UNIVERSITY OF EDINBURGH

Edinburgh Regional Computing Centre

OFFLOAD under UCSD

Produced by the Microcomputer Support Unit

An Office Workstation based on the UCSD p-System Version IV

OFFLOAD Office Workstation

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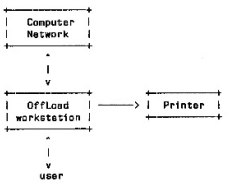
Overview

OffLoad is a collection of administrative aids which are made available on a microcomputer. The system is intended for those users who require a general purpose microcomputer system for some aspect of their work and who wish to use the system for additional administrative functions.

The individual components of the OffLoad system have been made as compatible as possible to provide a straightforward, uniform set of facilities to the user. Extensive use is made of "menus" from which choices of action may be made and help information is provided by the system.



The design of the OffLoad workstation allows straightforward integration with facilities available over a computer network. This will enable interpersonal communication facilities (such as electronic mail, viewdata and document transfers) as well as access to more powerful computer based facilities, document archives, printing, etc.

System Requirements

The full OffLoad system will run under the UCSD p-System Version IV. However, many of the individual components of OffLoad are available as part of the WORDSET Word Processing Facilities or other packages available from the ERCC for all supported UCSD based microcomputers.

The OffLoad Command Level

The components of the OffLoad system are arranged in a hierarchy. At all levels you are presented with a prompt line giving the options available to you and inviting you to press a key to select one of them. Options are indicated by a form such as E(dit or S(et. Type the letter to the left of the parenthesis to make the appropriate selection. You may return to a higher choice level by typing Q to Q(uit.

Where a filename or number is being sought in response to a prompt from the system, you will in general be able to abort the action by pressing the escape key followed by the return key. Angle brackets < > indicate special keys which you may type. E.g., 'Type <space> to continue:' is asking you to press the spacebar to allow the system to carry on. This is frequently used when the system displays a message which it wants you to acknowledge. <ctrl/C> means hold down the "ctrl" or "control" key and press the "C" key.

Short Description of OffLoad Components

E(ditor	to create and modify documents
F(iler	to examine disk contents, manipulate disks, etc
L(ist	to print out documents
P(rose	to format documents
S(can	to list a document to the screen for review
T(ty	to communicate with other computers
D(iskAids	to copy and tidy disks
H(elp	to provide assistance in the use of OffLoad
X(ecute	to execute other utilities and programs
	Crackup — splits up large documents and rejoins parts
	Compact — reduce space occupied by a document
	Calc — Desktop arithmetic calculator
	Compare — check for differences between documents
	Sort/Merge
	Mail — Mailing label manager and form letters
	Configure — to set up the workstation environment
	Fund,Enuf,etc — Cashflow analysis by Cost Code/Cost Centre, Data base management system, etc
	+ others
Q(uit	to leave OffLoad and return to the underlying p-System

Note that there are several conditions under which the OffLoad system will be stopped and control returned to the underlying p-System. These are mainly due to errors of a kind which OffLoad cannot detect. If you unintentionally Q(uit from OffLoad or errors cause a premature exit, it is suggested that you reboot the system. You can recognise the underlying p-System by a prompt line beginning "Command:" and containing options such as C(omp, A(ssem, L(ink, etc.

Disk Handling

In general, you should put the OffLoad system disk in the drive labelled #4 when the system is powered on and not remove it thereafter. Any user disk may be put in the disk drive labelled #5 and may be changed as necessary. The only exception to this will be when copying an entire disk volume. In this case several "DiskAids" have been provided in OffLoad which explain when you may remove the OffLoad system disk from drive #4.

The following sections describe the various disk types associated with OffLoad. If you are provided with an OffLoad System Disk for disk drive 4 and a sample User Disk for disk drive 5 you may skip these sections at the first reading.

OffLoad Disks

An OffLoad user will be concerned with several types of disk.

	Name	Drive
a] OffLoad system disk	OFFLOAD	#4
b] User disks	Given by user	#5
c] Back-up disks	-	-
d] Spare disk	SPARE	#5
e] Special disks	See component documentation	#5

a] OFFLOAD System Disk

This is put in disk drive #4 on power on and normally left there. A copy of the OFFLOAD disk is provided when you become a user of the system. It contains the 'software' which provides the OffLoad facilities to you. OffLoad system components and documents residing on the OFFLOAD System Disk are distinguished by having a prefix '*'.

b] User Disks

These are created by a N(ew-#5) command in the D(iskaids) component of OffLoad. These disks may be used to hold documents created by a user in the editor. At any one time, one user disk will be placed in disk drive #5 and the documents on that disk will be accessible. These disks may be given any name. Document names which are not prefixed by '*' (see above) will refer to the User Disk currently in drive #5. This has been arranged for you by the OffLoad system which sets '#5:' as the default prefix for document names.

c] Back-up Disks

Floppy disks are prone to damage from dust and fingerprints. It is very advisable to make copies of disks holding important documents. The D(iskaids) C(opy-#5) component of OffLoad may be used to copy user disks. Back-ups would normally be stored away from the microcomputer and only accessed if a document on an active user disk was lost for any reason, or earlier versions of documents were required. These disks normally have the same names as the disk of which they are a copies.

d] A SPARE Disk

It is normal to keep one empty user disk readily available as a standby disk in case the new version of a document being edited cannot be put back onto the user disk in drive #5. This could happen if the disk became full or if gaps left on the disk were too small. Further details of this process are given in the Editor documention under Q(uit) and W(rite). A SPARE disk is normally provided to you when you first become a user of the system.

e) Special Disks

Some OffLoad components will create files on a disk which are accessed at later times in a uniform way. E.g., the MAIL program maintains a file of mailing data, the FUNDS program maintains a file of accounting data. These special disks should be named as indicated in the documentation for the component in use or should be given names which suggest their function (e.g. MAIL1:).

Tidying Disks

Disks may become full or space on them may be fragmented by repeated file removals. In such cases, the free space on a disk may be coalesced by doing a T(idy) operation in the D(iskaids) section of OffLoad.

Help

The OffLoad workstation provides help on several topics. You can get a summary of the OffLoad commands, recall the special keystrokes needed for editor functions, get a list of the Utilities available, etc.

