The diskette for **FILTER KIT #1** contains the following:

directory of . 11:02:57

Owner	Last modified	attributes	sector	bytecount	name
0	84/01/31 1045	d-ewrewr	A	1C0	CMDS

directory of CMDS 11:03:42

Owner	Last modified	attributes	sector	bytecount	name
0	84/01/31 1045	--e-rewr	13	420	ls
0	84/01/31 1045	--e-rewr	19	107	buf
0	84/01/31 1045	--e-rewr	1C	2F5	cp
0	84/01/31 1045	--e-rewr	20	13A	dl
0	84/01/31 1045	--e-rewr	23	12C	flist
0	84/01/31 1045	--e-rewr	26	2D3	info
0	84/01/31 1045	--e-rewr	2A	28D	mv
0	84/01/31 1045	--e-rewr	2E	35A	pag
0	84/01/31 1045	--e-rewr	33	A2	remove
0	84/01/31 1046	--e-rewr	35	210	sell
0	84/01/31 1046	--e-rewr	39	27A	setat
0	84/01/31 1046	----rewr	3D	A38	sort

The CMDS directory contains only executable programs, refer to the documention with this package for their use. You will probably want to copy these to your working CMDS directory on your system disk.

If your diskette contains a DOC directory, this will contain text files with documentation updates that may not be in the printed documentation.

ABOUT YOUR ORDER

Before you open the diskette package, examine the documentation to confirm you have received what you ordered. You should also determine from the documentation if the software you ordered will meet your needs. If you have received the wrong item, return the unopened disk package with all documentation and a note stating the problem and we will send you the correct item. If after looking at the documentation you feel there was a misunderstanding as to the function of the software, and it won't meet your needs you may return the UNOPENED disk package and documentation for a refund. No refunds will be given after the diskette package is opened (except for media that is defective according to the terms on the disk package).

ABOUT DOCUMENTATION

No amount of documentation will do you any good if you don't read it. The documentation included with this software assumes you have a basic knowledge of using your system and does not explain in depth information that is covered elsewhere (in your system manuals). We have tried to use terminology consistent with that used in the OS-9 system documentation. If you have not at least read through your OS-9 documentation that was included with you system we strongly urge you to do so. If you do not understand something about our documentation, first see if there is some word you skipped over that you did not understand (like "pipes", "device descriptor", "I/O redirection", etc.) that is explained in the OS-9 COMMANDS or OS-9 TECHNICAL MANUAL, study that manual then reread our documentation, if it still does not make any sense then try giving us a call.

DISKETTES

If you have difficulty reading the diskette supplied try it in more than one drive if you have more than one. If that doesn't work use the test program supplied with the RS OS-9 BOOT diskette to check your drives rotational speed. If the diskette has been exposed to temperature and humidity extremes it may need to sit for a day in your environment after you receive it to achive dimensional stability. Another factor affecting diskette compatability is the track alignment on the disk drives (yours and ours), if they are off a disk becomes unreadable. If after these attempts you can still not read the disk return it for a replacement.

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FILTER KIT #1

Most of the utilities in this package are used as "filters". A filter is a program that uses only the standard input and output for its I/O, this gives the program some inherent versatility. The standard input is normally the operator keyboard and output is the display device, however I/O redirection and pipes allow changing this, in fact the most advantageous setup is usually to use pipes to string more than one program together. Read about pipes and I/O redirection in the OS-9 COMMANDS manual.

The LS command is used like DIR to get a list of filenames in a directory, however unlike DIR you can select to list only names that match given parameters like partial name, owner, attributes, etc.. Most of the other commands in this package (cp, dl etc.) read the standard input to obtain a list of filenames, and perform an action for each name read. You can type the names on the keyboard, or redirect the input to another path namely a file or pipe.

Example LS will list all file names in the current data directory, and LS ! DL will "pipe" that list into the input of "DL" which will delete each file named.

