WB1_3

COLLABORATORS

	TITLE : WB1_3		
ACTION	*NAME*	*DATE*	*SIGNATURE*
WRITTEN BY		July 10, 2022	

REVISION HISTORY

NUMBER	DATE	DESCRIPTION	NAME

Contents

Chapter 1

WB1_3

1.1   main

                    A Guide to Workbench 3.1 on the A1200/A4000 v2.0

          by
          Peter J. Hutchison
          - April 23th 2000
                    CONTENTS

          1
           The Menus

          2
           The Mouse

          3
           WB Programs

          4
           AmigaDOS

          5
           Arexx Commands

          6
           Common Problems

          7
           Improving WB3

          8
           Changes since WB2

          9
           Changes with WB3.5

        This file is Freeware and may be distributed unmodified

1.2   1. The Menus

All the available menus are described below. To get a menu ↩
to appear,
click on the right hand button on the mouse and move the pointer to the
title bar at the top. Short cuts are shown in brackets. Use the right
amiga button and the letter to initiate the shortcut.

1.1 Workbench menu

1.2 Window menu

1.3 Icon Menu

1.4 Tools Menu

Goto Contents

1.3   1.1 Workbench menu

1.1.1 Backdrop (B)

This option specifies whether Workbench is displayed within a Window or a
backdrop screen. If ticked then the screen is a backdrop. To save this,
clear any windows and use Icons, Snapshot, Window.

1.1.2 Execute Command (E)

This option allows you to execute any AmigaDOS command without having to
start up a Shell or CLI window. Enter the command you wish, with
parameters and a window will appear with the results. Click on Close
Window gadget to remove the window.

1.1.3 Redraw all

This option redraws all the icons on screen that may not have been
refreshed due to badly programmed software. Hardly used these days.

1.1.4 Update all

This re-reads all mounted disks and opened drawers and redraws the entire
display. Useful if something has been changed via the Shell and not
updated on the Workbench screen.

1.1.5 Last Message

Repeats the last message displayed in the title bar on Workbench.

1.1.6 About (?)

Displays the version of Workbench and Kickstart you are using.

```
1.1.6 Quit (Q)
```

Shuts down Workbench only if all programs (esp. Commodities) have been
closed down. Will display a message like 'Cannot quit yet, there are x WB
launched program(s)' if there are some still running. Use Exchange to
close down commodities. Must start a Shell if you want to continue work
after Quitting.

1.4   1.2 Window Menu

```
1.2.1 New Drawer (N)
```

Creates a new drawer (or directory) in the currently selected window.
Defaults to 'Unnamed1'. You will be prompted to enter a new name.

```
1.2.2 Open Parent
```

Opens a window of the parent directory or drawer of the current window or
brings the existing parent window to the front.

```
1.2.3 Close (K)
```

Closes the currently selected window.

```
1.2.4 Update
```

Re-reads the contents of the current active windows and re-draws all the
icons.

```
1.2.5 Select Contents (A)
```

Selects all the icons in the current window. Useful after a clean up and
before a snapshot.

```
1.2.5 Clean up (.)
```

Re-arranges all the icons by size into a neat order. May be better to do
this manually.

```
1.2.6 Snapshot
```

Includes two sub-menus: Window or All.

Saves the position of a window or a window and all its icons so that next
time the window is opened the icons appear in their new position.

```
1.2.7 Show
```

Includes two sub-menus: Only icons or All files.

Displays all files which have icons and hides the remaining files or
displays all files and hidden files are given default icon pictures.

```
1.2.6 View By
```

This has four sub menus: Icon, Name, Date, Size.

Allows you to display files in a window by four methods. Icon displays in
normal icon mode. Name, Date and Size displays files in a list and sorted
by the method chosen. A tick appears by method selected.

1.5   1.3 Icon Menu

1.3.1 Open (O)

This is used on a selected icon. Instead of double clicking on an icon to
show contents of a disk or drawer or run a program you can select an icon
with the pointer and Select Open to display or run it.

1.3.2 Copy (C)

This option allows you to duplicate files and disks. To copy a file select
the icon and then select Copy. Another icon will appear saying
Copy_of_file <name>, you can then move that file elsewhere or Rename it.

1.3.3 Rename (R)

This option allows you to change the name of a disk, a drawer or a file.
Select the disk, drawer or file icon to rename, select rename, and then
type in the new name in the given requester.

1.3.4 Information (I)

This option displays details of a given disk, drawer or file. Workbench
has 5 types of workbench icons: Disk, Drawer, Trashcan, Project and Tool.

A Trashcan is a special drawer for use with the 'Empty Trash' feature to
delete files. A Project is a data file and a Tool is a Program. Info will
display the type, size, stack size, default file, comment and protection
flags of a file.

1.3.5 Snapshot (S)

This savees the position of one or more icons to its new position.

