P&F charts were plotted on graph paper using a
fixed scale. The Stocks program preserves the fixed scale but does not
generate graph paper lines.

The following default scale is used for P&F charts:

    $0.00 - $4.75 each X or O represents $0.25
    $5.00 - $20.50 each X or O represents $0.50
   $21.00 - $99.00 each X or O represents $1.00
  $100.00 +   each X or O represents $2.50

To change the ranges for P&F charts see the
              P&F Range
               section of the
configuration file. Like most configuration file parameter, P&F Ranges
can be customized for each stock by entering :CHART PAF RANGE commands
in the stock data file.

See the section on
              Data File/Custom Study Configuration
                for more
information about customizing stock displays.

As long as the price is increasing, only the high price for the day is
used. If the high price mapped to the P&F scale yields an empty box,
the space at the top of the current column is filled with an 'X'. Only
when a new high is resulting in a new 'X' is NOT plotted, is the low
price is evaluated.

If the low price when mapped to the P&F scale yields a square three
boxes below the highest 'X' in the current column, a three-box
reversal is signaled and a new column filled with O's is started. The
'O' column starts one square below the previous column's highest X and
filled with O's up to the current low. At this point the trend is down
and only price lows are examined. As long as lower lows results in
more O's being drawn, only the lows are examined. If a new 'O' is not
drawn, the high price is examined.

If the high price when mapped to the P&F scale yields a square three
boxes above the lowest 'O' in the current column, a three-box reversal
is signaled and a new column filled with X's is started.

This process repeats indefinitely plotting X's during up trends and
O's during down trends.

1.73 Stocks: Candlesticks

              Japanese Candlesticks plot more information than ←
                traditional bar
charts. In addition to price high, low and close, Candlesticks provide
price open. Candlesticks are broken into three parts, the main body, a

skinny line above the body and a skinny line below the body.

 Price High:

The top of the skinny line above the body represents the high price
for the period. If there is NO skinny line above the main body, the
top of the main body is the high price for the period.

 Price Low:

The bottom of the skinny line below the body represents the low price
for the period. If there is NO skinny line below the main body, the
bottom of the main body is the low price for the period.

 Open and Close Prices:

The main body is either dark, white or a straight horizontal line. A
dark body indicates the stock opened higher than the close. In this
case, the open is the top of the main body and the close is the bottom
of the main body. If the body is white, the stock opened low and
closed up. The top of the main body is the close and the bottom of the
body is the open. If there is a single horizontal line with no dark or
white body, the open and close prices are the same.

If there is no opening price data in the
                  stock data file
                  , it will be
charted with the assumption that the open price equaled the close
price. Weekly displays from data files that do include daily data use
Monday's close price as the open price for the week. Also, monthly
displays use the first of the month as the open price.

The following examples are given to interpret the candlestick symbols.

```
                     White Bodied Candlestick
                     ------------------------




     *     <- Highest Price for period
     *
     *
    ***    <- Closing Price for period
    * *
    * *
    * *
    * *
    * *
    ***    <- Opening Price for period
     *
     *
     *     <- Low Price for period
```

```
================================================================


                        Dark Bodied Candlestick
                        -----------------------



     *      <- Highest price for period
     *
     *
    ***     <- Opening Price for period
    ***
    ***
    ***
    ***
    ***
    ***     <- Closing Price for period
     *
     *
     *      <- Low Price for period


================================================================



                        High and Close are the Same
                        ---------------------------


    ***     <- High & Closing Price for period
    * *
    * *
    * *
    * *
    * *
    ***     <- Opening Price for period
     *
     *
     *      <- Low Price for period


================================================================



                        Open and Low are the Same
                        -------------------------


     *      <- Highest price for period
     *
     *
    ***     <- Closing Price for period


================================================================
```

```
    *  *
    *  *
    *  *
    *  *
    *  *
    ***    <- Low and Opening Price for period
```

===

```
                    Open and Close are the Same
                    ---------------------------


    *      <- Highest price for period
    *
    *
   ***     <- Opening and Closing Price for period
    *
    *
    *      <- Low Price for period
```

1.74 Stocks: ARexx Scripts

                The Stocks program supports an ARexx command interface to allow ←
                    you to
automate the execution of the program. These scripts can be executed
when
                function keys
                    are   pressed   or   immediately   through the

                Execute Script
                  menu pick. The syntax used for most ARexx commands is
the same as the
                stocks.config
                  format. Additional commands duplicating
functionality on the Program Menu are also privided. The ARexx Port name
is Stocks.1 through Stocks.9. Depending on how many times the program
is being run concurrently.