A document *HELP.HINT may be created by a user of OffLoad to hold any useful information and this can be recalled in the OffLoad Help facility at any time.

Editor

A screen oriented editor is used for the entry of text to the system and for its subsequent modification. The editor displays a screen image which shows a "window" onto the text being edited. The screen image is as close as possible to the current state of the part of the text being entered or modified. Cursor moving keys may be used to move to any position on the screen or to move through the text to cause a different "window" to be shown on the screen.

The editor can only cope with a limited size document (normally between 16,000 and 20,000 characters). It is therefore best to split up long documents into chapters or sections which are convenient for editing purposes. It is straightforward to combine the sections for listing or text formatting at a later stage. It is useful to choose names for sections of a large document which all begin with the same prefix (e.g., DOC1.1, DOC1.2, etc.) to ease identification at a later stage.

Most of the OffLoad user's work is likely to involve the use of the Editor. It is assumed that someone will demonstrate and teach the Editor to you. It is straightforward to get started with the editor. However, it is also possible to perform sophisticated text processing on a par with many commercially available word processors. You may find it easier to follow a gradual learning path and get plenty of practice before attempting to use more advanced features.

The following list gives a suggested order of learning commands. There is a sample document on the OffLoad System Disk called *EDIT.E.G which may be used for learning purposes. Spend most time on the initial list of commands (which are explained in a little detail below). Read the Editor reference documentation for these commands beforehand. Gain confidence before going on to any other command. The set of commands in the initial section is sufficient to do ANY editing. The further commands will make it easier for you once you can use them with confidence.

Keep an eye on the prompt line within the Editor at the top of the screen. It gives aid by explaining what you are currently expected to type or the options open to you. Some commands allow you to "abort" the operation by pressing the <esc> key. This leaves the text in its original state.

initially

Use the *EDIT.E.G document to experiment with the following commands.

I(nsert text followed by <etx> (normally the <ctrl/C> key) to "accept" the Insert. You may use the <esc> key to "abort" Insert instead.

Cursor (cursor) keys to move to a different position in the text.

D(elete text by moving over the characters with the <cursor> keys. Also try moving one way and then bringing the text back again by moving the opposite way. When you have indicated the text to be deleted by moving over it use the <etx> key to "accept" the Delete or the <esc> key to "abort" it.

Q(uit (with W(rite option) is used to write the document back to the disk. Until this is done, all changes you make will be temporary. You may give the document name explicitly or just type $ <return> to give it the same name as the input document - if you were modifying an existing document.

N.B. The $ naming facility is only available on UCSD p-System releases IV onwards.

If the disk becomes full when writing a document, the system will indicate the error and you will remain in the editor to give you a chance to insert a less full disk to try to Q(uit and W(rite the text again. This is where the SPARE Disk mentioned earlier should be used.

You will normally use Q(uit) with W(rite) to a specific file, but there are other options.

Q(uit (with E(xit option) to exit from the editor without changing the text. Take care not to do this accidentally or there will be much gnashing of teeth.

Q(uit (with U(pdate option) It is suggested that a user who is not familiar with the use of a single "workfile" for the current document being worked on does not use the U(pdate option.

In fact a document called *SYSTEM.WRK is created and subsequent calls to the Editor will read this text without waiting for a document name to be specified by the user. When the document is finished, it is S(aved in the F(iler component of OffLoad.

Q(uit (with R(eturn option) takes you straight back into the editor if you quitted by mistake. It does not alter the document on the disk. When starting a new document use *NEW as the input file. This provides an empty document which has certain format options set so that it is suitable as a basis for simple document preparation.

second moving around your document

multiple cursor moves. A number followed by a <cursor> key gives a quicker way of moving about the text. The "slash" character '/' is used to repeat a large number of times - i.e., as many times as possible before the limit of the document is reached.

P(age is used to step one screenful at a time through a document. It operates in the "indicated direction" which may be seen as '>' for forwards or '<' for backwards in the top left of the screen.

<space> and <return> are used to move in a similar way to the <cursor> keys but they operate on one or more characters (for <space>) or lines (for <return>) at a time in the "indicated direction".

'>' or '<' are used to alter the indicated direction. The top left most character of the screen reminds you of the current direction.

J(ump may be used to go the the B(eginning or E(nd of the document.

third locating and replacing text

X(exchange is a powerful command to allow you to overtype the text on the screen. Cursor keys or <return> can be used to alter the position at which you can overtype. Space can be opened up and closed up at the point of exchange. Practice on *EDIT.E.G until you understand how this works.

N.B. UCSD p-System versions previous to version IV had a more limited X(exchange command.

F(ind to locate text in the document iss specified within delimiters, e.g., F/today/ will find the next occurrence of the string "today" in the indicated direction..

R(eplace to alter a text string in the document. One (the default), or a limited number, or all (indicated by '/') occurrences of the string may be replaced by typing a number or '/' before the 'R' to select the R(eplace command. Verification on each replacement may be requested. This command has a number of options and is quite flexible, so it is important to consult the Editor Manual.

fourth cut and paste, merging documents, etc

C(opy B(uffer. There is a "Copy Buffer" which is filled by the last text D(eleted (even if the delete is aborted) or I(nserted. This command enables the contents of the buffer to be copied at any point. Hence text can be Cut (by the D(elete command) from some place and Pasted (by the C(opy Buffer command) into the new location. Accidentally deleted text may also be recovered by this mechanism so long as it is done before the next insert, delete and other similar operations.

C(opy F(ile may be used to insert another document (or part of one when you get very clever with the Editor) at any point in the text being edited. Hence, standard tables, paragraphs, etc can be kept on disk and recalled as necessary.

If you need to put a form feed character directly in a file (e.g., to cause a page throw on a printer without use of the printing and formatting utilities LIST and PROSE) you may C(opy from F(ile *NEW.PAGE which is a file provided on the OffLoad System Disk containing only a form feed character.

fifth text layout and column manipulation

A(djust can be used to move a line of text left or right on the page. When you move the cursor to the lines above or below, these are then adjusted by the same amount.

K(olumn can be used to adjust the part of the line to the right of the cursor while leaving the part of the line to the left of the cursor stationary. It is very useful for manipulating columns of figures by making space for a new column or removing an unwanted column.

sixth text processing in detail

S(et E(nvironment is used to alter the mode in which the Editor works. You should endeavour to gain an understanding of the possibilities since ease of use of the Editor can be achieved by careful use of the Environment options.