1.3.6 Unsnapshot (U)

This removes the position information of an icon and allows Workbench to
position the icon itself.

1.3.6 Leave out (L)

Allows an icon to be placed on the desktop and may be snapshot into place.
Allows faster access to a program or drawer than via other disks and
drawers.

1.3.6 Put Away (P)

Returns left out icons back into their original location on disk.

```
1.3.7 Delete
```

This is a delete function, to delete a file you would normally drag and
drop the file into the Trashcan drawer to empty later. This option allows
you to delete a file straight away. A requester may appear to confirm
deletion.

```
1.3.8 Format Disk
```

This option formats a disk for use by the Amiga. It splits the disk into
the right number of tracks/sectors and creates an empty root directory. It
can also automatically create a Trashcan drawer. To use, select the disk
to format and select Initialise.

```
1.3.9 Empty Trash
```

This option deletes all the files in a selected Trashcan drawer of a disk.
This feature is useful because you may want to delete a file but you could
change your mind and decide to keep it, all you have to do is to drag the
file out of the Trashcan back to its original drawer or disk.

1.6   1.4 Tools Menu

```
1.4.1 Reset WB
```

Resets Workbench, redraws the screen and re-reads mounted disks.

```
1.4.2 User items
```

It is possible for some programs to add its own menu items to this menu.
You can also add your own favourite items to this menu via third party
programs such as ToolManager, ToolsDaemon and so on.

1.7   2. The Mouse

On the Amiga mouse there are two buttons. The Left Mouse Button (LMB) and
the Right Mouse Button (RMB).

```
2.1 Using the Right Mouse Button
```

To use the menus, press down the RMB and move the pointer to the title bar
at the top of the screen. Move the pointer over one of the menu names and
some menu items will appear. Now, still with the RMB pressed, move the
pointer down to the selected menu item and release the RMB to select that
item.

```
2.2 Using the Left Mouse Button
```

This button is mainly used to select and move icons around and click on
gadgets (or buttons).

```
2.2.1 Clicking
```

To select an icon move the pointer over the desired icon and then click
the LMB once. The icon will change to a reverse or an alternative image to
indicate it has been selected.

When using gadgets such as those on windows (there are four gadgets on a
window: Close, Window-to-Front, Window-to-Back and Resize) move the
pointer over the desired gadget and click once to use that gadget. The
gadget will change briefly and also change the window.

2.2.2 Double-Clicking

This is sometimes a tricky technique to use and requires a steady hand.
This method is used to open disks, drawers and files or run programs. To
do this, move the pointer over the desired icon and in quick succession
(without moving the pointer) click on the LMB twice. This should open the
icon.

2.2.3 Dragging

This technique allows you to move objects such as icons around the screen
or re-sizing windows. Select an icon with a single click, now keep the LMB
down and move the pointer, the icon will now be dragged with the pointer.
If you let go of the pointer the icon will be dropped into its new
position.

2.2.4 Multiple selection

You can select more than one icon at a time. To do this, click on the
first icon, press the SHIFT key down (either one) and then click on the
second, third, fourth icons etc. to select multiple icons.

You can also select a whole group of icons by pressing the LMB at the top
left of the icons & while keeping the LMB down, moving the pointer towards
the bottom right. An expanding box will appear and the icons in it will be
selected. (called rubber-banding)

1.8 3 WB Programs

Here I will give a brief explanation of the programs ←
provided with
Workbench 3.

3.1 Workbench Disk

3.2 Extras Disk

3.3 Fonts Disk

3.4 Locale Disk

3.5 Storage Disk

3.6 Install Disk

Goto Contents

1.9   3.1 Workbench Disk

3.1.1 Utilities Drawer

```
    Clock          - Displays a analogue or digital clock showing
                     the present time and/or date
    More           - Program to display text files
    Multiview      - Displays text, amigaguide and pictures from one
                     program
```

3.1.2 System Drawer

```
    CLI            - Opens a Command Line Interface console
    Diskcopy       - Program to copy disks (used by Duplicate)
    Format         - Formats a disk (used by Initialise)
    NoFastMem      - Disables all fast memory
    Fixfonts       - Updates Fonts files if changes have been made to
                     any files in Fonts drawer
    RexxMast       - Starts the AREXX program interpreter
    Shell          - Opens a shell or CLI window
```

3.1.3 Prefs Drawer

```
    Presets        - Drawer contains saved preference files
    Env-Archive    - Stores saved environment variables, config files,
                     default icons etc
```

3.1.4 Devs Drawer

```
    This drawer contains drivers for all sorts of peripheral drivers.

    Datatypes      - Contains datatype IFF descriptor files
    DOSDrivers     - Contains driver mountlist files
    Keymaps        - Contains keyboard layouts
    Monitors       - Contains monitor drivers
    Printers       - Contains printer drivers
```