The following is a list of functions that may be controlled:

                Open

                Close

                Print

                Quit

                Redisplay
```

Wait

Chart Period

Chart Candlestick

Chart P&F Ranges

Chart Earnings

Chart Trading

Chart Price Scale

Chart Volume Scale

Moving Averages

Gann Charts

MACD

Parabolic Time Price

Percent R

Relative Strength Index

Stochastics

Trend Lines

Volume Price Trend

Average Volume

Point and Figure

## 1.75 Stocks: ARexx Open

The ARexx command syntax to open and display stock data is:

OPEN stock-name

e.g. OPEN CBU will instruct the Stocks program to open and chart the
data for Commodore stock.

## 1.76 Stocks: ARexx Close

Executing   the   Close   command   performs   the   same   action   as   ←
pressing the
Close-Window-Gadget,   that   is   it   closes   the   currently   displayed   stock
chart.   If   you   are   displaying   a   single   stock,   the   Stocks   program   will
exit   when   you   close   the   display   window.

If   you   are   displaying   a   list   of   stocks,   the   next   stock   file   in   the
list   is   displayed.   To   exit   the   program   while   displaying   a   list   of
stocks, execute the
Quit
command.

The ARexx command syntax to close the currently display stock data is:

CLOSE

## 1.77   Stocks: ARexx Print

Executing   a   Print   command   causes   the   currently   displayed   stock   and
selected studies to be printed to the PAR: device or a file.

When   the   Stocks   program   is   printing   a   file,   a   progress   window   is
displayed.   You   can   terminate   a   printout   by   pressing   the
Close-Window-Gadget on the progress display.

The ARexx command syntax to print the currently display stock data is:

PRINT

## 1.78   Stocks: ARexx Quit

Executing   a   Quit   command causes the Stocks program to exit. Quit will
terminate the display of a list file.

The ARexx command syntax to quit the stocks program:

QUIT

## 1.79   Stocks: ARexx Redisplay

The   Stocks   program   does   not   immediately   update   the   display   when   a
study   or   chart command is executed. This allows a number of changes to
be   specified   prior   to   repainting   the   display,   thereby   speeding   the
overall   execution   of   the   command.   To   instruct   the   Stocks   program   to
refresh the display invoke the REDISPLAY command.

The ARexx command syntax to update the display is:

REDISPLAY

## 1.80   Stocks: ARexx Wait

A  delay  command  has  been  provided to allow time to view data before
the next command is executed.

The ARexx command syntax to delay is:

WAIT number

where

    number is the number of seconds to delay.


## 1.81   Stocks: Registration

               Upon  registering  the  Stocks  program  you  will  receive  a  ←
                  key that
unlocks  the  features  of  the  Stocks program. You will also receive a
program
               RS
                 to  aid  in the automation of the process of updating stock
data.  You  will also receive
               SP
                 , a portfolio management program that is
integrated  with  the  stock  database.  As  a registered user, you will
receive  the  latest  version of the Stocks program and will be notified
when new versions are available.

To   register  the  Stocks  program  send  $40  to
               Bug Free Development
                  .
Include the following information:

 Your Name
      Address
      Phone Number

 Any electronic mailing addresses.

 What version of the Stocks program you have been evaluating.

 What type of computer you are using to run Stocks.
   Please include:
     Model
     Memory Configuration
     Drives (include size)
     Monitor
     Other interesting characteristics

Your  name  will  be  added to our registration database and you will be
sent  a  registration  serial  number. When you receive the registration
information,  enter  it  into  the  Stocks  program  by  clicking on the
Registration  gadget.  The  registration  fill-in  form  is  pretty self
explanatory.  You  must  be  exact  when  entering  the information (even

upper/lower case).

When you register, you agree to all terms involved in licensing the
Stocks program. This includes agreeing with the copyright notice.
Breaking a copyright IS a felony in the eyes of the law.

## 1.82   Stocks: Support

Support for the Stocks Program is available through ←
CompuServe, the
Internet, and US Mail.

For the purposes of supporting the Stocks program, communications via
CompuServe and Internet Mail are encouraged. Should there be a need to
communicate with me (Jim) or Bug Free Development via telephone,
please send mail to me at
Bug Free Development
stating your phone
number, the nature, and need to speak voice. If it is felt that a
telephone conversation is warranted I will call you.

## 1.83   Stocks: Bug Free Development

Bug Free Development is a New Hampshire Business. It was formed as a
means of marketing and supporting the Stocks program and other
computer related business interests.

The US Mail address for Bug Free Development is ...

        Bug Free Development
        P.O. Box 7042
        Nashua, NH  03060

The CompuServe Mail address for Bug Free Development is ...

        71171,3015

The BIX Mail address for Bug Free Development is ...

        jim_bugfree

The Internet Mail address for Bug Free Development is ...

        71171.3015@CompuServe.com

Correspondence should be addressed to Jim.

## 1.84   Stocks: References

The  following  is  a  list  of reference books that do an excellent job
discussing technical analysis and Rexx programming:

----------------------------------------------------------------

    "Technical Analysis of the Futures Markets"

    Author:        John J. Murphy
    Publisher:     Prentice-Hall
    ISBN:          0-13-898008-X

    Describes:     A Comprehensive Guide to Trading Methods and
                   Applications.

----------------------------------------------------------------

    "New Concepts in Technical Trading Systems".

    Author:        J. Welles Wilder, Jr.
    Publisher:     Hunter Publishing Company
    ISBN:          0-89459-027-8

    Describes:     The Parabolic Time/Price System and
                   The Relative Strength Index.

----------------------------------------------------------------

    "How to Use the Three-Point Reversal Method of Point & Figure"

    Author:        A. W. Cohen
    Publisher:     Chartcraft, Inc.

    Describes:     The Point & Figure Method

----------------------------------------------------------------

    "A Practical Approach to Programming the Rexx Language".

    Author:        M.F. Cowlishaw
    Publisher:     Prentice Hall
    ISBN:          0-13-780651-5

    Describes:     Programming in Rexx.  It is not specific to
                   the Amiga but is an excellent description
                   of Rexx in general.

----------------------------------------------------------------


## 1.85   Stocks: Portfolio Management Program

The  portfolio  management  program  provides a mechanism for monitoring
the  value  of  your  stock  portfolio.  It is integrated with the stock
database  and  allows  you  to  see in an instant what your portfolio is
worth and when stock options are going to expire.

----------------------------------------------------------------

It also provides you with a transaction detail of your stock investments including cash deposits, withdrawals, purchases and sales of stocks and options. There are totals for your current cash position, equity position, and option value.

The program automatically adjusts quantities and prices based on stock splits recorded in the stock database.

---

The transaction list is an ASCII file. Here is a sample of a portfolio transaction database.

