PRENTICE COMPUTER CENTRE
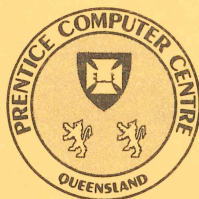
UNIVERSITY OF QUEENSLAND, ST. LUCIA, QUEENSLAND, AUSTRALIA. 4067.

NEWSLETTER

N-309   June 1986

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Authorized by the Director of the Computer Centre

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1. Newsletter Summary

- Fair warning is given that inappropriate use of the central computer systems will not be tolerated. Recently, operational problems were created on the IBM system by students sending multiple copies of rubbish files to other students.

- A new version of the Operating System, VMS Vesion 4, will be installed on the VAX before the start of second semester. The new version has been in operation at other sites for over a year and we expect that it will be reliable.

- Two simulation packages (DSL/VS and CSMP111) are now available for trial use on the IBM 3083E. Please take the opportunity to evaluate these packages as the Centre will purchase them only if there is a justification.

- To avoid the confusion with the definition of the ENTER and RETURN keys on VT100 terminals using the IBM system, both keys will have the same function as from 24.7.86

- Files can now be sent between VAX/VMS and UNIX* on the IBM system. The Centre's phototypesetter (MCS8400) is now supported by the typesetting package (TROFF) that runs under UNIX* on the IBM system. Most of the seventy-plus type fonts on the phototypesetter are now available to VAX- and IBM-TROFF users.

- Users of PASCAL on the KL10 are advised of transfers of the various versions available.

- A detailed list is given of PC's for which versions of the program KERMIT can be obtained.

- Information is supplied concerning FORTRAN compilers for PC's.

- The OTC Minerva System and the Telecom Telememo System will merge into a compatible service around August 1986.

- Courses which are provided free to staff and post-graduate students are listed. The last *Introduction to the PDP10* course will be given in September.

Director
extension 2189

2. Central Computing Facilities — Allan Woodland, ext. 4017

Operations — Sandra Campbell, ext. 3471
Systems Software & Extensions — Ian Burgess, ext. 4074

2.1 To Supervisors of Students using Computing Facilities

A significant amount of disk space is set aside as "spool space" for transfer of messages and files between users virtual machines on the IBM system. Some students have recently created operational problems by sending multiple copies of rubbish files to other students, thereby choking up this spool space.

While the intention may very well be mischievous rather than malicious, it does cause considerable problems. So far we have simply "nologged" offenders until their supervisor contacts us but, if the problem continues, it may be necessary to deny access for a period of time in order to emphasize the seriousness of the problem.

UNIX* — Trade mark of AT&T Bell Laboratories

It does seem that many users may be unaware of the cost, in terms of resources used, of computing in general, and of an "unlimited access" system as presented by the IBM in particular. I would greatly appreciate it if course supervisors could point out to students the difficulty which can be caused to other users, as well as the Centre's Operations group, by a few unthinking people misusing system facilities.

Allan D. Woodland
extension 4017

2.2 VMS Version 4 Features

Version 4 of VMS will be installed before the start of second semester.

There are quite a few new features; the most significant and obvious ones will be described in this article. The Centre has one complete set of documentation which may be referenced if necessary. In general it will be easiest and quickest to use the HELP facility to get more detail than is given here.

Command line recall and edit

One of the most appreciated features of version 4 is the ability to recall earlier commands and repeat them, perhaps with some change. Prior to version 4, the current line on your terminal could be edited by <DEL> and ^U. This feature has been expanded. By default line editing is enabled for VT100 and VT200 compatible terminals. Others need SET TERMINAL/LINE_EDITING to enable this feature.

Control	Keypad	Action
A	F14	Switch between overstrike and insert mode
B	F9 or ^	Recall the last line entered
D	<left>	Move cursor left
E		Move cursor to end of line
F	<right>	Move cursor right
H	F12 or <BS>	Move cursor to beginning of line (not the same as <DEL>)
J	F13 or <LF>	Delete word to left of cursor
U		Delete all characters to the left of cursor
V		Quote character (override an editing key)
R		Retype the current line
	<DEL>	Delete character to left of cursor

The initial setting of OVERSTRIKE/INSERT mode may be set by

SET TERMINAL/INSERT or /OVERSTRIKE,

the default being OVERSTRIKE.

