BUSINESS GRAPHS 99

For the TI-99/4A

Pie Charts -- Bar Graphs -- Line Graphs

Totally Menu Driven !!

From Data to Copy in Minutes !!

No Programming Necessary !!!

BUSINESS GRAPHS 99

Menu Driven

Versatile

Fast !!

No Programming

Professional

FOR THE TI-99/4A

Requires Disk System and 32K with
Editor/Assembler or EXTENDED BASIC.
RS232 and 99/4 Printer Optional.

I. SYSTEM REQUIREMENTS.

A. Minimum requirements to run Business Graphs 99:

1. TI-99/4A (TM) Microcomputer.
2. 32K Memory Expansion.
3. Disk Drive and Controller.
4. Editor Assembler or Extended BASIC.

B. Optional Equipment.
1. RS232 Card or 100% compatible port.
2. TI 99/4 (TM) Impact Printer or 100% compatible printer.

C. Updates.
If sufficient demand is established additional loaders, printer drivers and options may be available in updated versions of Business Graphs 99. See update policy in section VII.

TI-99/4A and 99/4 are trademarks of Texas Instruments Inc.

II. BOOTING BUSINESS GRAPHS 99.

A. Initial.

1. Please make a copy of your Business Graphs 99 system disk using the Disk Manager II (TM) or other suitable copy program. ### NOTE: Business Graphs 99 makes use of the disk name BG-99 so your disk MUST be named BG-99 or the overlay system will not work properly.

2. Using the Editor/Assembler (TM) to boot.

   a. Select Editor/Assembler option from the menu screen.
   b. Select Load and Run option (#3) from the Editor Assembler option screen.
   c. Place Business Graphs 99 system disk in drive 1.
   d. Type DSK1.BG/99 and press <ENTER>.
   e. The Business Graphs 99 title screen will appear followed by the main menu.

3. Using EXTENDED BASIC.

   a. To boot from the Title Screen:
      Insert the Business Graphs 99 system disk.
      Select 2. EXTENDED BASIC Business Graphs 99 will automatically boot.
   b. To boot from EXTENDED BASIC type:
      RUN "DSK1.LOAD" and press <ENTER>.
   c. The Business Graphs 99 title screen will appear followed by the main menu.

   ##NOTE: The EXTENDED BASIC loader is slower than the Editor/Assembler loader but the program executes the at the same speed under either cartridge.

Editor/Assembler, Disk Manager II and TI EXTENDED BASIC are trademarks of Texas Instruments Inc.

B. BUSINESS GRAPHS 99 OPERATIONS.

1. Menu driven programs consist of a series of
    menus or option lists so no programming or key
    words are necessary to achieve results. The
    menu system of Business Graphs 99 lets you type
    data and menu choices at various points to
    create your graphs.

2. Editing with Business Graphs 99 is simple. The
    underline character "_" is used as the cursor.
    The left arrow or <FCTN><S> key combination is
    used to backspace. <ENTER> is used to enter data
    after typing it in. <FCTN><9> or "BACK" is
    used to move backward through the menus.
    <FCTN><=> "QUIT" is only activated at the main
    menu and returns control to the TI System
    monitor (COLOR BAR SCREEN).

3. Overlays are used to swap in and out the 3 major
    sections of the Business Graphs 99 program.
    These overlays call a section of the program in
    from disk drive 1. In multiple drive systems
    this works best if the system disk is left in
    drive 1. In single disk systems you will need
    to swap your data disk in and out when choosing
    a new type of graph (i.e. going from PIE to LINE
    If you should forget, an error message will
    appear. If this should happen just press a key,
    swap disks and try again.

4. At the Business Graphs 99 Main Menu,you may
    change the screen color by typing <CNTL><X>.
    You may change the foreground color by typing
    <CNTL><Z>.

III. PIE CHARTS.

Main Menu.

```
Business Graphs 99 Main Menu ( QUIT to Exit )

1. New Graph      (pie) 3. Draw Current Graph
2. Edit Current Graph   4. Print Current Graph
```

By typing the number key corresponding to your choice Business Graphs 99 will perform the requested action or display another menu, as appropriate.

Each of the following sections will explain a action or menu performed by Business Graphs 99. To move back to the Main Menu press <FCTN><9> or "BACK".

One caution: The current version of the program requires you press option "1. New Graph" when you begin the session or whenever you swap in an overlay (i.e. change to BAR or LINE graphs).

1. New Graph (this must be chosen first)

```
New Graph Type (Insert BG Disk)
A. Pie Graph      B. Bar Graph
C. Line Graph     D. Exit
   Choose A Graph Type _
```

The New Graph menu allows you to clear the current data from the memory or to "swap-in" the LINE or BAR graph programs or EXIT from the menu without damaging your current graph. The subtitle of the menu says (Insert BG Disk) because when you "swap-in" the LINE or BAR graph overlays the Business Graphs 99 systems disk must be drive 1 or the "Device Error" message will appear. If this message appears press a key insert the BG disk and try again. The New Graph Menu functions are as follows:

A. Pie Graph (begin editing Pie Graph).
B. Line Graph (swaps in Line Graphs).
C. Bar Graph (swaps in Bar Graphs).
D. Exit (Leave New Graph Menu).

2. Edit Current Graph.

The choice of "2. Edit Current Graph"
automatically begins the Pie Graph editing
cycle which consists of 2 parts: editing the
titles and number of slices, and editing the
data for each slice. Shown below are the two
editing screens which will allow you to type
in your choice for title, number of slices
and shade for each slice in the graph.

Edit Titles.

```
Title of Graph
Subtitle Below Graph
Number of Slices (2-6)
  Select -- Press Enter
```

The "Title" of the graph will be displayed
above the graph both on the screen when the
graph is drawn and on paper when printed.
The "Subtitle" is displayed below the graph.
The Pie program allows two to six slices.
When the prompt screen above appears you
will see the cursor "_" either in a blank
field or at the end of a previous entry.
Just type in your desired entry for the
field and press enter. The cursor will move
to the next field. If you make an error use
<FCTN><S> <-- to backspace and type over.
When the cursor stops and does not allow any
more entry, you have reached the end of the
field width. If you see an error in a
previous field, you may re-enter the Edit
Current Graph cycle from the Main Menu later
without loss of data.

Edit Slices.

```
Label for Slice
Value for Slice (1-999)
Color or Shade (0-20)
Explode Slice (Y or N)
```

The "Slice" editing screen will appear a
number of times corresponding to the number
of slices you choose to include in your
pie graph. The fields are completed same
as in "Title" editing above. Shades above 7
are colors. (For best results answer "Y" to
"explode" slices when using "color" (which
is only "color" on color VDT's.))