3.1.5 Hidden Drawers

```
    C        - Stores AmigaDOS commands
    Classes  - Contains datatypes convertor files and gadget files
    L        - Stores device handlers and file systems
    Libs     - Stores Amiga operating system libraries
    Rexxc    - Contains programs for manipulating AREXX programs
       HI       - Sets global halt flag
       RX       - Launch an ARexx program
       RXSET    - Adds name/value pair to the Clip List
       RXC      - Close resident process
       TCC      - Close global tracing console
       TCO      - Open global tracing console
       TE       - Clears global tracing flag
```

```
      TS       - Start interactive tracing
   WaitForPort - Waits 10 secs for port to appear

   S          - Stores batch or script files e.g. startup-sequence and
                user-startup
   T          - Temporary files drawer
```

3.1.6 Other Drawers

```
   Expansion - Stores special device drivers for expansion peripherals
   Trashcan  - Stores files ready to be deleted.
   WBStartup - Programs which are auto-run when Workbench loads
```

1.10   3.2 Extras Disk

3.2.1 Tools Drawer

```
   Calculator   - Program to work out arithmetic calculations
   Cmd          - Redirects output to the printer to a file
   GraphicDump  - Prints out graphics and pictures
   IconEdit     - Icon editor
   KeyShow      - Displays keyboard characters
   Lacer        - Used for video recording and genlocking
   MEmacs       - Text editor
   PrepCard     - Prepares PCMCIA memory cards
   Printfiles   - Prints text files
   ShowConfig   - Displays system configuration
```

3.2.2 Commodities Drawer

```
   AutoPoint    - Activates windows by moving mouse over it
   Blanker      - Screen saver
   ClickToFront - Quick way of bringing a window to front of screen
   CrossDos     - Enables text filtering & translation from PC disks
   Exchange     - Controls commodity programs
   FKey         - Assigns commands to the Function keys
   MouseBlanker - Blanks out the mouse pointer
   NoCapsLock   - Disables Caps Lock key
```

3.2.3 Prefs Drawer

```
   Font         - Sets default, screen and icon fonts
   IControl     - Controls intuition functions for screens and icons
   Input        - Define mouse and keyboard speeds
   Locale       - Sets country settings
   OverScan     - Sets physical screen size
   Palette      - Defines screen colours
   Pointer      - Defines normal and busy pointer graphic
   Printer      - Selects a printer
   PrinterGfx   - Sets printer graphics settings
   PrinterPS    - Sets options for PostScript printers
   ScreenMode   - Selects screen display
   Serial       - Determines settings for RS232 port
   Sound        - Sets up effect for flashing display
   Time         - Sets system date and time
```

        WBPattern   - Sets backdrop pattern for Workbench

3.2.4 System Drawer

        Intellifont - Installs Compugraphic fonts (called Fountain in WB2)

1.11   3.3 Fonts disk

This disk contains bitmap and Compugraphic (Bullet) fonts for use by
Workbench and application software.

Bitmap Fonts:

Courier, diamond, emerald, garnet, helvetica, opal, ruby, sapphire, times,
topaz.

Compugraphic Fonts:

None supplied.

You can add your own fonts from application programs and font files
supplied from PD. Use the Intellifont program to install Compugraphic
fonts. Some programs will require the fonts to be installed separately in
the applications drawer.

1.12   3.4 Locale Disk

This disk contains catalog, country and amigaguide help files for country
specific settings, languages and so on.

Usually programs will install their own catalogs and help files here. Some
programs can have catalogs provided separately and will need to be
installed manually.

1.13   3.5 Storage Disk

This disk contains device drivers for use in the Devs drawer. The Storage
is used to store unused drivers.

3.5.1 Datatypes

These files are used by Multiview and other programs to display non-native
file formats such as GIF, JPEG, BMP, WAV, MPEG files and so on. They are
supplied from third party sources.

Supplied with Workbench are: ILBM, AmigaGuide, 8SVX and FTXT datatypes.

3.5.2 DOSDrivers

These files are mountlists for alternative filesystems such as PC disks,

CD ROMS and so on.

DOSDrivers supplied are AUX, CD0, PC0, PC1 and RAD devices.

New Drivers are supplied with the equipment and various others are available from third party sources.

3.5.3 Printers

These are printer drivers for most common dot matrix, inkjet and laser printers available at the time. New printer drivers are available for modern printers from third party sources.

3.5.4 Monitors

These are drivers for TVs and Monitors depending on their capabilities.

3.5.5 Keymaps

This contains keymaps for different keyboard layouts for different countries.

1.14   3.6 Install Disk

This disk is used to prepare and install Workbench on a hard disk.

3.6.1 HDSetup

Contains scripts to partition and format a default hard disk setup.