You may select the F(illing mode whereby all text typed will be kept within preset margins without a user typing <return> or aligning left margins with spaces or tabs.

Tabstops may be preset. By default, these are set 8 characters apart.

It may be useful to note that the *NEW document provided on the OffLoad System Disk is simply an empty document which has had certain Environment options preset in the S(et Environment command. Why not use the Editor on *NEW and look at the Environment options by using the S(et command to see the defaults we chose for simple use of the editor?

The S(et E(nvironment command is also useful in that it provides valuable data about the document being edited. This includes the size of the document (in characters) and the amount of space remaining before the Editor could not cope with the size of the document (you will get a message at the top of the screen indicating "ERROR: Please finish up the insertion" when you are near the limit). The date of creation of the document, the date it was last revised and the number of revisions is also given.

I(nsert and D(elete should be experimented with in F(illing mode with various S(et E(nvironment options. When Insertions are done in F(illing mode, the text following the insertion is re-adjusted to ensure that it remains within the set margins. It is necessary to M(argin the paragraph again explicitly following a deletion.

M(argin is used to alter an existing paragraph to the set margins and

only operates in F(illing mode. It may be used after a deletion to tidy the paragraph. Clever use of the set margins in F(illing mode and the M(argin command can give great flexibility for paragraph layouts, etc. Take care that you do not accidentally re-margin a laid out table or diagram where the spaces in the text must be preserved.

Inserting space for part-width diagrams
One 'special effect' which may be worth noting is that used to achieve a cut out section for a photograph or diagram which only occupies part of the page width. The text can be made to run around the cut out.

If the text is just being entered, you may use the S(et E(nvironment facilitiesto set up appropriate margins for before and after the cut out section, and set different margins for the cut- out section itself.

If the text has already been entered, use S(et E(nvironment to set the margins for the cut out, position the cursor at the start of the cut out and do an I(nsert followed immediately by an <etx> (normally <ctrl/C>) to end the insert. This has the effect of inserting no text but does force re-margining of the following text in F(illing mode. Reset the S(et E(nvironment margins for after the cut out and perform the same I(nsert <etx> operation to re-margin the section following the cut out.

Finally Full Use

There is a range of other facilities in the editor which can be explored by the ambitious. It is very rare for anyone to need to learn every facility in the editor. However, for you own requirements some of the facilities available could significantly reduce the tedium of performing some operations. You should at least read the documentation to see what is available so that you can always look it up if you later believe it may be relevant to you.

The facilities include the S(etting of M(arkers in documents (for example to identify regularly used sections or paragraphs in contract texts) and subsequently C(opying from a F(ile between M(arkers. It is also possible to J(ump to M(arkers in a document.

There are commands to Z(ap large areas of text between the current position of the cursor and the position of text last I(nserted, D(eleted or F(ound.

Further details

See the UCSD p-System User's Manual. An introduction to the Editor is also available in the Beginner's Guide to the UCSD Pascal System by Ken Bowles (McGraw Hill, 1980).

DiskAids

A set of commonly needed disk operations has been provided in an easy to use manner via the DiskAids component of OffLoad. These simplify the copying of entire disks and the setting up of new user disks. Normally these operations would each consist of several steps and necessitate otherwise unnecessary background knowledge of the computer system being used. The DiskAid facilities are:

B(ackup-#4	create a backup of the OffLoad System Disk
C(opy-#5	create a copy of the User Disk
N(ew-#5	create a new, formatted, blank, User Disk
T(idy	compact unused space on the disks in drives 4 and 5

The nature of the OffLoad system makes it difficult to detect and report some errors during DiskAid operations. If errors do occur, try to identify the problem - it could be a faulty disk - and then repeat the operation.

Filer

The Filer is a collection of facilities to examine the list of documents or files on disks (known as disk directories), to copy files, remove files, change the names of files, copy entire disks, etc. Floppy disks are prone to damage from dust, grease, etc, so there are aids for checking disks are sound and recovering parts of disks found to be faulty (see the appendix on handling floppy disks for more information on disk handling and recovering from errors).

The "DiskAids" facilities in OffLoad are intended to provide a straightforward method of manipulating entire disks, to take back-up copies of disks, etc. When other disk operations are necessary use the Filer. In general you should not remove the OffLoad system disk from drive #4 since the system will need to access that disk during its operations. However, if it is necessary to remove the disk, you may do so after a Filer operation has been selected from the options available.

If the system needs to access the OffLoad system disk and the user has removed it from disk drive #4, the user will be asked to put it back in the disk drive when necessary.

Filer Operations of Importance

The following list gives a suggested order to learn the Filer commands. It is assumed that someone will demonstrate or teach the system to you.

D(ate may be set. You should do this at the start of each day. When OffLoad is started, it provides a reminder of the date and allows it to be reset immediately.

L(ist directory can be used to get a list of the documents and other files on a disk. You may specify the disk which you wish to

look at by disk name (e.g., SPARE:) or by drive number (e.g., #5).

Files on a disk are given suffixes such as .TEXT or .CODE. These are used to differentiate between documents, executable OffLoad components and other special data files. Files also may have common prefixes (such as SYSTEM, MAIL, or FUND) to group files related to one type of facility. This is a useful convention which should also be adopted by you as an OffLoad user.

E(xtended list directory is used in the same way as L(ist directory. However, it provides greater detail on the disk and its files. In particular it displays the unused areas of the disk and can be used to see how fragmented the free space is (use the D(iskAids T(idy operation to coalesce the free space).

R(emove files may be used to delete unwanted documents on a disk. An explicit filename may be given. The full filenames (including any prefixes and suffixes) are NECESSARY otherwise the file will not be found (e.g., to remove the document CH.1 it will be necessary to R(emove CH.1.TEXT).

By using "Wildcards" it is possible to remove more than one file at a time.

Wildcards may be used in the R(emove, C(hange, T(ransfer and other commands to allow these commands to manipulate more than one file at once. The wildcard character '=' matches any substring of a filename. It may only occur once in a filename specification. E.g., 'DOC=' will specify all files whose name starts with 'DOC'. If a R(emove was being performed, all such files would be removed. Whenever wildcards are being used to R(emove files, confirmation is sought before the files are actually removed.