To edit previously entered commands, they are first recalled by RECALL or Control-B or ^. One user mode line and up to 20 DCL command lines are available for recall.

RECALL/ALL lists all 20 command lines. Choose one of these with RECALL n for the line numbered *n* or RECALL x for the last line beginning with the character x.

Long filenames

The filename specification format is (still)

node::device:[directory]filename.type;version

The maximum lengths of these fields are extended to —

Node	6	(a logical name for node may be up to 61 characters)
Device	15	(up to 63 character logical name)
Directory	39	
Subdirectory	39	
Filename	39	
Type	39	
Version	5	

The maximum aggregate length is however 255 including separators.

Note that not all utilities and user programs can be expected to cope with the new longer filenames, so these should be used with some discretion.

Directory-naming conventions

Currently, directory names are numeric, e.g. [164100]. Under Version 4, directory names will consist of the departmental or course code and the user-name; they will be alphabetic.

The directory name will be of the form
[AAA...BBB...]
where AAA... is the departmental or course code and
BBB... is the user-name
e.g. [GAEJONES] — department GAE and user JONES.

Terminal connect and disconnect

When a dial-up line is lost, and in certain kinds of network failures, VAX jobs were logged out immediately. With version 4 these processes are left in a disconnected state for a short while (15 minutes).

If you attempt to log in while such a disconnected process exists, you will be offered the chance to connect to it instead of logging in a new process. Processes may be deliberately disconnected to free the terminal for other work. The disconnected process may continue to run.

DISCONNECT with no option will leave the job idle until you connect to it — within 15 minutes.

DISCONNECT/CONTINUE will allow the process to continue until it becomes inactive or requires terminal action. You have 15 minutes to connect to idle disconnected processes or they will be terminated (logged out).

SHOW USERS shows disconnected processes with associated virtual terminals, e.g., VTA1 instead of the usual TTA1.

To connect to a disconnected process, you may either logout and attempt to log in again as explained above or use the CONNECT command to disconnect your current process and connect to a detached one:
CONNECT VTAxxx: [/LOGOUT] [/CONTINUE]
where the options enclosed in brackets, [   ], are alternatives determining what is to happen to the current process which is being disconnected implicitly.

User definable keys

The keypad keys of VT52- and VT100-compatible terminals and the keypad and function keys of the VT200-series of terminals may be defined for DCL commands and for some applications, e.g., MAIL, DEBUG.

DEFINE/KEY associates an equivalence string and a set of attributes with certain peripheral keys on the terminal keyboard. The command is:
DEFINE/KEY *keyname equivalence-string/qualifiers*
See HELP DEFINE/KEY for details of the qualifiers.
SHOW KEY shows the equivalences that have been set up.
DELETE/KEY removes the definition.

Switching between the normal keypad functions and the defined equivalents is accomplished with
SET TERMINAL [/APPLICATION] [/NUMERIC__KEYPAD]
e.g., DEFINE/KEY PF3 "SHOW TIME"/TERMINATE causes the PF3 key to transmit "SHOW TIME<cr>".

Enhancements to DCL commands

Digital Command Language (DCL) has several new commands and new options to old commands.

Control over broadcast messages and DCL messages
Sometimes messages sent to your terminal may be disruptive or simply intrusive. Perhaps you are using a high quality hard copy terminal. In these cases, some or all classes of broadcast messages can be disabled.

SET BROADCAST = (*class*,[NO]*class*)

where *class* is one of ALL, NONE, DCL, GENERAL, MAIL, OPCOM, PHONE, QUEUE, SHUTDOWN, URGENT, *username*.

SHOW BROADCAST displays the enabled classes.

DCL uses the logical SYS$PUTMSG for all informational and error messages, so this can be redefined away from the terminal if you wish.

SET MESSAGE can be used to suppress part or all of a message.

To capture all output destined for your terminal you might assign a file with the logical name SYS$OUTPUT.

The /LOG qualifier is now applicable to many more commands to give a reassuring message when the command completes successfully. This provides another way of obtaining a record of a terminal session, i.e., SET HOST/LOG = *file* will create a log of an entire terminal session, which is great for documenting examples showing how to run interactive programs.