3. Draw Current Graph (draws the pie chart).

4. Print Current Graph.

The print option allows you to name the device you will be printing your graph on as well as compensate for the "aspect ratio" found on many printers. You may also stop the printer before the entire graph has printed by pressing <FCTN><4> "CLEAR".

Pie Printer Menu (BACK to Exit)
1. Device Name :
2. Aspect Ratio X: Y:
3. Print (<FCTN><4> Abort)

1. Device Name is the name your system uses addressing the printer. My system is set up as RS232.BA=4800.CR.TW . You must turn off the automatic linefeed carriage return pair which is sent to the printer so that the graphics can be printed (i.e. CR). I use TW to send two stop bits to my printer.

2. Aspect Ratio will allow you to adjust for the fact that a circle drawn on the screen or in the RAM of the computer looks like a football on the printer. My printer will draw close to round using an aspect ratio of X:50 Y:55. Feel free to experiment but the program will only compensate for X-axis aspect.

3. Print will print the graph and draw it on the screen also. To stop the printing early press the <FCTN><4> or "CLEAR" keys. Now you will need to type in the "blind" (i.e. no characters will show on the screen) to restart the program. Press <ENTER> then type BB-99<ENTER>. If the Main Menu comes up you can continue without losing data. Otherwise turn the computer off and restart.

IV.   LINE GRAPHS.

Main Menu.

```
'  Business Graphs 99 Main Menu ( QUIT to Exit )

1. New Graph      (line) 4. Draw Current Graph
2. Get Old Graph         5. Save Current Graph
3. Edit Current Graph    6. Print Current Graph
```

By typing the number key corresponding to your
choice Business Graphs 99 will perform the requested
action or display another menu, as appropriate.

Each of the following sections will explain an
action or menu performed by Business Graphs 99.   To
move back to the Main Menu press <FCTN><9> or "BACK"
at most any point in the program.

One caution, the current version of the program
requires you press option "1. New Graph" when you
begin using Line or whenever you swap in an overlay
(i.e. change to BAR or PIE graphs).

  1.   New Graph (this must be chosen first)

```
        New Graph Type (Insert BG Disk)
        A. Pie Graph      C. Bar Graph
        B. Line Graph     D. Exit
          Choose A Graph Type B_
```

The New Graph menu allows you to clear the
data or garbage from the memory or to
"swap-in" the PIE or BAR graph programs or
Exit from the menu without damaging the current
graph you are working on.   The title of the
menu says (Insert BG Disk) because when you
"swap-in" the PIE or BAR graph overlays
the Business Graphs 99 systems disk must be
drive 1 or the "Device Error" message will
appear.   If this message appears press a key
insert the BG disk and try again.   The New
Graph Menu functions are as follows:

A.   Pie Graph(swaps in the PIE Graph).
B.   Line Graph (Begins Editing Line Graphs).
C.   Bar Graph (swaps in Bar Graphs).
D.   Exit (Leave New Graph Menu).

2. Get Old Graph

Business Graphs 99 can save and retrieve
ASCII files which represent the data items
(records) for either line or bar graphs. For
a line graph the program saves 100 data items
(records) consisting of the fields DATA
NUMBER, MIN VALUE, MAX VALUE, and
IDENTIFICATION. The program will retrieve a
file composed of from ten to one hundred data
items. These data item files may be created
by the Edit Current Graphs routines of
Business Graphs 99 or by Microsoft Multiplan
(TM) or any ASCII file generation program.
See section VI for file parameters.

In order to save or retrieve a data item file
you must use a properly initialized disk.
Disk Manager II (TM) formatted disks will
work. When you choose "2. Get Old Graph" or
"5. Save Current Graph" the following menu
appears.

Save/Retrieve Graph (BACK to EXIT)
A. Filename:
B. Save Graph   D. Retrieve Graph
C. DSK1 Directory

A. Filename--you must enter a valid filename
before you attempt to Save or Retrieve a
graph file. The filename must be a proper
filename including the drive specification
(i.e. DSK1.OLDGRAPH or DSK.GRAF.OLDGRAPH).

B. Save Graph--press "B." to save the current
graph to the filename you chose in "A.".

C. DSK1 Directory--will show the directory of
the disk in the #1 drive. When finished
viewing the directory press any key to
continue.

D. Retrieve Graph--press "D." to read into
memory a previously created graph with a
filename entered in option "A. Filename".

3. Edit Current Graph.

    The choice of "3.   Edit Current Graph"
    automatically begins the Line Graph editing
    cycle which consists of 3 parts, editing the
    titles which are to appear on the graph,
    editing the ranges of the graph and editing
    data for the graph. Shown below is the main
    editing screen which will allow you to choose
    between editing titles, ranges or data .

        EDITING MENU (Back to Exit)
        A. Edit Titles
        B. Edit Ranges
        C. Edit Data

A. Edit Titles--brings up the title editing
    screen which allows you to enter new or
    edit current Titles above and below or
    horizontal and vertical to the graph.

        Title Above Graph   :
        Subtitle Below Graph   :
        Horizontal Axis Title   :
        Vertical Axis Title   :

B. Edit Ranges--This screen controls the
    drawing and printing displays for
    the number, size and placement of the
    graphics which represent your data. By
    changing various elements of the range
    option you can create totally different
    graphic representations of the same data.

Vertical Range (-999 - 999) MIN: MAX:
Horiz Display Begins At(0-100):
Horiz Display Range(1-100) MIN: MAX:
Horiz Data Density (1-100)   :

    1. Vertical Range--is the "zoom" function
        which sets the upper and lower
        boundaries of the display. (i.e. a
        data value of 10 looks much bigger
        in the vertical range of 1-20 than in
        the vertical range of 1-500. To start
        try MIN slightly lower than your lowest
        data value and MAX higher than your
        highest.

2. Horizontal Display Begins at(0-100)-- lets you "center" or otherwise adjust your graph display from side to side for a more interesting effect. **NOTE: this version of the program lets you "wrap" the data off the edge of the graph with sometimes unusual results.

3. Horizontal Display Range--this choice lets your graph serve as a window on your database displaying all or part of the data items. **NOTE: your display range should be equal to or less than your "data density" (see 4. below). For example, 12 data items are entered representing net and gross sales for 1983 using the data editing menu (see C. below). To show the entire 12 months your horizontal display range would be MIN: 1 MAX: 12, to display the first 3 months MIN: 1 MAX: 3 etc.

4. Horizontal Display Density--controls proportional spacing between display items on the grid. **NOTE: the display density should be equal to or greater than the number of displayed items chosen in "3. Horizontal Display Range".

C. Edit Data--Your line graph is created from numbers and labels entered and stored in a database using the "Edit Data" function. Choosing "C. Edit Data" brings up the "Data Item Editing" menu which allows you to enter or edit a single data item (record) or enter or edit a number of records sequentially.