You use '?' in place of '=' in a wildcard specification, the system asks you to confirm each individual operation performed on every matching file.

C(hange file names may be used to rename files on disks. Again you may use wildcards to allow a range of files to be renamed.

You can also use C(hange to rename a disk - without losing files already on the disk.

T(ransfer files may be used to copy files on one disk or between disks. Wildcards may be used to specify a range of files to be transferred. If this is done, the destination filename may be given as '$' or a different disk name or disk drive followed by '$' (e.g., SPARE:$ or #4:$) to tell the system to use the same destination name as the source name.

T(ransfer may also be used to copy the contents of an entire disk onto another PRE-FORMATTED disk.

Further Filer Operations

The following Filer commands may be required at some stage but are not necessary for straightforward use of the OffLoad system.

S(ave workfile
N(ew workfile
These commands may be used to copy a workfile document into a normal document (Saved) and then to clear the current workfile (New). After this the Editor will not continue to assume that it should read the workfile whenever it is run and it will resume prompting for the name of the document to be edited. You will need to use this sequence should you inadvertantly uses the E(ditor Q(uit U(pdate workfile option.

W(hat workfile
G(et workfile
These are 2 other workfile Filer commands. W(hat lets you know the current status of the workfile, and G(et informs the system that a particular named document should now be treated as the workfile. Only use the workfile concept if you are working on a single document for a long period and understand the operation of the Filer G(et, S(ave and N(ew commands.

V(olumes may be used to obtain a list of the disks currently mounted in the disk drives. It also provides other information such as the currently set P(refix for filenames. OffLoad will set this prefix to '#5:' when it starts up.

P(refix may be used in special circumstances to alter the prefix for filenames. Note that if this is done, all documents created will now be placed on the disk or disk drive specified in the P(refix command and not #5, the defaulted disk drive.

K(runch free space on a disk
Z(ero a new disk
These commands have been 'packaged' in a rather more convenient form in the 'DiskAide' component of OffLoad. However, when you gain familiarity with the Filer, you could increase the flexibility with which you can use the system by learning these commands.

Filer - Further Details

See the UCSD p-System User's Manual for further information.

LIST

LIST is a utility to list files on a printer, the particular printer can be specified by the user. It allows for underlining, emboldening and pagination of documents. Further functions are available depending on the functionality of the attached printer. LIST is capable of producing paginated text without any special commands in many instances.

Once LIST has been executed a command line will appear at the top of the screen:

LIST: L(ist file, A(djust paper, S(et parameters, Q(uit:

All you have to do to invoke a command is to type the single initial letter. So to list a file you have only to type L. The document to be listed may consist of several parts which can be given to LIST by separating the names by commas. Several different documents may be listed by separating the names by oblique characters.

E.g., CH.1,CH.2,CH.3/DOC.1
will list 2 documents where the first consists of 3 sections.

Reviewing the position of page splits for LIST

The OffLoad wokstation is set up so that, by default, A4 continuous paginated output will be produced. There are 55 lines of text to each "page" output by LIST when using this default A4 page format. It is therefore possible to "review" the places where the text will be split by using the OffLoad Editor. In the Editor, use a multiple move command (55 followed by <down arrow> for the default format) and the cursor will be set to the line which will be at the top of the next page. By inserting or deleting text or blank lines, or by using the @P() page directive the page break can be adjusted to avoid diagrams, tables, etc.

Once LIST has started to print documents, it will continue until it has finished. If you wish to abort printing after realising that an error has been made, you must re-boot your computer.

LIST - Further Detail

A user manual entitled "LIST under UCSD" is available from the Microcomputer Support Unit.

PROSE - Text Formatter

More sophisticated text formatting is possible using the text formatter PROSE. Directives may be placed in the text to produce a wide variety of output styles. Without directives PROSE will attempt to produce a reasonably formatted document according to a default description.

When PROSE is run, a set of input documents are asked for. Either one document or a list of them (separated by ",") may be given. All the documents given are considered to form one long document and will be processed sequentially. A document *PROSE.INFO resides on the OffLoad system disk and is processed by PROSE before any user given documents. This allows directives which are <u>always</u> used to be set up once and for all. For example, the input list:

*A4,MY.DOC1,MY.DOC2

would use an A4 layout (directive text - '*' means it resides on the OffLoad System Disk) to control output and process the 2 documents named by the user. In fact, the default PROSE directives are equivalent to the contents of the *A4 directive text (see below), so the '*A4,' part may be omitted if A4 formatting is required. You may supply your own, regularily used, formatting directives in this fashion.

PROSE then asks for an output file. This may be a file on the user disk if the formatted output must be kept. However, it is more normal to direct the formatted output directly to the listing device. This is normally specified as PRINTER: (on some systems without the appropriate hardware interface it may be necessary to put it to REMOUT:). You should ensure that the printer is plugged into the microcomputer and switched on before beginning text formatting where a printing device is specified as output.

Directive Texts

*A4 Suitable for output to A4 paper when the printer is set to 6 lines per inch vertical spacing and 12 or 15 characters per inch horizontal spacing. This is the default format used by PROSE if no overriding directives are given. It is provided to act as an example to enable customised directive texts to be made up by a user.

Simple Rules to get good results from PROSE

The following suggested text formatting rules will give you good results by straightforward use of PROSE. When you gain more experience with the system, you can vary your approach to text formatting.

1) Use the default PROSE directives. The notes below assume this.

2) PROSE treats any indented line or blank line as a change of paragraph and text justification is not carried further than such a line. Therefore, split paragraphs by a blank line or indent the start of a paragraph.

3) Mark text to be underlined by surrounding it with the "tilde" character. Blanks within the surrounded text should be marked with a backwards quote character if they are also to be underlined. The use of these two particular characters to control underlining is defined in the *PROSE.INFO text on the OffLoad system disk. If present, this text will always be processed by PROSE before the user's input texts.

4) Put a .TITLE <text for title> directive just following the title and author line of your document. This will then appear at the head of all pages but the first.

5) Protect any diagram, table or specially laid out text from re-formatting by putting
.OPTION(F-) to turn off formatting before it and
.OPTION(F+) to resume formatting after it.

PROSE - Further Details

PROSE is a very sophisticated tool and may be used to lay out paragraphs, to set formats, build up indices to a document and so on. See the PROSE User Manual for further information.