As another example the PAG command is used to paginate (format into pages) its input and pass it along to the output, so:

LS ! PAG will give you a directory listing in page format, the LS command provides a list of file names (one per line) which is piped (!) into the PAG command which formats that list into five columns.

The SORT command reads its input (up to 300 names) sorts it and writes it to the output, so:

LS ! SORT ! PAG will give a sorted directory listing.

As you can see there are many possible ways to combine these commands, each has an input and output, by redirecting or piping its data you can accomplish many things that are not mentioned in the documentation. You need to get familiar with the concept of I/O redirection and pipes if you are not already and understand what each command expects as input and creates as output to fully use this package.

NOTE: The INFO and PAG commands are set up to use an 80 columns output. The page width for the PAG command can be specified by option switches.

LS

SYNTAX:

LS [-options] [partial_path beg with . or /] [name template]

Lists filenames, one name per line to standard output.

Options have form -A or -An where n is a decimal number associated with that option. Options are single letters A through Z (upper or lower case). Multiple options can be written as -A -B-C or -ABC .

OPTIONS:

Attribute matching:	-An	n is a decimal number representing the files attribute byte. The on" bits of n must also be on in the files attributes for a match.
	-Zn	as above except the on bits in the Z option must be off in the files attribute byte for a match.
		An alternate more convenient syntax for the -A and -Z options is -A.d s pe pw pr e w r. where the attribute mnemonics as used by the attr command are enclosed within periods immediately after the option letter. The spaces within the periods separating the mnemonics are not necessary.
Owner matching:	-On	the file must belong to owner n (decimal) to match the list criteria.
Date matching:	-T	the file must have today´s creation date (as give by system time/date clock) to match.
	-Yn	Year (2 digits) must match files creation year.
	-Mn	Month must match files creation month.
	-Dn	Day must match files creation day.
	-B	used in conjunction with -YnMnDn options. files creation date must be Before that given by Y M D options to be selected.
Other:	-C	Confirm each matching name. Each name that matches all criteria is listed to the console, after each name operator inputs "Y" to select name or any other key to discard name. Selected names are then written to standard output. (The prompt name is written to the standard error output which will normally be the console.

-N Negate matching logic. Inverts all matching criteria, i.e. Before becomes equal or later, name_template selects names not matching given, etc.

-X Uses default execution directory for search instead of default work directory if explicit path is not given. Note if execution directory is on a different device from work directory, and other options are selected, the explicit path (e.g. /D0/CMDS) must be given instead of -X for proper operation.

-F Use when "piping" output of ls into some other commands (like: cp info) to speed up operation. Sends the binary number of each files file descriptor sector to output preceding the name. Do not use when ls output is going to screen or printer since the binary bytes will not list readably.

-E as above except also sends first 16 bytes of file's descriptor sector before name.

Partial_path can be given to list names from directory other than current working directory, path list must begin with . or / .

Name template can be used so that LS outputs only selected names from directory. The character ? in the template will match any character in that position of a name, and the character * will match any number of name characters (including 0) in that relative position. Only one * may appear in the template name, however any number of ? may be used. Alpha- numeric characters in the template must match exactly with names in the directory except that upper and lower case are considered equal.

Examples: ls test*
(lists any file that begins with the letters test)

LS -X A??
(lists any file name in the current execution dir beginning with the letter A which is 3 letters long)

ls /D0/CMDS *X0
(lists any filename in the dir /d0/cmds that ends with the characters x0)

ls -A.d.
(list any directory files in the current dir)

ls -Z.d.-A.prpw.
(list any non-directory file names that have public read and public write permission)

ls -c *.bak ! dl

(Filenames that end with ".bak" are listed on console (standard error output), if operator enters "y" after the name it will be passed on downstream to "dl" which will delete it, for any other operator response the filename will not be passed on, i.e. file will not be deleted.)

ls -t
(List any file with Today's creation date)

ls -nby84m2d7
(List any file created on or after Feb. 7 '84 .. that is Not Before Year=84 Month=2 Day=7)

BUF

Buffers input until eof then passes it to output.