Data Item Editing(BACK to Exit)
   A. Edit Item #(1-100):
   B. Sequential Editing at #(1-100):

   A. Edit Item #--will allow you to choose the data item (record) which you wish to edit. (i.e. to edit or enter data for data item 1, type A then type 1 and <ENTER>).

   B. Sequential Editing at #--will begin an "editing loop" which will allow you to enter or edit data in the records without returning to this menu each time.

Press Enter to edit BACK to exit
Data Number (0-999):
Data (-999 -- 999) MIN: MAX:
Identification of Item:

With the choice of either A. or B.
the screen seen above is displayed.
Pressing <ENTER> will allow you to
type in a "data number" of your own
choice. This is not shown on the
graph but will allow you to easily
keep track of each record.

The "DATA" is a MIN and MAX value
which will determine the "shape" of
your line graph. Enter a value
between -999 and 999. If your data is
larger or smaller you will need to
perform "scaling" on every value
before entering. "Scaling" is nothing
more than dividing each data number by
a constant value say 1000 so it will
fit in the range -999 to 999. Every
graphic program requires scaling.
Business Graphs 99 allows you to scale
for values out of the -999 to 999
range to your taste.

"Identification of Item" lets you
either create a label to go under the
data displayed on the grid or some
identity for this data item (record)
of your choice. To allow the
identification to be printed on the
graph put an asterisk (*) as the last
character. (i.e. "Jan*" would print
"Jan" on the graph under the data
representation, but "Jan" put in the
identification of item blank would not
print.) You must use your discretion
when using labels. If you want to
display 100 data items and each has
a label 5 characters wide there will
simply not be enough space.

**NOTE you must press <FCTN><9> or
BACK before pressing ENTER to return
to the previous menu.

4. Draw Current Graph. The main menu choice of
    "Draw Current Graph" allows you to draw the
    current graph from the data, titles and ranges
    you have previously selected in the edit menu.
    Several types of "line" graphs are available
    and the "grid" may be turned on or off.

        Draw Graph Menu
        1. HiLo Plot   3. Area Plot
        2. Line Plot   4. Grid on/off 1

    1. HiLo Plot--option will plot a vertical
        line for each data element in range
        plotting vertically between MIN and MAX
        values. Up to 100 data items may be
        plotted.

    2. Line Plot--option will plot a line from
        MAX of one data item to MAX in the next
        and from MIN to MIN for all data items
        selected in range. The Edit Range
        function will allow you to "ZOOM" out
        until the lines are almost parallel or
        "ZOOM" in until the lines are outside the
        vertical range of the grid. Lines which
        extend "outside" the grid are extended to
        the point where they leave the grid (try
        it).

    3. Area Plot--option combines both Line and
        HiLo plot to form areas (convex hulls or
        manifolds) which can represent, for
        instance, the pricing range within which a
        product can be profitably sold.

    4. Grid on/off 1--option lets you turn on or
        off the grid lines(0 = "off", 1 = "on").
        If you are using line plot to plot 50
        point sets the vertical grid lines should
        be turned "off".

        **NOTE--Please experiment with all these
        options until you see what you like,
        thousands of combinations are possible.

5.   Save Current Graph

Business Graphs 99 can save and retrieve
ASCII files which represent the data items
(records) for either line or bar graphs. For
a line graph the program saves 100 data items
(records) consisting of the fields DATA
NUMBER, MIN VALUE, MAX VALUE, and
IDENTIFICATION. The program will retrieve a
file built up of from ten to one hundred data
items. These data item files may be created
by the Edit Current Graphs routines of
Business Graphs 99 or by Microsoft Multiplan
(TM) or any ASCII file generation program.
See section VI for file parameters.

In order to save or retrieve a data item file
you must use a properly initialized disk.
Disk Manager II (TM) formatted disks will
work. When you choose "2. Get Old Graph" or
"5. Save Current Graph" the following menu
appears.

    Save/Retrieve Graph (BACK to EXIT)
    A. Filename:
    B. Save Graph   B. Retrieve Graph
    C. DSK1 Directory

A. Filename--you must enter a valid filename
    before you attempt to Save or Retrieve a
    graph file. The filename must be a proper
    filename including the drive specification
    (i.e. DSK1.OLDGRAPH or DSK.GRAF.OLDGRAPH).

B. Save Graph--press "B." to save the current
    graph to the filename you choose in "A.".

C. DSK1 Directory--will show the directory of
    the disk in the #1 drive. When finished
    viewing the directory press any key to
    continue.

D. Retrieve Graph--press "D." to read the old
    graph you named in "A." above into the
    memory.

6. Print Current Graph. The main menu choice of
   "Print Current Graph" allows you to print the
   current graph from the data, titles and ranges
   you have previously selected in the edit menu.
   Several types of "line" graphs are available
   and the "grid" may be turned on or off.

   Print Menu(BACK to Exit/CLEAR to Abort)
   1. Device Name:
   2. HiLo Print   4. Area Print
   3. Line Print   5. Grid on/off 1

   1. Device Name:--Enter the name of your
      printer here before you select #2, 3, or
      4. My printer is set up as follows:
      RS232.BA=4800.CR . You must use the "CR"
      option on the setup to stop automatic
      linefeed-carriage returns being sent while
      the printer is doing graphics.

   2. HiLo Print-option will print the HiLo plot
      in a manner similar to the way it was
      plotted on the screen.

   3. Line Print-option will print the Line plot
      in a manner similar to the way it was
      plotted on the screen.

   4. Area Print-option combines both Line and
      HiLo to print area graphs similar to
      the area plots on the screen.

   5. Grid on/off 1--option lets you turn on or
      off the grid lines(0 = "off", 1 = "on").
      If you are using line print to show 50 or
      more point sets it may look better if the
      vertical grid lines are turned "off".

   **Note--when you must use the "print abort" by
           using the <FCTN><4> or "CLEAR" to stop
           the printing you must restart the
           program. To do this press <ENTER> then
           type BG-99 and press <ENTER>. Since
           the program is stopped you will not see
           what you type "echoed" to the screen.
           If the Business Graphs 99 Main Menu
           does not appear, try the above
           procedure again. If it still does not
           restart you will have to turn the
           computer off and on and reboot.

V.   BAR GRAPHS.

Main Menu.

Business Graphs 99 Main Menu (QUIT to Exit)

1. New Graph   (bar)   4. Draw Current Graph
2. Get Old Graph   5. Save Current Graph
3. Edit Current Graph   6. Print Current Graph

By typing the number key corresponding to your choice,Business Graphs 99 will perform the requested action or display another menu, as appropriate.

Each of the following sections will explain an action or menu performed by Business Graphs 99. To move back to the Main Menu press <FCTN><9> or "BACK" at most any point in the program.