3.6.2 HDTools

HDBackup is a backup program to copy files from a hard disk to another media. HDToolbox is a hard disk setup and partitioning tool.

3.6.3 Install

Contains scripts to install Workbench onto a hard disk.

1.15   4 AmigaDOS Commands

            Amiga DOS commands can only be used on a CLI or Shell ←
                window where
commands can be typed in to perform various functions. All these commands
have to be run from disk.

            4.1 Command format

            4.2 Error messages

            4.3 Volume/Drawer/File names

1.16   4.1 Command format

To display the information required by a command type a '?' after it.

NOTE: after each argument there is a slash and a character. This specifies the kind of argument required such as an option or a name or a value.

```
/A   - Argument must be supplied
/F   - Must be final or last argument
/K   - Keyword must be entered with a parameter
/M   - Multiple arguments may be supplied
/N   - A Number is required
/S   - Switch or option. Supply this function to activate it.
```

1.17   4.2 Error messages

If you enter a command and it comes back with an error message, typing WHY will display more information about it. Use the FAULT command to display the error message that applies to an error code.

Typical error messages are:

```
Code Description                          Solution
----------------------------------------------------------------------
103  Insufficient free store             Free up some memory by quiting other
                                         programs.
105  Task table full         Shutdown some programs
120  Argument line invalid or too long  Check command arguments using '?'
121  File is not an object module       Try setting 'e' or 's' protection flag.
122  Invalid resident library during load
202  Object in use                      Exit program, unassign assign or
                                         close directory windows.
203  Object already exists              Cannot move the program as
                                         it exists elsewhere. Delete the
                                         original first.
204  Directory not found                Retype directory name
205  Object not found                   Retype file name
206  Invalid window description         Re-enter correct window description for
                                         NEWCLI or NEWSHELL
209  Packet request type unknown
210  Stram name component invalid
```

```
211  Invalid object lock              Recheck filename
212  Object not of required type      Recheck file
213  Disk not validated               Wait until disk is validated first.
214  Disk write-protected             Ensure write tab is closed.
215  Rename across devices attempted  Use Copy instead
216  Directory not empty              Must delete its contents first.
                                      Use DELETE ALL.
218  Device (or volume) not mounted   Check device name and reinsert disk
219  Seek failure                     Check position in file
220  Comment too big                  Use shorter description in FILENOTE
221  Disk full                        Delete some files or use a new disk.
222  File is protected from deletion  Enable Delete flag with Protect
223  File is write protected          Enable Write flag with Protect
224  File is read protected           Use PROTECT to set 'r' flag.
225  Not a valid DOS disk             Disk is unformatted or a protected
                                      game disk.
226  No disk in drive                 Use correct device name or insert disk
232  No more entries in directory     Directory is full, delete files or
                                      move files into new sub-dirs.
```

There are another set of error messages called 'Software Failures' which is displayed when the computer crashes. It consists of two numbers. the first is the error id and second the address of the task:

```
     ssggeeee aaaaaaaa

     ss = Subsystem Id, gg = general error, eeeee = specific error

     The most common ones are CPU traps:

     00000002  Bus Error (memory doesn't exist)
     00000003  Address error (usually odd address access)
     00000004  Illegal instruction
     00000005  Divide by zero
     00000006  CHK instruction (Check register against boundaries)
     00000007  TRAPV instruction (Trap on overflow)
     00000008  Privilege violation
     00000009  Trace (debugging)
     0000000A  Op Code 1010 (unimplemented instruction)
     0000000B  Op Code 1111 (unimplemented instruction)

     Exec:

     81000005  Corrupted memory list
     81000009  Memory freed twice
```

There are programs available that can prevent some failures from occuring such as MCP and so on which will allow you to continue or kill the process.

1.18 4.3 Volume/Drawer/File names

Names can be up to 31 characters long and may contain the following characters:

```
             Letters A-Z (upper or lower)
             Digits 0-9
             Other characters EXCEPT the colon ':' or slash '/'.
             Spaces can be used but can be confusing use a dash '-' or
             underline '_' instead.
```

Wildcards can be used in names and are listed below:

```
      #     Any number of characters
      ?     One character
      %     Nothing
      |     Alternative pattern
      ~     Negate a grouped pattern
      ()    Group patterns
      '     Insert wildcard as literal
```

The standard 'Match All' wildcard is #?.

There are also programs which allows the use of '*' to replace '#?' as the standard 'Match All' wildcard.