SYNTAX: BUF [-opts]

BUF reads the standard input until eof or the buffer is full and then writes the buffer to the standard output. This is useful in some circumstances when using pipes and process upstream in the pipeline is writing to the error output which happens to be going to the same place as the standard output of another process (e.g. ls with the -c option piped into info).

Options have form -A or -An where n is a decimal number associated with that option. Options are single letters A through Z (upper or lower case). Multiple options can be written as -A -B-C or -ABC .

OPTIONS: -A = Write the entire buffer in one write operation instead of the default line at a time.

-Bn = Use a data memory size of nK bytes for buffer (default is approx 4K).

EXAMPLES:

ls -c *.x ! info ! buf

This will keep the info listing from being interspersed with the "-c" confirmation dialog from the ls command. You could also use:

ls -c *.x ! buf ! info

Which would handle a larger list with less memory.
NOTE: If using the -e or -f switch with the ls command in this example the -a switch should be used with buf since the -e and -f options cause ls to output binary data. In the first example this would not be necessary since info always writes only ascii data.

CP

SYNTAX: CP [-options] /destination_pathlist

FUNCTION: Copies files from the default working directory whose names are input to cp via the standard input to a file of the same name on the destination path. Names are input 1 per line (usually via a pipe). The output pathname is constructed by appending the name of the input file to the /destination_pathlist given on the command line.

Options have form -A or -An where n is a decimal number associated with that option. Options are single letters A through Z (upper or lower case). Multiple options can be written as -A -B-C or -ABC .

OPTIONS:

-Bx Uses the decimal value x as the size of the tranfser buffer in K bytes. (Default = 4k)

-D Causes CP to perform a makdir for directory files whose names were given on the input. (If D option is not spec- ified, directory file names given on input will be ignored.)

-I Ignore file names that are not found.

-L Log operation. CP logs each operation to the standard output.

-R Replace exsisting files of same name on destination. Will cause an exsisting file of the name being copied to be deleted from the destination before the copy.

EXAMPLES:

```
cp -1 /d1/cmds
dir
dir /d1/cmds/dir copied
<escape>
```

The name "dir" is entered on keyboard and copied to /d1/cmds/dir. (Dir must exsist on the current working directory).

```
CHD /D0/SOURCE
LS -NBY83M7 ! CP /D1/BACKUP
```

Uses LS command to list files on /d0/source whose modification date is Not Before Year 83 Month 7, the file names in this list are then piped into CP which copies these files to /D1/BACKUP.

Delete files.

SYNTAX: DL [-opts]

DL reads a list of names from the standard input which are assumed to be names of files in the current work directory, and deletes each file in this list.

Options have form -A or -An where n is a decimal number associated with that option. Options are single letters A through Z (upper or lower case). Multiple options can be written as -A -B-C or -ABC .

OPTIONS: -I = ignore files that are not found, (the default is to abort with an error.)

-L = Log action to standard output path , (i.e. list each name as it's file is deleted).

EXAMPLES: ls *.old ! dl -l

This example will delete all files in the current directory that end with the characters ".old" (assuming the file permission bits permit deletion.) Usually dl will get its list of names via a pipe from the ls command, but it may also be useful to redirect it's input to a file with the list or to supply the list from the keyboard as below:

```
dl
thisfile
thatfile
theotherfile
<esc>          (escape key typed to signal eof)
               ( clear-break on coco)
```

Redirecting dl's input to a file containing the names to delete:

```
dl -l <scraplist
```


FLIST

List files to standard output.

SYNTAX: FLIST [-opts]

Flist reads a list of names through the standard input and list each corresponding file to the standard output.

Options have form -A or -An where n is a decimal number associated with that option. Options are single letters A through Z (upper or lower case). Multiple options can be written as -A -B-C or -ABC .