Scan - to review a long text

The S(can) option of OffLoad is a simple method of reviewing a text file which is too long to edit. It lists the document on the screen. Since it appears very quickly, the output may be stopped and started by the Stop/Start toggle character. The actual character used for this varies from system to system but can be found in the H(elp K(eystrokes information in the OffLoad workstation. It is usually ctrl/S.

Since it is very easy to produce very large files as output from PROSE, the option is particularily useful for reviewing the places where PROSE has split pages; the screen will clear before continuing output at each page break.

TTY - Communications to a Host Computer

TTY can be used to enable the microcomputer to act as a video terminal to a host computer. The microcomputer is connected to the network via a Terminal Control Processor, either directly or via an accoustic coupler and telephone to the host computer. The normal conventions for logging on to and using the host computer should then be followed.

It is possible to enter a "local mode" of the TTY program by typing <ctrl/L> at any time after logging on. In this mode it is possible to P(ut documents to the host computer from the microcomputer's disks or to G(et documents back from the host computer to the microcomputer. When G(etting a file from the host computer to the microcomputer, it can be written to a disk by giving a suitable filename or it can be written directly to the printer (by specifying the "local filename" as PRINTER:).

The F(iler option allows the microcomputer's disk directories to be examined, documents removed, etc. from within TTY. Entering local mode allows control codes to be sent to a host computer. This is useful for characters which might otherwise be intercepted by your microcomputer and treated in a special way. After logging off from the host computer system, you should E(uit from the TTY package by entering local mode (<ctrl/L>) and then selecting E(uit.

TTY forms a part of the ERCC X-Talk communication facilities. You need access to the software support in the host to use P(ut and G(et on documents.

On EMAS	use OPTION(SEARCHDIR=MICROS.EMASLIB) once.
On FSTORE	no special action needed.
On VAX VMS or UNIX hosts	consult your computer staff.

Further details on TTY and X-talk are available in the X-talk user manual. Further details on the use of the EMAS host computers and the Edinburgh network are available through the ERCC Advisory Service.

X(ecute)

Less commonly used components of the OffLoad system do not appear on the main options menu list. These can be used by typing X and giving the component name. Since these components reside on the system disk they are distinguished from normal user texts and programs by being prefixed with an '*'. X(ecute) can also be used to call programs provided specifically for your own system. In this case instructions will be given by the people who provided the programs to you. (N.B. this information may usefully be summarised in the *HELP.HINT text.)

OffLoad Utilities

CRACKUP - Document split and rejoin utility

CRACKUP can be used to break up a large document into several manageable pieces suitable for editing. This may be necessary where a document is brought onto the workstation from elsewhere (e.g., from another computer).

In addition, should it ever be desirable to put together all the separate sections of a large document (e.g., for sending to someone on a different computer) CRACKUP will also perform that operation.

COMPACT - reduce disk storage space occupied by a document

Leading spaces on each line of a document may be represented in a reduced form. The Editor and some other OffLoad utilities represent documents in this form. In some cases, such as receipt of documents from a host computer via the G(et document) facilities of the TTY communication package, the reduced form is not used. In those cases, the document created will be larger than strictly necessary. If this causes inconvenience, such as making the document too large to edit, perform a COMPACT operation on the document and the leading spaces will be converted to their reduced form, and all trailing spaces on lines will be removed.

CALC - Desk top arithmetic calculator

CALC enables simple arithmetic calculations to be performed. A display can be maintained showing the current values of a set of "variables" which can be used to hold intermediate results. Help information is available in the utility.

COMPARE - check for document differences

This is a utility to compare 2 similar documents and to produce a report of the differences between them. It is normally used to compare a revision of a document against an original.

SORT/MERGE

SORT/MERGE is a general package which is able to perform a number of operations on lines of text (usually in some fixed format or list) or on other types of files. The OffLoad system includes one version of this facility which allows a document consisting of single line records to be sorted according to up to 6 'keys' or ordering fields.

Full documentation to the SORT/MERGE package is available in the SORT/MERGE user manual.

MAIL - Mailing label data manager and forms letter producer

MAIL is a utility to manage a data base of name, address and other information. The data base may be added to, changed and entries deleted. It is possible to search through the data base for records satisfying certain criteria. Mailing labels may be produced and record entries merged into standard letters to produce "form" letters.

You are recommended to use a new user disk in drive #5 to hold the 2 files necessary for operation of MAIL. These 2 files are a MAIL.INFO information file and the actual MAIL data base. When a new mailing list is to be started ensure that you have a new user disk (created by D(iskAids N(ew-#5 perhaps) ready and answer the MAIL system prompts for the disk drive on which the files will reside as drive 5. It may help you to label the disk with a name such as MAIL1: to act as a reminder of the function of the disk. A maximum size of 250 blocks is recommended for the MAIL data base (see the full documentation for the reasons if required).

It is possible to maintain multiple mailing lists by using separate disks for the MAIL data bases. In this case take care to label them with different names so that you keep the information in each mailing list separate.

A utility *MAIL.INIT is available to take a document holding names and addresses (created, for example, in the editor) to initialise a MAIL data base.

Full documentation is available in the MAIL User Manual.

CONFIGURE - set up workstation characteristics

CONFIGURE can be used to set characteristics of the OffLoad workstation hardware. Normally, information for the ports for connection to a printer and to other computers can be set in CONFIGURE. See the manual for the particular hardware in use for details.

FUND (Cash Flow Analysis), ENUF (database), etc.

FUND, ENUF, etc. are systems provided on the UCSD p-System in which OffLoad operates. They are not provided directly in OffLoad due to limitations on disk space. However, they may be used as separate systems.

FUND is a utility to maintain a list of transactions by Cost Centres (e.g., grants or departmental groupings) and Cost Codes (e.g., expenditure headings). Transactions may be entered and later examined. Reports may be generated to the screen or to a printer giving income, expenditure, cash balances and committed expenditure for various cost centres or cost codes.

This program is being prepared by the ERCC Data Base Systems Unit

and the present facilities are provided as a demonstration only, by courtesy of Toby Morris of that Unit.

Brief notes on the pilot FUND program are available from the ERCC Microcomputer Support Unit.

ENUF - the Edinburgh User Friendly Data Base Management System - is a flexible, easy to use, general purpose data base management system. It may be used in many situations where record processing is required.