One caution, the current version of the program requires you press option "1. New Graph" when you begin using Bar or whenever you swap in an overlay (i.e. changes to BAR or PIE graphs).

   1.   New Graph (this must be chosen first)

New Graph Type (Insert BG Disk)
A. Pie Graph   C. Bar Graph
B. Line Graph   D. Exit
   Choose A Graph Type C_

The New Graph menu allows you to clear the data or garbage from the memory or to "swap-in" the PIE or LINE graph programs or Exit from the menu without damaging the current graph you are working on. The title of the menu says (Insert BG Disk) because when you "swap-in" the PIE or LINE graph overlays the Business Graphs 99 systems disk must be drive 1 or the "Device Error" message will appear. If this message appears press a key insert the BG disk and try again. The New Graph Menu functions are as follows:

A.   Pie Graph(swaps in the PIE Graph).
B.   Line Graph (swaps in Line Graphs).
C.   Bar Graph (begins editing Bar Graphs).
D.   Exit (Leave New Graph Menu).

2.   Get Old Graph

Business Graphs 99 can save and retrieve
ASCII files which represent the data items
(records) for either line or bar graphs. For
a bar graph the program saves 20 data items
(records) consisting of the fields DATA
NUMBER, MIN VALUE, MAX VALUE, and
IDENTIFICATION. The program will retrieve a
file built up of from ten to twenty data
items. These data item files may be created
by the Edit Current Graphs routines of
Business Graphs 99 or by Microsoft Multiplan
(TM) or any ASCII file generator program.
See section VI for file parameters.

In order to save or retrieve a data item file
you must use a properly initialized disk.
Disk Manager II (TM) formatted disks will
work. When you choose "2. Get Old Graph" or
"5. Save Current Graph" the following menu
appears.

```
     Save/Retrieve Graph (BACK to EXIT)
     A.  Filename:
     B.  Save Graph     D.  Retrieve Graph
     C.  DSK1 Directory
```

A. Filename--you must enter a valid filename
   before you attempt to Save or Retrieve a
   graph file. The filename must be a proper
   filename including the drive specification
   (i.e. DSK1.OLDGRAPH or DSK.GRAF.OLDGRAPH).

B. Save Graph--press "B." to save the current
   graph to the filename you choose in "A.".

C. DSK1 Directory--will show the directory of
   the disk in the #1 drive. When finished
   viewing the directory press any key to
   continue.

D. Retrieve Graph--press "D." to read the old
   graph you named in "A." above into the
   memory.

3. Edit Current Graph.

The choice of "3. Edit Current Graph" automatically begins the Bar Graph editing cycle which consists of 3 parts, editing the titles which are to appear on the graph, editing the ranges of the graph and editing data for the graph. Shown below is the main editing screen which will allow you to choose between editing titles, ranges or data .

```
EDITING MENU (Back to Exit)
  A. Edit Titles
  B. Edit Ranges
  C. Edit Data
```

A. Edit Titles--brings up the title editing screen which allows you to enter new or edit current Titles above and below or horizontal and vertical to the graph.

```
Title Above Graph        :
Subtitle Below Graph     :
Horizontal Axis Title    :
Vertical Axis Title      :
```

B. Edit Ranges--This screen controls the drawing and printing displays for the number, size and placement of the graphics which represent your data. By changing various elements of the range option you can create totally different graphic representations of the same data.

```
Vertical Range ( -999 - 999) MIN:    MAX:
Horiz Display Begins At( 1-20 ):
Horiz Display Range( 1-20 ) MIN:    MAX:
Horiz Data Density ( 1-20 )    :
```

1. Vertical Range--is the "zoom" function which sets the upper and lower boundaries of the display. (i.e. a data value of 10 looks much bigger in the vertical range of 1-20 than the vertical range of 1-500. To start try MIN slightly lower than your lowest data value and MAX higher than your highest.

2. Horizontal Display Begins at(1-20)--
   lets you "center" or otherwise adjust
   your graph display from side to side
   for a more interesting effect. **NOTE:
   this version of the program lets you
   "wrap" the data off the edge of the
   graph with sometimes unusual results.

3. Horizontal Display Range--this choice
   lets your graph serve as a window on
   your database displaying all or part of
   the data items. **NOTE: your display
   range should be equal to or less than
   your "data density" (see 4. below).
   For example, 12 data items are entered
   representing net and gross sales for
   1983 using the data editing menu (see
   C. below). To show the entire 12
   months your horizontal display range
   would be MIN: 1 MAX: 12, to display the
   first 3 months MIN: 1 MAX: 3 etc.

4. Horizontal Display Density--controls
   proportional spacing between display
   items on the grid. **NOTE: the display
   density should be equal to or greater
   than the number of displayed items
   chosen in "3. Horizontal Display
   Range".

C. Edit Data--Your line graph is created from
    numbers and labels entered and stored in a
    database using the "Edit Data" function.
    Choosing "C. Edit Data" brings up the
    "Data Item Editing" menu which allows you
    to enter or edit a single data item
    (record) or enter or edit a number of
    records sequentially.

    Data Item Editing(BACK to Exit)
      A. Edit Item #(1-20):
      B. Sequential Editing at #(1-20):

    A. Edit Item #--will allow you to choose
        the data item (record) which you wish
        to edit. (i.e. to edit or enter data
        for data item 1, type A then type 1
        and <ENTER>).

    B. Sequential Editing at #--will begin an
        "editing loop" which will allow you to
        enter or edit data in the records
        without returning to this menu each
        time.

Press Enter to edit BACK to exit
Data Number (0-999):
Data (-999 -- 999) MIN: MAX:
Identification of Item:

With the choice of either A. or B.
the screen seen above is displayed.
Pressing <ENTER> will allow you to
type in a "data number" of your own
choice. This is not shown on the
graph but will allow you to easily
keep track of each record.

The "DATA" is a MIN and MAX value
which will determine the "shape" of
your line graph. Enter a value
between -999 and 999. If your data is
larger or smaller you will need to
perform "scaling" on every value
before entering. "Scaling" is nothing
more than dividing each data number by
a constant value say 1000 so it will
fit in the range -999 to 999. Every
graphic program requires scaling.
Business Graphs 99 allows you to scale
for values out of the range of -999 to
999 to your taste.

"Identification of Item" lets you
either create a label to go under the
data displayed on the grid or some
identity for this data item (record)
of your choice. To allow the
identification to be printed on the
graph put an asterisk (8) as the last
character. (i.e. "Jan8" would print
"Jan" on the graph under the data
representation, but "Jan" put in the
identification of item blank would not
print.) You must use your discretion
when using labels. If you want to
display 20 data items and each has
a label 6 characters wide there will
simply not be enough space.

8NOTE at the above menu you must press
<FCTN><9> or BACK before pressing
ENTER to return to the previous menu.