OPTIONS: -F = Write a form feed character ($C) after each file listed.

EXAMPLES: ls ! flist -f ! pag -clm5w75 COMMAND DOCUMENTION >/pl

This combination will get you a pagenated listing of all of the files in the current data directory. (you might want to use this to print all of these doc files to printer /pl in one whack).

INFO

Display detailed file information.

SYNTAX: INFO
    or INFO <pathname> [<pathname>..]

INFO displays the owner number (in decimal), the creation date, modification date and time, attributes, bytecount (in hex), and name of a file or files. If invoked with the first syntax shown, info will read its list of pathnames from the standard input. The second syntax allows a short list of names to be given on the command line.

EXAMPLES: info ls cp dl

Will print detailed information about the files ls, cp, and dl (which must be in the current work directory.)

ls -e ! info

This combination will print information about all files in the current work directory, (similar to dir e).

NOTE:When using info in conjunction with the ls command as shown above, the e option used with the ls command will speed up operation by eliminating redundant disk reads.

SYNTAX: MV [-opts] /dir pathname

Moves filenames read through the standard input from the current data directory and places them in the directory pathname given on the command line. This command is similar to CP but instead of copying the files it only moves their directory entries to a new directory without actually moving the file itselt. The destination directory MUST be on the same physical device as the current data directory (the source directory). If the system crashes or is rebooted while MV is in operation it is possible the one file will be left with its name in both the source and destination directories, if this happens use the REMOVE command to remove the name from ONE of the directories only.

Options have form -A or -An where n is a decimal number associated with that option. Options are single letters A through Z (upper or lower case). Multiple options can be written as -A -B-C or -ABC.

OPTIONS: -L log action to standard output.

-I Ignore exsisting files of the same name on the destination directory as are being moved, i.e the file is not moved and the program is NOT aborted. Default actions is: File is not moved, program IS aborted.

EXAMPLES:
```
chd /d0/cmds
mv /d0/extracmds
setat
sell
<esc>
```

The above example moves the files "setat" and "sell" (the names were typed in on the terminal keyboard) from the /d0/cmds directory to the /d0/extracmds directory, the <esc> means the escape key was typed signifying eof on the standard input to MV to terminate the command.

The followning command sequence can be used to obtain a sorted directory:

```
makdir /d0/CMDS.SORTED
chd /d0/cmds
ls ! sort ! mv -l /d0/cmds.sorted
```

LS will list all names in the . directory (/d0/cmds), SORT will sort them alphabetically, and mv will move the names in sorted order the the /d0/cmds.sorted directory.

PAG

Pagination filter.

SYNTAX: PAG [-opts] [heading_text]

PAG reads the standard input, formats the data into pages and passes it on to the standard output.

Options have form -A or -An where n is a decimal number associated with that option. Options are single letters A through Z (upper or lower case). Multiple options can be written as -A -B-C or -ABC .

OPTIONS:

- Ln - Set page length to "n" lines.
- Wn - Set page width to n characters.
- Cn - Print input lines in n columns on the output.
- Sn - Set column size to n characters. If the C option is used to specify the number of columns and S is not given s will be set to W/C (width divided by columns).
- Tn - Set top margin to n lines. (n lines will be printed at the top of each page before the heading line.)
- Bn - Set bottom margin to n lines.
- Mn - Set left margin to n characters. (n spaces will be printed before the beginning of each line.)
- N - Do not print the heading line or following blank line.
- Pn - Set beginning page number to n.
- En - Eject n pages at end of pag output.
- R - Reset page number to 1 on each encounter of a form_feed character ($0C).

Default values for the page size and margins are contained in a table immediately after the module edition byte (table starts at the second byte after the last byte of the module name. They are initially set to the values given below but may be patched by the user for different values. (After patching use Verify command to update crc).

```
fcb 66   default page Length
fcb 80   page Width
fcb 5    number of Columns
fcb 16   column Size (ignored)
```

```
fcb 0     Top margin
fcb 4     Bottom margin
fcb 0     left Margin
fdb 1     beginning Page number (note this is 2 bytes)
```

These default values have been set to make PAG easy to use with the LS command.