Features for command procedures
Some of the new features are particularly applicable to command procedures.

Command files can be protected against reading by users who are able to execute them.

Verification (SET VERIFY) used to show only the DCL command lines, i.e., the running of procedures. This is termed *procedure verification*. With version 4, *image verification*, showing the data from the command stream is also available.

Command	Output
SET NO VERIFY	none
SET VERIFY = PROCEDURE	commands displayed
SET VERIFY = IMAGE	data records displayed
SET VERIFY	all input displayed

The function F$VERIFY() now returns the values 0, 1, 2 or 3 for the above cases. The new lexical function F$ENVIRONMENT with the arguments VERIFY_PROCEDURE and VERIFY_IMAGE may also be used to test the current settings.

Detect (by time-out) a lack of response to a READ request.
READ/TIME_OUT = *n*/ERROR*label* ... will branch to the label if the user does not respond within *n* seconds.

Indirect command files can be nested to 16 levels.

Features for batch users
The log file of a batch job may be read while the job is in progress. It is normally updated once a minute, but this rate can be set by

SET OUTPUT_RATE = *delta time*

Batch jobs can be restartable (on a system crash or shut down). To enable this the control file must an initial command —

$ IF $RESTART THEN GOTO 'BATCH$RESTART'

and have checkpoints within it in the form —

$ SET RESTART − VALUE = *label*

This sets the value for BATCH$RESTART in case it is needed. Then the job must be submitted with the qualifier, /RESTART.

New lexical functions
Lexical functions are useful in writing fairly sophisticated command procedures.

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F$EDIT returns an edited string. Options include removing spaces, tabs, comments and doing case conversion.

F$ELEMENT returns an element from a list of variable length strings.

F$ENVIRONMENT returns the state of the settings for many SET commands, e.g., ON__CONTROL__Y, INTERACTIVE.

F$TRNLNM translates a logical name.

F$TYPE determines whether a variable is of string or numeric type.

F$CVTIME returns portions of date fields.

New qualifiers for DCL commands

The /OWNER qualifier to the DIRECTORY command displays the owner User Identification Code (UIC), but until version 4 of VMS there was no way to select files based on owner. There is now a new file selection option, /BY__OWNER = uic, which allows one to select files according to the file owner (creator). This option and other file selection options are now available with more commands, e.g., DELETE and SET FILE

DELETE
> /BACKUP   if the file has been backed up
> /BY__OWNER = uic
> /EXCLUDE = filespec   may be wild filespec
> /ERASE   for high security data (wipes the disk clean)

DIRECTORY
> /ACL   shows Access Control Lists
> /BACKUP
> /BY__OWNER = uic
> /FILE__ID
> /SECURITY   shows ACL and protection
> /SELECT = SIZE = MAXIMUM = n
> /SELECT = SIZE = MINIMUM = n

SET FILE
> /BEFORE
> /SINCE
> /BY__OWNER = uic
> /CREATED   for use with /BEFORE or /SINCE
> /ENTER = new-filespec   create a new link to an existing file
> /REMOVE   remove a link to a file
> /ERASE__ON__DELETE
> /UNLOCK
> /END − __OF__FILE

MOUNT
> /[NO]UNLOAD   change the dismount default

SET MAGTAPE
> /SKIP = option   position tape by record, block, file
> /END__OF__FILE   write end of file mark

RUN
> /DETACHED   creates a detached process
> /DUMP   if the process crashes it will be dumped.
> The .DMP file may be analysed by ANALYSE/PROCESS__DUMP

SET PROCESS
> /DUMP   causes a dump to be taken if an image should crash due to an unhandled condition.

Use the HELP facility for explanations of these options.

Printer Output

While there have been many improvements to the handling of queues, most are not visible to the general user.

There are extra flag and trailer pages to assist the operator in separating jobs.

Smaller jobs will be selected for printing ahead of large jobs in the print queue.

SHOW QUEUE/FORMS is a new qualifier which shows which forms are available on a printer. Either the forms name or the number can be used with the PRINT/FORMS = x command.

Part of a large file can be selected for printing by the /PAGE = ([first,]f141]last) option.