4. Draw Current Graph. The main menu choice of
    "Draw Current Graph" allows you to draw the
    current graph from the data, titles and ranges
    you have previously selected in the edit menu.
    Several types of "bar" graphs are available.
    The bars may also be shaded.

              Draw Graph Menu
    A. Single Bar(Uses MAX)   MAX Shade(0-6)
    B. Stacked Bar(MIN/lower)   MIN Shade(0-6)
    C. Double Bar(MAX/left)

    A. Single Bar--option plots a single bar for
        each data item in range using the MAX
        value to generate the vertical size of the
        bar. After you choose "A." you are
        allowed to determine the "shade" of the
        bar (i.e. MAX shade(0-6)). Once the shade
        is chosen the graph is drawn on the
        screen.

    B. Stacked Bar--option plots a bar for the
        MIN value then plots the difference
        between MAX and MIN values as another bar
        "stacked on top of" the first one. After
        you choose "B." you are allowed to
        determine the "shade" for the "top" = MAX
        bar and the "bottom" = MIN bar. Once the
        shades are chosen the graph is drawn on the
        screen.

    C. Double Bar--option plots a pair of bars
        "side by side" representing the MAX and
        MIN values for each data item within
        range. Once you choose "C." you are
        allowed to determine the shade for the MIN
        and MAX bars. Once the shades are chosen
        the graph is drawn on the sceen.

        **NOTE--Please experiment with various bar
        graph types and shades until you like what
        you see. Also try using the Edit Range
        function to "Zoom" in and out and center
        the bars left or right. There are
        thousands of combinations possible.

5. Save Current Graph

Business Graphs 99 can save and retrieve
ASCII files which represent the data items
(records) for either line or bar graphs. For
a bar graph the program saves 20 data items
(records) consisting of the fields DATA
NUMBER, MIN VALUE, MAX VALUE, and
IDENTIFICATION. The program will retrieve a
file built up of from ten to twenty data
items. These data item files may be created
by the Edit Current Graphs routines of
Business Graphs 99 or by Microsoft Multiplan
(TM) or any ASCII file generator program.
See section VI for file parameters.

In order to save or retrieve a data item file
you must use a properly initialized disk.
Disk Manager II (TM) formatted disks will
work. When you choose "2. Get Old Graph" or
"5. Save Current Graph" the following menu
appears.

> Save/Retrieve Graph (BACK to EXIT)
> A. Filename:
> B. Save Graph   D. Retrieve Graph
> C. DSK1 Directory

A. Filename--you must enter a valid filename
    before you attempt to Save or Retrieve a
    graph file. The filename must be a proper
    filename including the drive specification
    (i.e. DSK1.OLDGRAPH or DSK.GRAF.OLDGRAPH).

B. Save Graph--press "B." to save the current
    graph to the filename you choose in "A.".

C. DSK1 Directory--will show the directory of
    the disk in the #1 drive. When finished
    viewing the directory press any key to
    continue.

D. Retrieve Graph--press "D." to read the old
    graph you named in "A." above into the
    memory.

6. Print Current Graph. The main menu choice of
    "Print Current Graph" allows you to print the
    current graph from the data, titles and ranges
    you have previously selected in the edit menu.
    The bars may also be shaded.

    Print Menu(BACK to Exit/CLEAR to Abort)
    A. Device Name: MAX Shade(0-6)
    B. Single Bar   MIN Shade(0-6)
    C. Stacked Bar   D. Double Bar

    A. Device Name:--Enter the name of your
        printer here before you select #2, 3, or
        4. My printer is set up as follows:
        RS232.BA=4800.CR . You must use the "CR"
        option on the setup to stop automatic
        linefeed-carriage returns being sent while
        the printer is doing graphics.

    B. Single Bar--option will print the Single
        Bar graph in a manner similar to the way
        it was drawn on the screen.

    C. Stacked Bar--option will print the Stacked
        Bar graph in a manner similar to the way
        it was drawn on the screen.

    D. Double Bar--option will print the Double
        Bar graph in a manner similar to the way
        it was drawn on the screen.

    **NOTE:--If you draw the Bar Graph on the
            screen before you attempt to print it the
            Shades will "carry over" so all you have
            to do is press <ENTER> when the MAX Shade
            and MIN Shade options appear.

    **Note--when you must use the "print abort" by
            using the <FCTN><4> or "CLEAR" to stop
            the printing you must restart the
            program. To do this press <ENTER> then
            type BG-99 and press <ENTER>. Since
            the program is stopped you will not see
            what you type "echoed" to the screen.
            If the Business Graphs 99 Main Menu
            does not appear, try the above
            procedure again. If it still does not
            restart you will have to turn the
            computer off and on and reboot.

VI. ASCII—MULTIPLAN (TM) Files.

A. Microsoft Multiplan (TM) is an example of a program
which will create ASCII files which can be read by
Business Graphs 99. The following procedure is
used to create a file which Business Graphs 99 will
read using Multiplan.

1. Place the letter "A" in R1C1.

2. Enter your DATA NUMBER in R2C1.
Enter your MIN VALUE in R2C2.
Enter your MAX VALUE in R2C3.
Enter IDENTIFICATION in R2C4.

3. Repeat step two for each additional data item
(record) you wish to add to the database. Each
new data item will begin in the row directly
below the first (i.e. the MIN VALUE for data
item 2 will go in R3C2).

4. Save your file to disk using the standard
Multiplan "Transfer" command.

5. Using the "Printer" option save (print) the data
on to a disk file. First use the "Options" to
set up the area to save (i.e. R1:4C1:20). Next
use the "Margins" option to set up the size of
the file. You must set the print length equal
to the number of rows (data items) you have
chosen and the page length equal to one more
than the print length (i.e. Print Length=20,
Page Length=21). Business Graphs 99 will not read
the file in any other format. Once you have set
the margins use the "File" print option to save
the database.

A

1	100	101	JAN	100000	101010
2	125	121	FEB	125000	121212
3	129	111	MAR	128500	111111
4	133	108	APR	133225	107501
5	90	113	MAY	90004	112500
6	113	90	JUN	112500	90004
7	108	133	JUL	107501	133225
8	111	129	AUG	111111	128500
9	121	125	SEP	121212	125000
10	101	100	OCT	101010	100000

B. Above is a database created in Multiplan which will
    will show how useful Mulitplan can be for "scaling"
    your data for use with Business Graphs 99.

    1. Note the "A" in R1C1 position 1; this is the
        file identifier for Business Graphs 99.

    2. Column 1 is the "DATA NUMBER" field. If you
        want simple ordered DATA NUMBERS you might try
        this trick.

        a. Enter "1" in R2C1.
        b. Enter the formula R[-1]+1 in R3C1.
        c. Copy R3C1 down for as many rows as you will
            have data items. Multiplan will auto-
            matically create your DATA NUMBERS.