1.19   4.4 Volumes,Drawers and Assigns

A volume is the name given to a disk and may be referred to by its name followed by a colon ':'

```
                      e.g. DIR DataDisk:
```

A drawer or directory is used to organise files together and they are usually used in conjunction which a slash to separate the names

```
                      e.g. DIR DF0:Devs/Printers
```

An assign is a special shortcut name to a volume or a drawer and is created using the ASSIGN command.

```
                      e.g. TYPE S:Startup-sequence
        is the same as       TYPE Workbench1.3:S/Startup-Sequence
```


1.20   4.5 Devices

A device is a special name given to a particular peripheral or an AmigaDOS feature. Typical devices are:

```
        DF0:     - Internal floppy drive
        DF1:     - External floppy drive
        PC0:     - CrossDos PC formatted disk
        DH0:     - Hard disk
        RAM:     - RAM disk
        RAD:     - Recoverable RAM disk (from a reboot)
        CON:     - Console device (CLI)
```

```
                        SER:    - Serial port
                        PAR:    - Parallel port
                        PRT:    - Printer port
                        AUX:    - Auxillary device
                        CD0:    - CD-ROM
                        PIPE:   - Pipe device
```

1.21 4.6 The Commands

```
Addbuffers      - Add memory to floppy disk buffers to improve speed
Adddatatypes    - Activates datatypes or adds another datatype
Alias           - Assigns a short name to a command
Ask             - Asks a question in a script (reply y/n). Use IF WARN
                  to test for a yes.
Assign          - Assign names to directory paths.
Avail           - Memory availablility
Binddrivers     - Load device drivers
Break           - Stop a program (see Status)
CD              - Change directory
ChangeTaskPri   - Changes program's execution priority
Conclip         - Activates clipboard device
Copy            - Copy files
CPU             - Changes CPU settings e.g. caches, burst, fastrom
Date            - Display/change date or time
Delete          - Delete files
Dir             - List contents of a directory
Diskchange      - Tell Amigados that a disk has been swapped in a
                  non-autosensing disk drive
Diskcopy        - Duplicates disks (resides in System drawer)
Echo            - Display text in a script
Ed              - Edit text files (screen editor)
Edit            - Edit text files (line editor)
Else            - Used with IF, if not true, do these commands
Endcli          - Close CLI console window
Endif           - End a IF..ELSE..ENDIF block
Endskip         - Stops a SKIP branch (for debugging)
Eval            - Evaluate a simple arithmetic expression
Execute         - Execute a script or batch file
Failat          - Change failure limit for scripts
                  (0 - Ok, 5 - Warn, 10 - Error, 20 - Fail)
Fault           - Display error message from a code
Filenote        - Attach a comment to a file (see LIST)
Format          - Initialises Amiga disks (resides in System drawer)
Get             - Returns contents of local ENV variable
Getenv          - Return contents of a global environment variable
IconX           - Enables a script to be run from Workbench. The script
                  must have a Project .info file and the Default Tool
                  set to C:IconX to run it.
If              - If condition is true, execute following commands until
                  an ELSE or ENDIF occurs.
Info            - Displays information about disks
Install         - Saves a bootblock to a disk. If you have only one drive
                  type INSTALL ? and swap disks and then type DF0: and
                  press RETURN to save bootblock.
IPrefs          - Initialises preferences files on startup.
```

```
      Join          - Join two or more files together.
      Lab           - State a Label to Skip to in a script
      List          - List file details in a directory
      Loadwb        - Display workbench screen
      Lock          - Lock a device from writing
      MagTape       - Controls magnetic tape device
      Makedir       - Create a new directory.
      MakeLink      - Creates a logical link between files
      Mount         - Loads and mounts a device
      Newcli        - Open a new CLI console (CON) window
      NewShell      - Open a new Shell console (CON) window
      Path          - Set or change the program search path
      Prompt        - Change the prompt text
      Protect       - Change the 'rwedsp' flags of a file. (r=read,w=write,
                      e=execute,d=delete,s=script,p=pure)
      Quit          - Quit a script
      Relabel       - Change name of a disk
      RemRAD        - Remove RAD device from memory
      Rename        - Renames a file
      RequestChoice - Asks for input via a requester
      RequestFile   - Asks for a filename via ASL file requester
      Resident      - Stores AmigaDOS command in memory (faster than reloading
                      from disk each time it is executed). To ensure a
                      command can be made resident check the pure flag
                      (see List).
      Run           - Execute a program in the background (multi-task)
      Search        - Search for a string in a file or a file on a disk
      Set           - Sets a local ENV variable
      Setclock      - Load or set the date and time from battery-backed clock
      Setdate       - Set date of a file (see List)
      Setenv        - Change the contents of a environment variable
      Setfont       - Sets console font
      Setkeyboard   - Sets keyboard layout (was SetMap)
      Setpatch      - Patch Operating System functions and remove bugs
      Skip          - Jump to a label in a script (see Lab)
      Stack         - Change/display amount of stack space
      Status        - Display status of running programs
      Type          - Display contents of text file on screen
      Unset         - Remove a local ENV variable
      UnSetEnv      - Remove a global ENV variable
      Unalias       - Remove a short name for a command
      Version       - Display workbench or library version information
      Wait          - Wait for a specified period of time
      Which         - Find where a file is in command path (see Path)
      Why           - Display reason why a previous command failed

Other Commands (not included):
      AmigaGuide    - Displays AmigaGuide documents
      Installer     - Runs installation scripts for applications
      LoadResource  - Loads libraries, device, fonts etc (floppy based systems)
```