The ENUF system is being prepared by the ERCC Data Base Systems Unit. Full documentation is available in the ENUF User Manual.

Special Data Management Utilities

Specific programs (from the same stable and similar to MAIL) are available for inventory maintenance, logging telephone calls, etc. These could be investigated if the functions are needed in advance of ENUF becoming available.

FORMATDISK, BOOTER, etc

These utilities are normally called via the OffLoad DiskAids component. However, they can be called separately if required to format disks or to copy the bootstrap area of disks.

User Provided Programs

There are several general purpose tools to aid in providing programs suitable for administrative functions. In particular, there are facilities to provide ISAM (Indexed Sequential Access Method) file support and "electronic form" oriented front ends to programs. In the latter case, a screen editor can be used to define a "form" through which a user will interact with an application program. This "form" can then be used to automatically generate a skeleton program which provides a great deal of input and output checking and a standard mechanism for interacting with software. Specific applications can then be built up from the skeleton.

An example of an ISAM support package is COLAFILES. Electronic forms systems include FORMULEX (for SuperBrain and Apple) and CRT Screen/Form.

Acknowledgements

The OffLoad system is a collection of packages written by several different authors. The components not already supported by ERCC were tested and improved and new utilities written over the Summer of 1981. Al Hayden of the Computer Science Department and Austin Tate of ERCC coordinated the work.

Appendices

I OffLoad system disk files - explanatory notes on each file

The following files are held on the OffLoad System Disk.

SYSTEM.INTERP	UCSD Interpreter
SYSTEM.PASCAL	UCSD System command processor
SYSTEM.MISCINFO	Terminal characteristics file
SYSTEM.LIBRARY	Support Software Library
USERLIB.TEXT	File giving names of support codefiles for utilities
EDITOR.CODE	System Editor
FILER.CODE	System Filer
FORMATDISK.CODE	disk formatter
BOOTER.CODE	system disk bootstrap copier
SYSTEM.STARTUP	Turnkey entry program
OFFLOAD.CODE	command interpreter for OffLoad system
OFF.INFO.TEXT	parameter file for OFFLOAD command interpreter
OFF.INFO.DATA	compact form of OFFLOAD parameter file
PROSE.INFO.TEXT	file used by PROSE to generate default action
TTY.CODE	TTY communications
PROSE.CODE	Text Formatter
LIST.CODE	document printer
CALC.CODE	interactive calculator
MAIL.CODE	Mailing system/form letter system
MAIL.INIT.CODE	MAIL data base initialiser
CRACKUP.CODE	text splitting/joining utility
COMPARE.CODE	document comparator
COMPACT.CODE	utility to reduce storage space for document
SORTMERGE.CODE	text file sorting/merging utility
PARAMETERS.CODE	support unit for various utilities
NEW.TEXT	empty file with Slet E]nvironment suitable for beginners
NEW.PAGE.TEXT	as above but containing a formfeed (to insert in documents)
EDIT.E.G.TEXT	example file for editor learning
A4.TEXT	sample directive text for PROSE layout
MAIL.E.G.TEXT	example L[etter I]nput file for MAIL
MAIL.LETT.TEXT	ditto
MAIL.FORM.TEXT	ditto (giving a "form" of the record contents)
HELP.OFF.TEXT	help for Offload commands
HELP.KEYS.TEXT	help for workstation keystrokes
HELP.UTIL.TEXT	help on utilities available
HELP.DISK.TEXT	help on DiskAids

II Further documentation available on OffLoad Components

UCSD p-System User's Manual (or Apple Pascal Operating System Manual)
for Editor, Filer and general information on UCSD System.

Beginner's Guide to the UCSD Pascal System, Ken Bowles, 1980, McGraw Hill
for introductory guide to Editor, Filer, etc.

UCSD p-System Summary Card from ERCC.

*	LIST	MICROS.DOC_LIST on EMAS
	PROSE	MICROS.DOC_PROSE on EMAS
	TTY	MICROS.DOC_XTALK on EMAS
	CALC	MICROS.DOC_CALC on EMAS
	SORT/MERGE	MICROS.DOC_SORT on EMAS
*	MAIL	MICROS.DOC_MAIL on EMAS
	FUND	Brief notes from ERCC Micro Support Unit
	ENUF	Preliminary User Guide, Data Base Systems Unit, ERCC
	CONFIGURE	Datelex UCSD p-System additional notes (for SuperBrain)
	ISAM/"Electronic Forms" Software	Various manuals and catalogues held by the ERCC Micro Support Unit.
	EMAS	ERCC EMAS 2900 Introduction and User Guide

* A5 booklets are available from the Microcomputer Support Unit for these utilities.

Note: all the EMAS based documentation may be listed to a line printer with LIST <filename>,.LPnn (where nn is the number of your nearest printer).

III Floppy Disks - handling and recovery from disk errors

Floppy disks are used to store the documents you are preparing. The technology used to record and read floppy disks as well as the actual disks themselves are fairly crude. It is important to get a proper appreciation of the likelihood of errors. These might lead to documents held on a disk becoming unreadable.

Thus, it is VERY IMPORTANT that you keep important documents on more than one disk or use another computer to store them reliably. The use of a mainframe or network filestore to keep filed copies of documents is a normal procedure. As a general rule you should ensure that you have a copy of any document whose loss would be annoying if you were to lose it.

Follow these rules for handling floppy disks:

1. Keep the floppy away from magnetic fields and temperature extremes. Keep them clear of televisions and do not put them on top of disk drives.

2. Never, ever touch the floppy's magnetic surface.

3. If you write on a label which is already on a floppy, use a soft-tipped pen and don't press hard. Don't use ball points.

4. Do not bend or fold the floppy.

5. Keep the floppy clean and do not put it on dusty or wet surfaces. When not in use, put the floppy back inside its protective sleeve with the slot exposing the magnetic surface pointing into the sleeve to afford it maximum protection. Keep the sleeve clean also. Do not use Liquid Paper or other corrective fluids on the labels of floppy disks; it flakes off and enters the protective sleeve of the disk.

6. Keep the area around the computer clear and have a floppy disk box or library case handy where disks not currently in a disk drive can be placed (after being returned to their protective sleeves).