    3. Columns 2 and 3 contain MIN VALUE and MAX
        VALUE respectively which we have "scaled from
        column 5 and 6 using Multiplan functions.
        Column 4 contains the IDENTIFICATION field.

    4. In column 5 are the original MIN VALUES and in
        column 6 are the original MAX VALUES beginning
        in R2C5 and R2C6 respectively.

    5. Now to "scale" the values in column 5 and 6
        into "range" for Business Graphs 99 we have
        divided each MAX and MIN value by 1000. That
        is, we entered the formula C[+3]/1000 into
        R2C2 and R2C3 and copied it as far down the
        column as their were data values in column 5
        and 6.

6. Next, you will see that we have (after RECALC)
    "real" values (with decimal points) in columns
    2 and 3. Business Graphs 99 accepts only
    integer (whole) values. To convert we employed
    the "Format" command, chose the "Cells" option
    and changed the data type to "Int" for column 2
    and 3. If you try the values we have in the
    table above and got it right your table should
    look just like the one on the previous page.

7. To store the model on disk first save a copy
    under one name using the "Transfer" command.
    The create a file readable by Business Graphs
    99 using the "Printer" command and the "File"
    option as explained on the previous page.

C. Business Graphs 99 will read ASCII files which are
    in the proper format for the Line and Bar graph
    databases. The first record of the file must
    contain the letter "A" in the first position. The
    second through one-hundredth record must contain
    the four elements of data which comprise a Business
    Graphs 99 data item or record. The first element
    is DATA NUMBER followed by MIN VALUE, MAX VALUE AND
    IDENTIFICATION. Each data element must be
    separated by one or more blanks. The following
    RANGE restrictions apply:

	Character Type	Data Type	RANGE
DATA NUMBER	Decimal Digit	Integer	1 - 999
MIN VALUE	Decimal Digit	Integer	-999 - 999
MAX VALUE	Decimal Digit	Integer	-999 - 999
IDENTIF.	Character	String	0 - 8 Chars

VII.   DEFAULT SETTINGS.

Four default settings may be set up by the user for
convenience. However, this requires writing to the
BUSINESS GRAPHS 99 system disk so it should only be
done to a copy not the original! Repeat, do not
configure your original system disk. Please make a
copy. If you don't know how to make a copy either look
in your disk drive manual or ask someone in the local
user group to help you.

You may set the default background and foreground
colors for the values shown by number:

TRANSPARENT	0	MED. RED	8
BLACK	1	LT. RED	9
MED. GREEN	2	DK. YELLOW	10
LT. GREEN	3	LT. YELLOW	11
DK. BLUE	4	DK. GREEN	12
LT. BLUE	5	MAGENTA	13
DK. RED	6	GRAY	14
CYAN	7	WHITE	15

You may set up the default output file such as PIO.CR
instead of the current RS232.BA=4800.CR.

The "micro-linefeed" may be changed from the current
value of 21/216 for the TI-99/4A printer and other
EPSON compatibles like the PANASONIC 1091. You may
change this to 14 which will set it at 14/144 which is
the setting GEMINI-10X printers use. At the printer
menu in each graph type you may press "X" instead of a
number, this will allow testing of the micro-linefeed
setting before you configure your disk.

Set the defaults as follows:

Load the program from your backup disk leave it in
drive 1 without write protect tab. Choose "1. New
Graph" then "B. Line Graph". When the drive stops
press <CNTL><S>. Make your choices at each of the
configuration options. The drive will run after the
last option is chosen. Your copy is now configured.
If by chance you tried to configure your original
system disk and clobbered it refer to the warranty
section, send your $10 for replacement along with the
original system disk and your configuration choices.

VIII. UPDATES AND WARRANTY.

The enclosed registration card is your ticket to future updates of Business Graphs 99 and warranty service. You must complete the card, sign it and return it to us in order to become a registered user. If you buy Business Graphs 99 from a registered user you may write to us and apply for registered user status.
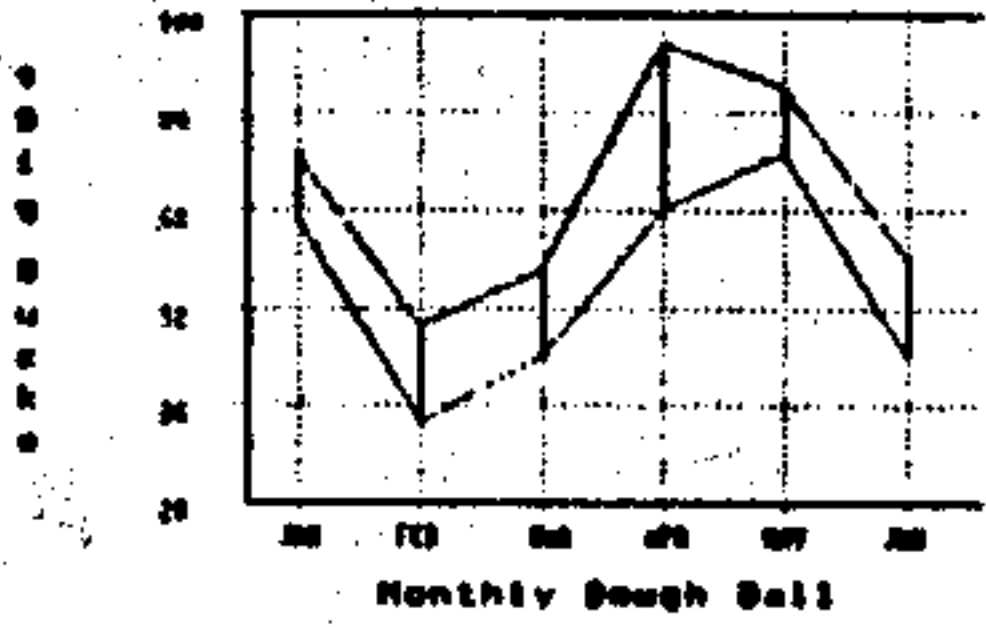
1. Update policy--all registered users (see above) are eligible for any update of Business Graphs 99 which is released. To receive your update you will be required to return your original disk with its serial number label intact and a small fee to cover shipping and handling.

2. Warranty--Any defective disk or software will be replaced if returned within 90 days. If you erase or damage the original system disk return it with $10 for replacement (i.e. please make a backup copy). This software is like a do-it-yourself book, it is for your use and you are the judge of its accuracy and usefulness. The author is not responsible for any damage incurred by you, your associates or customers as a result of the use of Business Graphs 99.