1.22 5. Arexx Commands

```
Instructions
```

```
ADDRESS          - Specify host address for commands
ARG              - Retreives arguments strings
BREAK            - Exit a DO loop or Interpreted string
CALL             - Call an internal or external function
DO .. END        - Do Loop (Counted or conditional)
DROP             - Reset variables as uninitialised
ECHO             - Display expression result on console
ELSE             - Alternative branch of an IF statement
END              - End a Do or Select block
EXIT             - Stops a program
IF               - Conditional block
INTERPRET        - Treat expression as a statement
ITERATE          - Terminate current iteration in DO and start next
LEAVE            - Immediate exit from DO loop
NOP              - No Operation (use with IF)
NUMERIC          - Sets options related to numeic precision and format
OPTIONS          - Set various internal defaults
OTHERWISE        - Alternative instruction of a SELECT block
PARSE            - Extract substrings from string and assign to variables
PROCEDURE        - Create new function or subprogram
PULL             - Reads string from input console
PUSH             - Prepare stream of data into STDIN stream
QUEUE            - Prepare stream of data in STDIN using FIFO order
RETURN           - Leave a function and return to main program and return a value
SAY              - Display value of expression on console
SELECT           - Runs instructions if WHEN condition is true, or OTHERWISE
                   clause and ENDs
SHELL            - As ADDRESS
SIGNAL           - Control state of internal interrupt flags
WHEN             - Part of SELECT block, if condition true THEN statements are run


Functions


ABBREV()         - Returns 1 or 0 if string2 is an abbrev of string1
ABS()            - Absolute value
ADDLIB()         - Adds function library or host to library list
ADDRESS()        - Returns current host address string
ARG()            - Returns number of arguements supplied in current env.
B2C()            - Binary to character
BITAND()         - Bit wise AND
BITCHG()         - Bit wise change
BITCLR()         - Bit wise clear
BITCOMP()        - Bit wise compare
BITOR()          - Bit wise OR
BITSET()         - Bit wise set
BITTST()         - Bit wise test
BITXOR()         - Bit wise Exclusive OR
C2B()            - Character to binary
C2D()            - Character to decimal
C2X()            - Character to hex
CENTER()         - Center string with in a number of characters
CENTRE()         - See CENTER
CLOSE()          - Close file
COMPARE()        - Compare two strings
COMPRESS()       - Remove leading, trailing, embedded blanks
COPIES()         - Produces multiple copies of string
D2C()            - Decimal to ASCII character
```

```
D2X()            - Decimal to hex
DATATYPE()       - Tests string and returns type of string
DATE()           - Current date
DELSTR()         - Delete substring from string
DELWORD()        - Delete a substring in words
DIGITS()         - Return current NUMERIC setting
EOF()            - End of file
ERRORTEXT()      - Returns error message from error code
EXISTS()         - Test if file exists
EXPORT()         - Copies data from string to allocated memory
FIND()           - Locates substring and returns word number
FORM()           - Returns current NUMERIC FORM setting
FREESPACE()      - Returns block of memory in interpreter's memory pool
FUZZ()           - Returns current NUMERIC FUZZ setting
GETCLIP()        - Returns value of entry in Clip List
GETSPACE()       - Allocates a block of memory
HASH()           - Returns hash attribute of a string
IMPORT()         - Create a string from data from given address
INDEX()          - Searches for a string in another string
INSERT()         - Insert a new string into old string
LASTPOS()        - Searches backwards for first occurance of string
LEFT()           - Returns left mose string
LENGTH()         - Returns length of string
LINES()          - Returns no. of lines queued or typed ahead
MAX()            - Returns maximum of given values
MIN()            - Returns minimum of given values
OPEN()           - Opens an external file
OVERLAY()        - Overlays new string onto old string
POS()            - Searches for first occurance of pattern in string
PRAGMA()         - Change attributes of system environment
RANDOM()         - Returns pseudo-random number
RANDU()          - Returns pseodo-random number between 0 and 1
READCH()         - Reads number of characters from file
READLN()         - Read characters from file until LF found
REMLIB()         - Remove an entry from Library List
REVERSE()        - Reverse sequence of characters
RIGHT()          - Return right most characters of string
SEEK()           - Move to new position in file
SETCLIP()        - Add name-value pair to Clip List
SHOW()           - Returns names in resource list specified by option
SIGN()           - Returns sign of value
SOURCELINE()     - Returns test for specified line in program or number of lines
SPACE()          - Reformat string with number of n spaces between words
STORAGE()        - Returns system memory or copy string to memory
STRIP()          - Removes leading, trailing or both spaces from string
SUBSTR()         - Returns a substring or a string
SUBWORD()        - Returns a substring of words in a string
SYMBOL()         - Test if name argument is a valid ARexx symbol
TIME()           - Returns current time
TRACE()          - Sets tracing mode
TRANSLATE()      - Constructs a translation table and uses it to replace
                   characters in a string.
TRIM()           - Removes trailing spaces from a string
TRUNC()          - Returns integer part of value (optionally to number of
                   decimal places)
UPPER()          - Converts string to uppercase
VALUE()          - Returns value of a symbol or character
```

```
VERIFY()          - Returns index of first char in string which is not
                      in the list argument string or vice versa if MATCH spec.
WORD()            - Returns nth word in string
WORDINDEX()       - Returns position of nth word in a string
WORDLENGTH()      - Returns length of nth word in string
WORDS()           - Returns number of words in string
WRITECH()         - Writes string to a file
WRITELN()         - Writes string to a file with a LF added
X2C()             - Converts hex to packed character
X2D()             - Converts hex to decimal
XRANGE()          - Generates a string between start and end values


RexxSupport.Library Functions


ALLOCMEM()        - Allocates a block of memory
CLOSEPORT()       - Closes a message port
FREEMEM()         - Releases a block of Allocated memory
GETARG()          - Extracts command, function name or string from message pkt
OPENPORT()        - Creates a public message port
REPLY()           - Returns a msg pkt to the sender with a value
SHOWDIR()         - Returns contents of directory as strings of names
SHOWLIST()        - Returns a string of names depending on option
STATEF()          - Returns a string containing file information
WAITPKT()         - Waits for a msg pkt from port
```