Recovering from Disk Errors

If you have any disk errors or note any dirt or scratches on the surface of the disk, try to copy all important files on the disk to another disk BEFORE serious errors occur.

It is often possible to detect a disk that has a fault on it in advance of the fault becoming serious. The UCSD p-System has a mechanism whereby it tries to re-read disk information several times before reporting a failure to the user. It tries to read the disk 20 times. This will be noted either as an uneven sound (grunk, grunk, grunk) from the disk or as an unduly long disk operation. After the first 10 failures, the system will reset the disk reading heads to their home position and then continue with another 10 attempts. The head reset is often noted as a clattering sound from the disk drive.

Your first indication of an error is likely to come when copying a disk or document in the Filer. The error may be reported as a Bad Block, an I/O Error 17 (meaning Bad Block number) or something similar. They are all serious.

Once you have actually had an error, you should IMMEDIATELY attempt to recover as much as possible of the material on the disk. You should expect that some documents could already be lost.

Each disk has a directory area which holds details of all files held on the disk. If the directory is in a faulty area you have a very serious fault which may mean that all information on the disk could be lost. The UCSD p-System provides a series of aids to try to recover from this eventuality (which suggests that it is a far from rare occurrence). These include the maintenance of duplicate directories on the disk itself, utilities to restore directories from the duplicate, scavenger utilities to examine every bit of a disk looking for anything it can recognise, etc. If you are knowledgeable enough and have a great deal of time to learn about these facilities and use them you can do wonders. However, the simple rule is: if you cannot read the disk

directory you have lost all files on that disk.

Presuming that the fault is not that serious, you should be able to recover a fair amount of the material on the disk. Use the Filer to copy each file SEPARATELY from the bad disk to a pre-initialised (using New-#5. in DiskAids) disk. Do a Filer T(ransfer from #5:= to #4:$ (presuming that the bad disk is in drive #5 and the new disk in drive #4). This will attempt to copy every file over from the bad disk to the new one. This is likely to fail at a file stored over the area where the disk has a fault. However, you will already have recovered some material (hopefully).

Now, use the Filer to T(ransfer all the files FOLLOWING the one being transferred when the transfer of ALL the files failed. This can be done by doing a T(ransfer from #5:? to #5:$ which allows you to say Y(es or N(o to indicate which of the files on the disk are to be transferred. Say N(o until after the one where an error last occurred. Keep doing this until you have all files recovered except the ones which fail to transfer. Now you should have a fair amount of the material from the bad disk - probably all but one document.

Now use the X(amine command in the Filer. This tries to read and rewrite each area of the disk in turn. It MAY recover from the error. If no errors are found by X(amine you should attempt to Transfer the remaining unrecovered files from the faulty disk to the new one.

If you still have files which cannot be read, you should probably treat them as lost at this point. YOU WILL REACH THIS STAGE. After you do you will take a great deal more care to copy documents and realise the true value of having a mainframe or network filestore where you can reliably keep documents for long periods. THE AUTHORS HAVE REACHED THIS STAGE.

Appendix IV Printer Characteristics

The OffLoad system components concerned with listing documents to a printer can support several printer types. In general, most of the commonly used listing features (such as pagination and underlining) will work with most types of printer. However, there are a number of more advanced facilities which seek to exploit the particular capabilities of the printer in use. These notes give a guide to the printer specific details necessary to more fully exploit your particular printer.

The number of vertical lines to the inch can be specified on most printers. If default formats are used the OffLoad listing components assume that this is 6 lines to the inch. The number of characters per inch along the line may also be specified in many cases. This can be set to any value that produces results that please you. However, you should note that there will be a maximum number of characters across the page before "wrap-round" occurs (where the end of a long line is broken and put on the start of a new line). If this occurs, make the number of characters per inch higher or modify your documents to have

less characters across the page.

The OffLoad listing components assume that your printer will NOT generate an extra line feed if a carriage return is sent to it. If you notice that all printing is double spaced where this is not required, alter the switch settings on your printer such that the extra line feed is not generated.

When using the LIST utility to obtain the best results for your printer you must specify the type of printer you are using. The following types of printers are currently available:

Diablo 630 Printer:

Diablo A4 (not sheet feeder) - A
Diablo A4 (sheet feeder) - 4
Diablo A5 (sheet feeder) - 5
Diablo 2/3 A4 (sheet feeder) - 2

Spinwriter 5515 Printer:

Spinwriter (with sheet feed) - S
Spinwriter (no sheet feed) - W

Papertiger 440 Printer:

Papertiger 440 - P

Newbury 8510 Printer:

Newbury 8510 (normal mode) - N
Newbury 8510 (incremental print) - I

Tec Starwriter 44 Printer:

Starwriter (with sheet feed) - T
Starwriter (no sheet feed) - R

Appendix V The OffLoad Program Structure

A simple startup program is used as SYSTEM.STARTUP on the system disk so that the system is entered when the OffLoad System Disk is booted. The program may chain to the Filer if Date setting is required. It then chains a user program *STARTUP.CODE if this is provided by a user. The program then chains onto the main OFFLOAD program.

In order to avoid UCSD command prompts flashing on the screen, the Filer and Editor are not entered by simple redirection of system input. Instead their code files have been renamed to *FILER.CODE and *EDITOR.CODE so that they can be executed as if they were normal user programs by chaining.

The main OFFLOAD program reads a data file *OFF.INFO.DATA to set up values related to the machine environment in use (e.g., number of blocks on a disk, how to format disks, etc.). If this data file is not present or is out of date compared to the revision number of the OFFLOAD program, a text file *OFF.INFO.TEXT is read to initialise the data file. This operation and the movement to a new revision number for the program and information file is automatic and does not require any action (such as file removal) by a user - so long as some disk space is available.

Integrating another system employing program chaining into Offload

FUND is a self contained suite of programs which use chaining between components in a similar fashion to OffLoad. FUND and OffLoad can coexist because they have features which enable their use of chaining to be preserved and a return to the calling package made.

OffLoad and FUND clear the chaining queue when they begin execution. This prevents outstanding chains from the calling package interfering with the chaining mechanism of the called package. When the package finishes execution, a chained call is made to a nominated Quit program. This may be null to return to UCSD command level or may be the calling package to return to OffLoad or FUND as a caller.