There is a /NOTE:text option to print a note on the flag page, and a /OPERATOR = text option to give the operator some special set up instruction.

Security

Erase on delete

Where very sensitive data is involved, it may be considered that data left on the disk when a file is deleted represents a security risk. There are a number of commands to ensure that such data is erased when the file is deleted,

Access Control Lists

In addition to the normal file protection system, files may have associated with them a list specifying who is allowed what access and who is to be excluded. These Access Control Lists (ACL) can be created by using a special editor.

EDIT/ACL *file* or SET FILE/EDIT/ACL *file* invokes the ACL editor. SET FILE/ACL (without the /EDIT) would be used where the ACL is fairly simple or where multiple files are involved.

ACLs provide a high degree of flexibility since the access allowed to a user or group of users can be more or less restrictive than the normal protection scheme allows and this can be different for network, batch and interactive jobs.

An ACL consists of a number of entries (ACEs) each containing an identifier and access rights. The identifier is a UIC (numeric or named) which may be coupled (by the symbol) with one of BATCH, NETWORK, INTERACTIVE, LOCAL, DIALUP or REMOTE. The access rights are one or more of READ, WRITE, EXECUTE, DELETE, CONTROL and NONE.

To allow all members of group 123 read access to the file, TEST.DAT, but no network access to it, the command is —
```
        SET FILE/ACL = (IDENTIFIER = NETWORK,ACCESS = NONE),(IDENTIFIER = [123,*],
                        ACCESS = READ)) TEST.DAT
```
Note that the order is important. If the entries (ACEs) had been given in the other order group 123 users would have had network access.

The command DIRECTORY/ACL displays existing access control lists.

Group privilege

Persons in charge of a group of users, for instance a lecturer with a class of students, may apply for Group Privilege, GRPPRV, which will allow the supervisor access to files belonging to students via the SYSTEM protection field instead of the GROUP protection field. This privilege also gives the supervisor control access to those files, allowing a powerful group management facility.

Password Control

It has always been advised that passwords should be changed on first login and at intervals thereafter. This is now enforced; heed the warnings you see when you log in.

Generated Passwords

The GENERATE option to SET PASSWORD offers a list of pronouncable random passwords to choose from.

Expired Passwords

A warning is given of impending expiration for 5 days before a password is due to expire. An expired password will still work, but *only once*. The password *must* be changed during that session.

Secondary Passwords
For very sensitive accounts a secondary password could be required.
Notification of login attempts
At login you will notice that you are told when your account was last used as well as how many unsuccessful log in attempts were made since the last log in. The system manager also has audit alarms to detect miscreants.

New VMS Utilities

ANALYSE/PROCESS_DUMP
The symbolic debugger is invoked to examine a process dump file created via RUN/ DUMP or SET PROCESS/DUMP commands. HELP ANALYSE/PROCESS–DUMP gives the command syntax and the qualifiers available.

EXCHANGE
This replaces the compatibility program, FLX. It allows conversion between Files–11, RT–11 and DOS–11 tapes and disks.

MOUNT
There are new MOUNT qualifiers, /AUTOMATIC for multireel tape volumes, /INITIALIZE for use with /AUTOMATIC and /[NO]UNLOAD to set the default for DISMOUNT.

PATCH
The utility program, HEXZAP, has been replaced by an option to PATCH:
<div align="center">PATCH/ABSOLUTE/[NO]NEW_VERSION file</div>
Patches a file at absolute virtual addresses, by default creating a new version.

EDT
The editor, EDT, has new features, for users from WPS systems, for the new VT200 series terminals and to be callable by program. New NOKEYPAD commands, 12 in all, allow function keys to be defined in a way that is more compatible with WPS and DECMAIL word processing. SET command has more options, some of which set WPS compatibility. SHOW commands corresponding to every SET command. Support for LK201 function keys. Callable as a subroutine from application programs.

MAIL
The MAIL utility has been rewritten. There are some new commands and changes to existing commands, the personal mail files are now indexed sequential files and there are facilities for personal names and automatic forwarding of mail. The default file, MAIL.MAI, will be automatically converted the first time you use MAIL. Mail is stored logically in folders, e.g. NEWMAIL, MAIL, WASTEBASKET, and any others you define. The HELP facility within MAIL shows how to use SET FOLDER to access these folders and other interesting SET commands, such as SET FORWARD and SET AUTO_COPY.