Further Arexx information available from CBM Arexx User's Guide and other Arexx
books and Guides incl. Aminet.

1.23 6. Common Problems

6.1 How do I retreive a file I accidently deleted?

You need to use a Disk Recovery program such as QB Tools or Disksalv to
scan and recover the file. You cannot retrieve a file that has been
deleted and the disk written to later as it will most likely have been
overwritten!

6.2 How can I view hidden file from Workbench?

Use the Show/ All Files option in the Window menu. Workbench applies
standard icons for Tools, Projects and Drawers where it can. There are
Default Icon programs which try and allocate appropiate icons to files
depending on their type.

6.3 How can I create a bootable disk?

The simplest method is to Duplicate your Workbench disk, delete the
Utilities and the System files (if not required), copy the program to the
disk and then edit the s:startup-sequence to run your program. This method
also guarentees that all the necessary files are also on the disk.

The minimum required to make a disk bootable is to use the Install command
to save a bootblock to the disk. Create a directory called S and create a
startup-sequence file with the name of the program and save that in the S
directory and copy your program to the disk. To use install with one disk

drive, type INSTALL ? then swap disks and type DF0: and press RETURN.

6.4 How can I speed up disk access when using the shell?

The shell is a very powerful feature but can be limiting and annoying when
working from floppy. You can make common commands run from memory by using
the Resident command which allows the Amiga to use commands from memory
instead of loading them from disk.

For example, Resident C:Dir pure will make the DIR command resident. You
can make this a permanent feature by modying the S:Shell-Startup file and
insert these resident commands.

Also, it is a good idea to do all work on the RAM: disk if you have plenty
of memory instead of saving to/from disk.

6.5 Why do some icons, when double-clicked, not load up?

There are two reasons for this. First, if a program is deleted but its
.info file is left behind then the program or file may seem to still
exist. To rectify this, the program should be re-copied back.

Second, a lot of Project icons have a Default Tool set. This Default Tool
loads up the program and the data file. There are many tools, particularly
text and graphics viewers. If you try to run a file with a Default Tool
that you don't have, then the following message will appear: 'Unable to
open the tool <file>'

If this happens, select the icon and choose Info from the Workbench menu
and change the Default tool to the one you do have. For example, if it's a
text file, change it to 'More' (Workbench's Text Viewer). Otherwise you may
need to install the tool into the appropiate directory e.g. C: or Utilities.

6.6 Can I make ENV: point to ENVARC: rather than RAM:ENV?

You could, but that would be an unwise move as ENVARC contains preferences
Saved from a Prefs program and are permanent while those in ENV are
temporary. If you USE a new prefs settings, this would be temporary until
the next time it's changed back or a reboot, if ENV pointed to ENVARC, all
preference changes will be saved and made permanent. You should always
have ENV in a different location even if it means making a new directory
for it.

A third party program called HappyENV does sometimes help in this
situation.