To call FUND as a component of OffLoad the following steps must be taken by the OffLoad System Disk Builder (NOT THE USER).

1. Edit the file MAINMENU.TEXT provided in the FUND system to have OFFLOAD as the last program called on Quitting from FUND.

2. Make a copy of MENU.CODE (the main entry level program for FUND). Call it FUND.CODE. This is used to enable the fund program to be called by X(ecute) *FUND rather than the "anonymous" name MENU. MENU.CODE must also be present as it is used internally by the FUND program.

3. Put all the FUND components on the OFFLOAD System Disk.

In the current version of OffLoad on the SuperBrain microcomputer, FUND is not available as an executable subsystem since there is not enough disk space for this. With a winchester disk based OffLoad system, the above scheme could be adopted.

Appendix VI Preparing a set of user disks from the OffLoad Master

The following steps should be taken to prepare a set of user for use with an OffLoad workstation.

1. Copy the Offload system release disk onto a formatted disk using the T(ransfer facility in the F(iler. Use a complete volume to volume transfer (e.g., #4 to #5).

2. Take your own licenced copy of UCSD p-System IV (if you do not have a licence you may not run OffLoad) and copy the bootstrap area of that disk onto the copy of the OFFLOAD disk. Do this using the BOOTER or BOOTCOPY UCSD p-System utility.

3. The OFFLOAD system disk is now ready for use. There are various files on the disk which may be altered to allow simple use of your printer and allow you to reset various defaults used by the system such as page layouts for printing.

   *PROSE.INFO may be altered to set directives which should be adopted by PROSE for all documents processed. The provided *PROSE.INFO enables underlining with the tilde ("~") character and the explicit blank character is the back quote ("`"). If you are using a sheet feeder on a NEC Spinwriter you may alter the .OUTPUT options to allow for this. A comment in *PROSE.INFO will help in this respect.

4. Format and F(iler Z(ero up to 4 disks depending on the requirements. One is mandatory and should have name SPARE:. A user disk to get the user started should be provided (a suggested name is USER:). If the user will use the MAIL system name another disk MAIL:. If the user will use the FUND system name another disk FUND:.

Glossary of terms used in the OffLoad Documentation

BOOT — To start up the OFFLOAD (or any other) system. This is the first thing you do when you start using the system (or the last thing you try if you get totally stuck). REBOOT means to start off again.

BLOCK — A large lump of information on an area of disc. Any document or file consists of a whole number of these. A bad block contains a part of a disc that has been damaged, so all the information stored in that block has been lost.

CONFIGURE — To change a system to make it more suitable for a particular application. eg. the editor may automatically set left and right margins for you. (see ENVIRONMENT, PARAMETER)

CURSOR — The white rectangle or flashing underline symbol on the screen which shows where typing will appear, and where editor commands will take effect. When editing, it can be shifted around with the 4 "arrow" keys.

DATA BASE — A collection of information (stored in a computer) about a subject that is available for use in a number of ways, eg. a company's data base may contain details about suppliers: accounts held with them, addresses for contacting them and information about their products.

DEFAULT — The value chosen automatically for a parameter if no other is specified.

DIRECTIVE — An instruction (normally included within a document; possibly a single character) to change a system parameter (see PARAMETER). eg. PROSE directives change paragraph margins etc.

ENVIRONMENT — A "closed system" within which a user may perform certain operations. By staying in a well-defined area, the user shouldn't get confused.

FILLING — Text may be adjusted automatically to "fill" each line of text with as many characters as possible. This looks neater, but care must be taken to ensure that diagrams etc. aren't formed into paragraphs accidentally. Instructions for using this feature in both PROSE and the editor are available.

HOST COMPUTER — A large computer (probably costing millions) that allows many people to use it at once, from terminals that may be miles apart. This provides facilities unobtainable from a micro-computer, and also provides more secure and reliable storage for valuable files and documents. EMAS is one particular host. A computer of this type is often referred to as a MAIN-FRAME.

JUSTIFY — Left justification aligns each line in a piece of text against the left-hand margin. Right justification does the same on the right. If prose is asked to both left and right justify, the spacing between individual words on each line is automatically adjusted to fit the line-size exactly.

LIST — (In addition to conventional English usage.) To print a document on a printer. The paper output (listing) is often called HARD-COPY.

MENU — A list of options available to the user, often arranged vertically and often selected by simply choosing a number or single letter beside each one (like a Chinese restaurant).

MODE — A sort of "environment within an environment". eg. in LIST mode, you can't accidentally alter files by EDITing etc.

PACKAGE — A collection of suitable utilities collected together to make them easy to select and use for a particular purpose (like a bicycle tool-kit).

PARAMETER — A piece of information held by OFFLOAD about OFFLOAD. eg. the printer type you have, the left and right margins in the editor etc.

PORT — The socket in the back of a computer that allows it to be connected (via a cable) to a printer, or perhaps another computer.

PREFIX — Something on the start of a word. Here (connected with filenames) it means an indication of which disk-drive you intend to use (usually omitted, unless you want drive #4, when you say "#4:" or "*"). (see SUFFIX)

PROMPT — A request by the computer for the user to type in some information or to select an option. It may contain an abreviated list of the options available.

p-System — This is the underlying environment (which you may never see) that contains OFFLOAD in exactly the same way as OFFLOAD contains LIST, PROSE etc.

QUIT — Get out of the mode you are in, back to the one you entered it from.

REBOOT — See BOOT.

RECORD — A collection of all information about a particular item in a data base. Eg. all the available information about a particular employee.

SUFFIX — Something on the end of a word. With filenames, it means an indication (which can often be omitted) of what sort of information is contained within the file named (usually ".TEXT" for normal text).

TILDE — The character (~), often also called TWIDDLE or SQUIGGLE. This normally controls underlining in LIST and PROSE.

TOGGLE — Successive operations swap between two states, ON or OFF. eg. a ball-point pen extends or retracts each time you press ("toggle") the button; the shift-lock on a keyboard may also behave like this.

UCSD Version IV — In this case, it means the same as p-System. Version IV is a particular release of this system.

USER — You, or anybody else who happens to be using a computer.

WINDOW — There isn't enough room (often only 24 lines) on a screen to show you the whole of the document being edited, so only a portion of it is displayed at any one time as if seen through a window. The portion seen is itself commonly described as 'the' window.