Sort/Merge
This utility is a completely new version.
- It is two to four times faster and cheaper
- can handle longer files and more key fields
- can delete records with duplicate keys
- can be called from an application program
- has a variety of collating sequences (ASCII, EBCDIC, multinational or user defined)

Symbolic Debugger
The screen mode and keypad debugging has been enhanced for VT100 and VT200 families of terminals. There are also some new commands and some commands have been extended.

Runtime Library
There are some extra features needed for Cobol version 3 and Fortran version 4. New routines of general interest include LIB$DELETE_FILE, LIB$RENAME_FILE, LIB$TRIM_FILESPEC and LIB$GETJPI.

LIB$EMULATE is no longer required in order to have G_floating and

H_floating instructions emulated. The emulation code is now sharable and is available without any special routines being called.

The runtime library includes a set of screen handling routines and a new set of string manipulation functions.

The library is split into thirteen sharable images for improved efficiency. Activation of old (pre-version 4) images will take longer, so it is advised that programs be relinked to improve their performance.

Changes in Logical names

The expanded logical name table facility is aimed at supporting RMS search lists, providing more control over shared logical names and allowing logical name tables to be searched in a user specified order.

Named logical name tables

In addition to the process, group and system logical name tables, there is a new Job logical name table and users may create their own tables for particular applications. There are directories of tables and a protection scheme for tables similar to the traditional file protection mechanism. The standard tables a process has access to are —

    LNM$PROCESS_TABLE
    LNM$JOB
    LNM$GROUP
    LNM$SYSTEM_TABLE

The job table is accessible to all sub-processes of a job and contains symbols such as SYS$LOGIN, SYS$LOGIN_DEVICE, SYS$SCRATCH, temporary mailbox logical names and logical names for privately mounted devices. The existence of this table makes access by subprocesses simpler by giving wider access to those names.

The contents of a table can be displayed by SHOW LOGICAL,
            $ SHOW LOGICAL/TABLELNM$PROCESS_DIRECTORY/FULL
The full structure can be seen by SHOW LOGICAL/STRUCTURE

Logical names for search lists

To support search lists, a logical name may now be multi-valued. The format for the define command is
            DEFINE logical-name equivalence-name[,...]
A search list is created by specifying more than one equivalence name for a logical name, separating them by commas. In this way, you can use a single logical name to access different directories on different disks or different files in different directories.

    For example,
      $ DEFINE LIST DSKB:[123100.MEMOS],DSKB:[123100.WORK]
      $ SHOW LOGICAL LIST
      "LIST" = "DSKB:[123100.MEMOS]" (LNM$PROCESS_TABLE)
        = `DSKB:[123100.WORK]'
This defines the logical name LIST to be a search list of two equivalence strings. When you use a logical name that is a search list, the system translates it a number of times using each equivalence string listed in the definition. Using the logical name defined above, e.g.,
      $ DIRECTORY LIST:LETTER.RNO
      Directory DSKB:[123100.MEMOS]
      LETTER.RNO;1
      Total of 1 file.
      Directory DSKB:[123100.WORK]
      LETTER.RNO;2
      LETTER.RNO;1
      Total of 2 files.
      Grand total of 2 directories, 3 files.
This shows the existence of various versions of the file in both directories. When a

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search list is used with a command that does not accept wild cards, e.g., RUN, then only the first applicable file is found.

Version 4 of VMS represents a major release of Digital software for the VAX. For the Prentice Computer Centre also the upgrade to version 4.3 involves rewriting symbiont programs to drive the remote printers, e.g., Griffith printer, and the network plotters and typesetter.

There are also implications for the accounting system including such desirable features as account expiry dates which require some local development. For this development, the intention is to work on Saturdays to cause the minimum disruption to normal services and to make the changeover during the intersemester break.

Some Australian universities have been using VMS version 4 since as long ago as February 1985, so we have some confidence in its reliability.

Ian Burgess
extension 4074

2.3 Simulation Packages Available on UQVM

The DSL/VS and CSMP III simulation systems are now available for evaluation on the IBM 3083 system (UQVM).