EXAMPLES: LS ! PAG Directory of .

Prints a directory listing of the current work directory formatted in 5 columns (default value) with the heading "Directory of ." followed by the date and time and page number on the heading line.

LS -te ! INFO ! PAG -cl TODAYS FILES

Prints a detailed directory listing of files on current work directory with todays date (formatted in 1 column/line).

LS -t ! flist -f ! pag -clr

Lists contents of all files with todays date on the current work directory formatted in pages starting a new page at the beginning of each file (-f option in flist send form feed) and starting page numbering at 1 for each new file (r option for pag command).

REMOVE

SYNTAX: REMOVE filename

Remove removes the given filename from the current data directory. Only the name is removed which differs from a file delete in that the files data sectors are not deallocated. Remove is intended to be used when a system crash during an move operation of the MV command leaves a filename in two different directories, in this case the name should be REMOVEd from ONE of the directories.

E.G. REMOVE garbage

The filename "garbage" is removed from the . directory.

SELL

Change file ownership.

SYNTAX: SELL [-opts] <new owner number>

SELL reads a list of names via the standard input and changes the owner number of each of the named files to the new owner number (given in decimal). Owner 0 can sell anybodys files that are accessible, all others must own the files they are trying to sell.

Options have form -A or -An where n is a decimal number associated with that option. Options are single letters A through Z (upper or lower case). Multiple options can be written as -A -B-C or -ABC .

OPTIONS: -L = Log action to standard output.

EXAMPLES: ls -f ref* ! sell -l 103 ! info

This example changes the owner number of all files in the current data directory whose names begin with the letters "REF" to owner 103, file info for each file in this list will then be printed by the info command which is provided its input by the -l option of the sell command.
NOTE: The "f" or the "E" option of the ls command will speed up operation of sell in most cicumstances.

SETAT

Set (change) file attributes.

SYNTAX: SETAT [-opts] <attribute list>

SETAT reads a list of names through the standard input and resets the file attributes of each of the named files so that only those bits specified in the attribute list are on. (The names must point to files on the same device as the current work directory, normally setat is used as a filter with the ls command).

Options have form -A or -An where n is a decimal number associated with that option. Options are single letters A through Z (upper or lower case). Multiple options can be written as -A -B-C or -ABC .

OPTIONS: -L = log action to standard output.

-DIR = The three letters d i and r (in any order) in the option list will cause the directory bit to be set for all of the named files. This is provided only as a way to reset the directory bit of files that had their directory bit accidentally removed. Setting the directory bit of a file that is not structured as a directory and then attempting to use it as such may cause serious problems.

ATTRIBUTE_LIST: S PE PW PR E W R

Any of the letters shown above appearing in any order with or without separating spaces will specify that the corresponding bit of the files attributes be set.

EXAMPLES: ls -z128 ! setat -l pr r w

Sets the attributes of all non-directory files (ls -z128) in the current work directory to public read, owner read, owner write.

setat -ldir rewprpepw
cmds
<esc>

Sets the directory bit (and all others except s) for the file cmds (name was typed in at the console followed by escape key to designate the end of the list). The escape is generated on the coco by holding down the clear and break keys simultaneously.

SORT

SYNTAX: SORT

Sort works as a filter to intended to sort file names piped into it from the LS command or some other source. Sort reads a list of names from the standard input (maximum of 300), sorts these alphabetically (treating upper and lowercase letters as equal), and then writes the sorted list to the standard output.

Examples: ls ! sort

To get a sorted list of the current data directory.

ls ! sort ! info >/p

Sorts the names from ls and passes them to the info command which lists to the printer /p.

ls ! sort ! pag

Displays a sorted pagenated directory of the current data directory.