6.7 I cannot get PC0 Crossdos icons to appear?

The PC0 and PC1 DOSDrivers are used to mount PC disks. When you insert a
PC disk, the Amiga will try to read its format first then the PC format
and try to mount a disk. If the PC0 icons are located in Devs/DosDrivers
they should be auto-mounted on startup. If icons do not appear, try adding
the ACTIVATE=1 tooltype to each icon.

1.24   7. Improving Workbench 3.1

Workbench 3.1 was the last official release of Workbench. You can update
it from third party programs from PD sources such as Aminet.

1. Magic Workbench

Replaces the standard 4 colour icons with more colourful 8 colour icons.

2. NewIcons

Replaces the standard icons with multi-colour 3d type icons.

3. (a) Toolsdaemon
   (b) ToolManager

   (a) adds your favourite programs to the Tools menu for quick access.
   (b) same as above but also has the option of adding a Toolbar to the
       Workbench screen

4. Magic User Interface

Replaces Inutuition and Gadtools style windows with more powerful features
with user-configurability.

5. ReqAttack

Replaces the standard requester with a animated requester with graphics.

6. SwazInfo

Replaces the standard Information window with a more informative and
powerful version.

7. MCP or MCX

A multi-function commodity program that adds extra features to workbench.

8. Dir Opus,MBench or Scalos

Replaces the Workbench interface with a new improved version.

9. MagicMenu

Replaces the standard menu system with improved menus with popup menus from
the desktop instead of the top of the screen.

10. TTF and Postscript

New libraries which allow the use of more common TrueType and Postscript fonts
than the standard Bitmap and Compugraphic fonts.

1.25   8. Changes since Workbench 2

Workbench 2.x was a major improvement on WB1.3 and incorporated major
changes to the Workbench interface. It removed some of the limitations of
WB1.3 and added many programs to the Operating System. Workbench 3
improved on WB2 and included support for CrossDos, Datatypes and later a
CD ROM filesystem.

```
    Programs

    Setmap        - Replaced with Setkeyboard in WB3
    BindMonitor   - Replaced with advanced Monitor drivers in WB3
    AddMonitor    - As above
    Display       - Displays pictures. Replaced with Multiview in WB3
    Say           - Speech program. Removed in WB3. There is a third party
                    translator library available to access speech.
    Mode_Names    - Screen names. Not required in WB3
    DiskDoctor    - Disk repair program. Very unreliable. Removed in WB3
    Fountain      - Replaced with Intellifont in WB3
    Colors        - Sets colours for program screens. Removed in WB3
    IHelp         - Assign keys for commonly used mouse functions
    BRU           - CLI based backup utility


    Added to WB3 since WB 2

    Crossdos      - Actually first appeared in WB 2.1 (but this was a less
                    common upgrade)
    DOSDrivers    - This first appeared in WB2.1 to replace the 'mountlist'
                    file.
    Datatypes     - Access to non-native file formats
    Monitors      - Loads different display modes eg PAL, NTSC, Multiscan etc
    Lacer         - Access to video functions
    ShowConfig    - Display system configuration
    MouseBlanker  - Blanks mouse pointer
    Multiview     - Advanced file viewer. Replaced Display.
    RequestChoice - Ask for user input
    CDFileSystem  - Access to CDROMs in Workbench 3.1
```

1.26 9. Changes in Workbench 3.5

Recently Haage & Partner released a software upgrade from Workbench 3.1 to
Workbench 3.5 and now comes on CDROM.

Requirements:
68020, CDROM, Kickstart 3.1, 1M Chip and 4Mb Fast RAM, Hard disk.

New improvements:
  - New Reaction GUI interface based on Classact and BOOPSI
  - New Workbench interface with new menu commands and Arexx interface
  - New CacheCDFS CDROM file System to replace Commodores CDFileSystem
    with support for Joliet, HFS and Rockridge systems.
  - CD Audio Player included.
  - New Workbench preferences. Disk gauges, hide bad disks etc.
  - Miami TCP/IP, Aweb Browser and AmigaMail E-Mail clients included
  - Support for hard disks greater than 4Gb. Support for ATAPI devices.
  - New HDToolbox for hard disk preperation

```
    - New 24 bit Printer device and drivers
    - PowerPC accelerator support with WarpOS
    - Documentation in HTML
    - Full colour icon system
    - Improved installer with graphics
```

1.27 The Author

```
  How to contact me:

          Peter Hutchison

           E-Mail: pjhutch@blizzard.u-net.com
              Web: http://www.blizzard.u-net.com/index.html
          Fidonet: 2:250/366.24

          Other Guides to look out for:

          The Printer Guide
          Expanding the Amiga Guide
          PC Task Guide
          Upgrading Workbench
          Foozle Guide
          Hard Disk Guide
          Accelerators
          Workbench 1.3

          See Aminet/docs/help or hyper for the above.
```