We have a copy of the reference manuals for these products available for perusal by interested parties.

DSL/VS (Dynamic Simulation Language/VS)
The Dynamic Simulation Language/VS (DSL/VS) is a high-level programming language, suited primarily for the simulation of engineering and scientific problems of a continuous nature. Because DSL/VS facilitates the solution of ordinary differential equations which frequently are functions of time, it is particularly useful for transient analysis of dynamic systems. Furthermore, since dynamic systems are often modelled and studied in the frequency domain, several features are built into DSL/VS which perform frequency response analyses.

There are many DSL/VS sample programs provided with DSL/VS,, which have been extracted from the DSL/VS Language Reference Manual.
References:
SH20–6287 – DSL/VS Program Description/Operations Manual
SH20–6288 – DSL/VS Language Reference Manual

CSMP III (Continuous System Modelling Program III)
Continuous System Modelling Program III (CSMP III) is an IBM program product for the simulation of continuous systems.

CSMP III provides:
- Functions for performing the simulation of continuous systems.
- The capability of using FORTRAN IV statements to extend models.
- The ability to store commonly-used model elements in a 'model library' for inclusion into other CSMP III models.
- A wide choice of formats for obtaining print-plotted and tabulated output of simulation results.

There are a few CSMP sample programs available on the system, some of which are distributed with CSMP III, others have been extracted from the CSMP III manual, whilst yet others have been contributed from other literature.
References:
SH19–7001 – CSMP III Program Reference Manual (describes the language.

Arthur Pool
extension 2952

2.4 Yale Modifications: VT100 CLEAR Key

There has been a great deal of confusion generated by conflicting definitions for the **ENTER** key. IBM manuals frequently refer to an **ENTER** key. Most ASCII terminals supported under the Yale software have a **RETURN** key which performs the same function as IBM's documented **ENTER** key. The confusion arises on the VT100 because it has a key labelled **ENTER** on the numeric keypad, *as well as* the **RETURN** key. At present the key labelled **ENTER** causes a CLEAR function to be performed.

From Monday 24th July, the **ENTER** key will be re-defined to have the same effect as the **RETURN** key, i.e. IBM's **ENTER** function. There is still CONTROL–C available to generate the CLEAR function. Most times the PA2 key can be used instead of the CLEAR key. The great advantage of the PA2 key over the CLEAR key is that the command line is not cleared. PA2 is generated on the standard Yale keyboard by typing the sequence "**ESC .**". On the VT100, the minus key on the numeric keypad also causes the PA2 function.

Greg Lehmann
extension 3020

2.5 UTS/VMS File Transfers

Two new utilities now exist to transfer files between the VAX and UTS on the IBM. These commands are called UTSREAD and UTSSEND. They exist on the VAX and further information can be obtained by using the VMS help facility.

UTSREAD reads files from the JAN–FILES on the VAX and re-formats them to VMS format. The original file on JAN–FILES is left there, and so must be cleaned up by the user if he/she does not wish to be charged for the disk usage. To get a file from UTS to VMS, the user has to use the TOVMS command:

TOVMS *filename*

The TOVMS command under UTS only takes one filename. Multiple files can be sent by using TAR to pack multiple files into a single file. The file should then be sent to the AX using TOVMS. UTSREAD with the TAR qualifier should then be used for the re-formatting. TAR can then be used under EUNICE to unpack the files.

Files sent from the VAX to UTS automatically appear on the user's UTS area. No re-formatting has to be performed.

Greg Lehmann
extension 3020

2.6 Typesetting under UTS

Typesetting is now available under UTS on the IBM. The typesetter supported is the MSC–8400 (known to TROFF as MCS). Typesetting may be prepared using any of the standard packages such as **mm** or **man**. The **ms** macros are *not* supported under this version.

To produce a file for typesetting, the following command could be used:

troff -mm *input-file* > *output-file*

Once this file has been produced, it can be sent to the Computer Centre's VAX for spooling to the photo-typesetter. You must, however, have a VAX account to be able to do this. By giving the command TYPSET, you can cause files to be sent to

the VAX for typesetting. You will be prompted for file, VAX account and password. The password will not be echoed. If the username or pasword is incorrect, the file will not be sent. At present there is no message if this occurs.