3. Fair Use Agreement--Under the copyright laws this software is like a book. You may lend it to a friend for use on his machine but your machine at home can't run it at the same time. You may sell the software but you can't retain a copy. You may use it on any computer but not more than one computer at a time. You may not put your name on any or all of the software as author.

   The paragraph above is a fair use agreement pioneered by Modula Corporation in Provo, Utah as a fair and reasonable use agreement minus all the jargon. They call it Pournelle logic in honor of Jerry Pournelle, advocate of fair and reasonable software use agreements. We would like to echo Modula Corporation's warning on piracy. If you want to see something scary, violate the agreement above. Our lawyers have been instructed to take all of your money then tell your mother what kind person you really are!
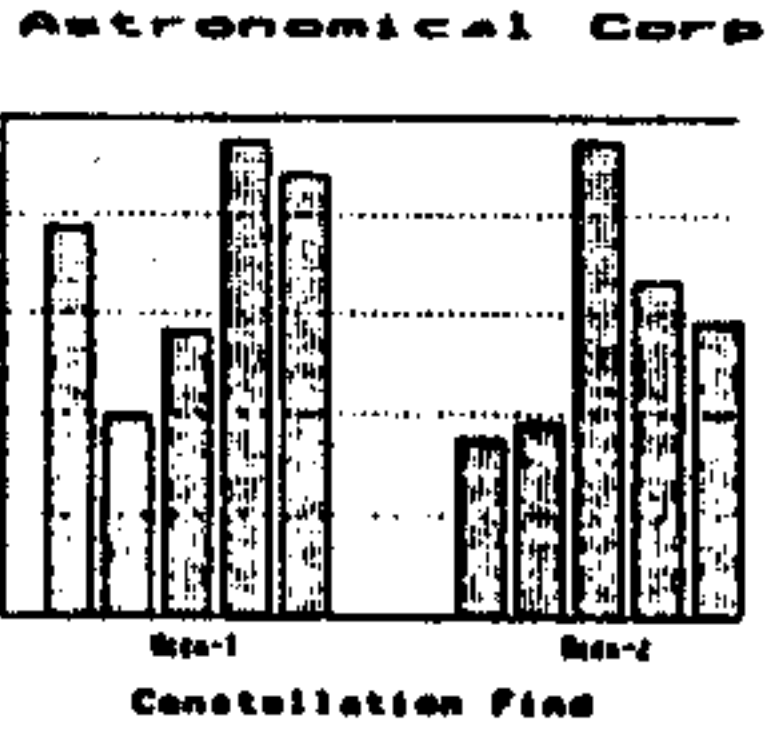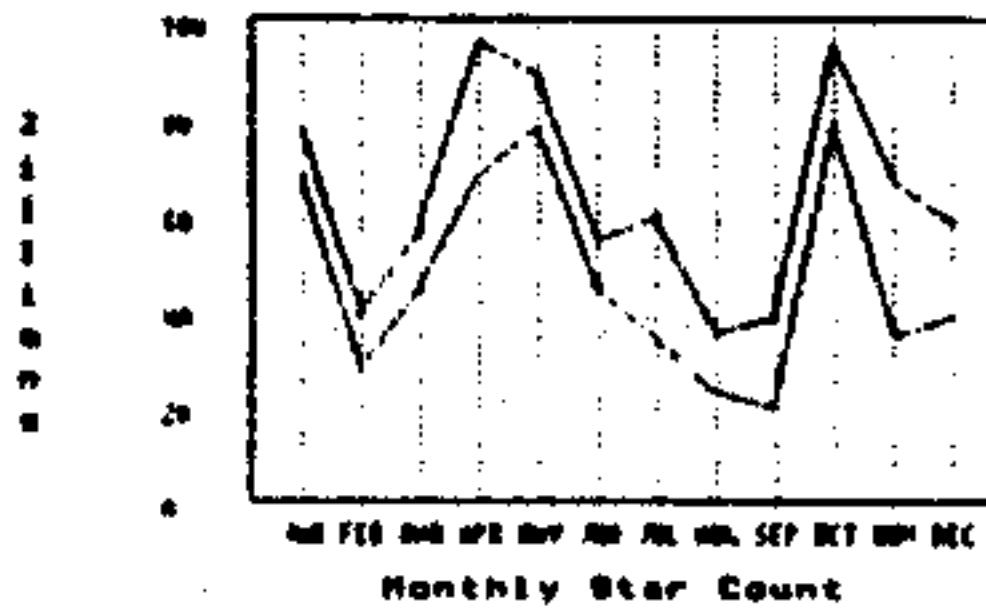
Peter Piper's Pies

Yummie Pudding
Pitless Cherry
Perfect Peach
Blueberry Blue
Grannies Apple
Choco-Mud
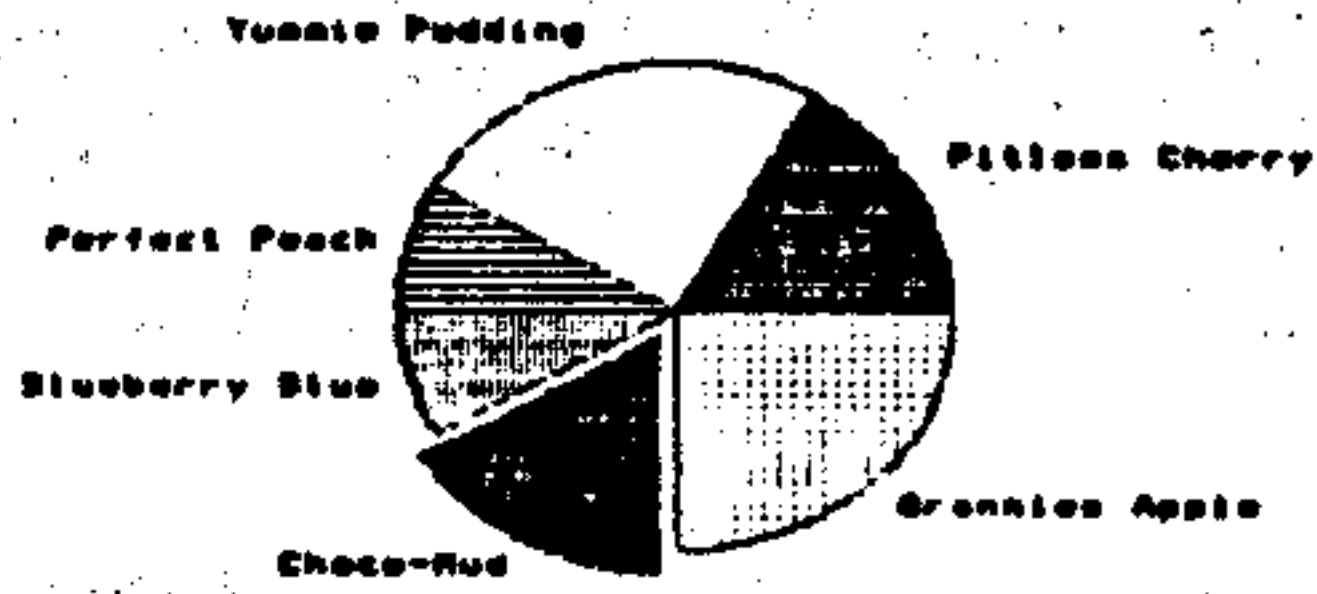
Sales By Pie Type

Peter Piper's Pies

Monthly Dough Ball

Pie Profit Windows

Astronomical Corp

Constellation Find

Heavenly Gazers

Astronomical Corp.