```
 D) 01/01/93 20000
 B) 01/04/93 MSFT 100 @89.375
 B) 02/11/93 C Mar 35 CBU 100 @1.9375
 S) 03/19/93 C Mar 35 CBU 100 @3.75
 S) 06/01/93 MSFT 100 @96.25
 B) 09/11/93 C Dec 35 IBM 400 @1.25
 B) 10/04/93 AAPL 200 @23.25
```

Here is a sample of the output of the portfolio management program.

SP – Version 2.01a – Date: 22 Jan 94

T R A N S A C T I O N   D E T A I L

Date	Description	Value	Commisson	Profit	Balance
01/01/1993	Deposit 20000.00	20000.00			20000.00
01/04/1993	Buy 100 of MSFT @89.38	8937.50	33.50		11029.00
02/11/1993	Buy 100 of CBU @1.94 Mar Call @35.00	193.70	20.00		10815.30
03/19/1993	Sell 100 of CBU @3.75 Mar Call @35.00	375.00	20.00	141.30	11170.30
06/01/1993	Sell 100 of MSFT @96.25	9625.00	33.50	620.50	20761.80
09/11/1993	Buy 400 of IBM @1.25 Feb Call @35.00	500.00	20.00		20241.80
10/04/1993	Buy 200 of AAPL @23.25	4650.00	42.00		15549.80
			---------	---------	---------
			169.00	761.80	15549.80
	YTD Deposits	20000.00			
	YTD Withdrawals	0.00			

E Q U I T Y   S U M M A R Y

Stock	Quantity	Price	Change	Current	Value	Commisson	Profit
AAPL	200	23.25	10.13	33.38	6675.00	84.00	1941.00
					---------	---------	---------
					6675.00	84.00	1941.00

O P T I O N S   S U M M A R Y

```
Expires   Stock Quantity     Price Change Current    Value Commisson   Profit
02/18  27 IBM          400 C 35.00 19.00   55.25  8100.00    158.00  7442.00
                                                  --------- --------- --------
                                                   8100.00    158.00  7442.00
```

1.86 Stocks: Update Database Program

More information about the RS program will be provided to registered
users.

1.87 Stocks: Index

Studies/Point & Figure

Studies/PTPS

Studies/RSI

Studies/Stochastics

Studies/Trend Lines

Studies/Volume Price Trend

Support

Update Database Program

Window Format