Monthly Star Count

Heavenly Observer

Bitter Blue Corp.

Monthly Profits
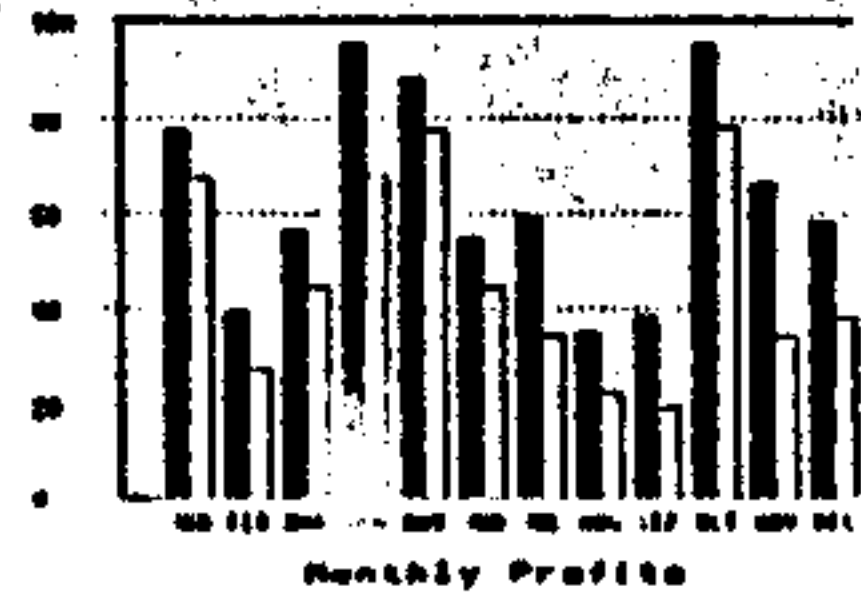
Computer Peddlers

Astronomical Corp.

Venus
Earth
Mercury
Mars
Jupiter
Saturn
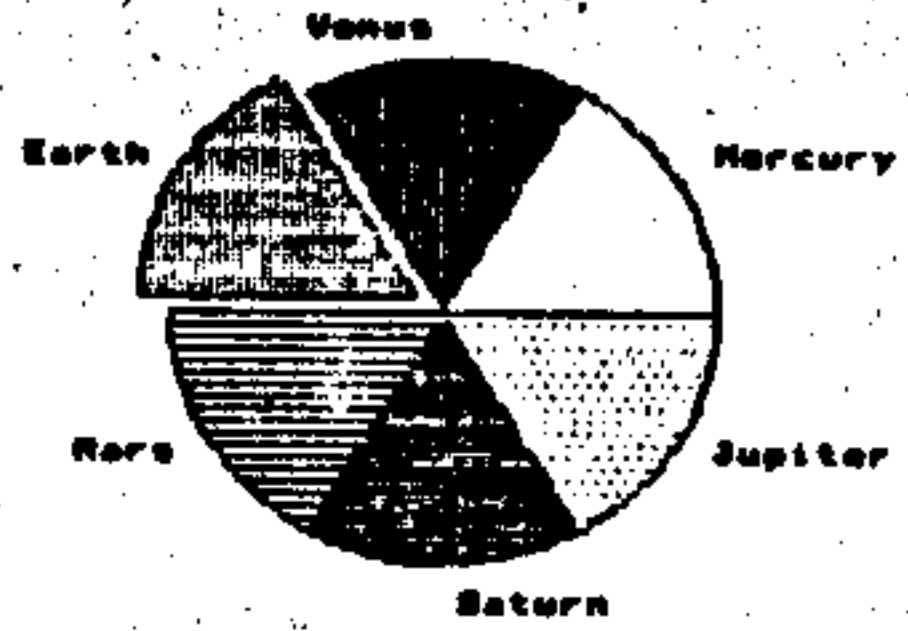
Heavenly Observer

Peter Piper's Pies

Mud by Mud Tally
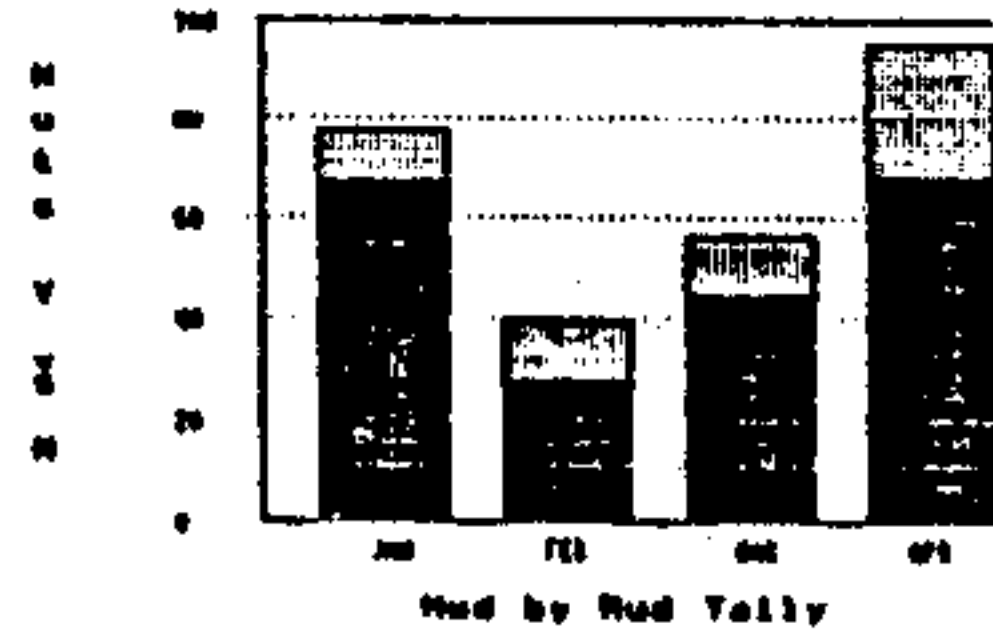
Choco-Mud Pie Sale

Bitter Blue Corp.

Dow Jones Indust.

Computer Peddler's