<div align="right">

Greg Lehmann
extension 3020

</div>

2.7 MCS Font Changes to TROFF

Until recently, only a small number of the 70 fonts on the MCS–8400 phototypesetter were available to the TROFF user. We have recently augmented support to the stage where we now support most of the fonts. Unfortunately the Dingbats fonts are only partally supported (viz., the numbers only).

Most of the fonts included in the typesetting manual are available. These include **STENCIL** and *Florentine Script*.

Below is a full list of the available fonts, with their 1- or 2-letter call-up names:

B	Englih Times Bold	O	Gothic Regular
BI	English Times Bold Italic	OB	Gothic Bold
C	Century Schoolbook	OE	Gothic Extra Bold
CB	Century Bold	PA	International Phonetic
CF	Clearface Contour	PE	English Phonetic
CI	Century Italic	R	Englsih Times Medium
CX	Century Bold Italic	RB	Rockwell Bold
DA	Dingbats 200	S	Special Character Font
DB	Dingbats 300	SB	Souvenir Bold
EB	Eras Bold	SC	Script Text/Misc.
ED	Eras Demibold	SI	Souvenir Medium Italic
EM	Eras Medium	SL	Souvenir Light
EO	Eras Outline	SM	Souvenir Medium
EU	Eras Ultrabold	SO	Souvenir Outline
FS	Florentine Script	ST	Souvenir Light Italics
G	Garth Graphic	SX	Souvenir Bold Italic
GB	Garth Graphic Bold	TL	Tiffany Light
GE	Goudy Extrabold	TM	Tiffany Medium
GH	Grouch	UB	Univers Bold
GI	Garth Graphic Italic	UE	Univers Extrabold
GR	Greek	UF	Univers Extrabold Expanded
GX	Garth Graphic Bold Italic	UI	Univers Medium Italic
H	Helios	UL	Univers Light
HB	Helios Bold	UM	Univers Medium
HO	Helios Semibold Outline	UT	Univers Light Italic
I	Englsih Times Italic	UU	Univers Ultrabold Expanded
IE	Inferior English Times	V	Baskerville Medium
II	Inferior English Times Italic	VB	Baskerville Bold
KE	Korinna Extrabold	VI	Baskerville Italic
M	Mallard Medium	X	Stencil
MB	Mallard Bold	XO	Stencil Outline
MI	Mallard Italic	Y	University Roman
MX	Mallard Bold Italic	YB	University Bold
NB	English Times Display Bold	Z	Superior English Times
NC	Englsih Times Condensed	ZI	Superior English Times Italic
NX	English Times Display Bold Italic		

<div align="right">

Greg Lehmann
extension 3020

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2.8 Changes for KL PASCAL Users

We wish to inform our clients of the following changes:

1) The version currently on LAN: will be transfered to NEW:; for more information see DOC:OASNEW.DOC and DOC:ASNEW.MEM
2) The version currently on SYS: will be transfered to OLD:; for more information see HLP:PASOLD.HLP
3) The version currently on NEW: will be transfered to SYS; for more information see DOC:PASCAL.MAN

These changes have been implemented to insure that Rutgers PASCAL can be more readily used with FORTRAN–77.

N.B. Please note that we will be deleting the PASCAL version on LAN: on the 1st August 1986. This version will be available on NEW:.

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Ellen Jenkins
ext 3943

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3. Distributed Computing — Geoffrey Dengate, ext. 3391

3.1 KERMIT (Communications Software)

KERMIT is a free program which allows your personal computer to act as a terminal to a larger computer and to transfer files without error to and from any other computer which has KERMIT. All the P.C.C. central systems (IBM, VAX, KL) have a version of KERMIT. KERMIT versions are collected and distributed by Columbia University for Computing Activities, in the United States.

The following KERMIT versions are available on floppy disk:

Computer	Operating System	KERMIT Version
Apple II	DOS 3.3	2.1a
Apple II	CP/M	3.9a
Macintosh		0.8
MicroBee	CP/M	3.9a
Osbourne	CP/M	3.9a
Kaypro II & 4	CP/M	4.05
Bondwell	CP/M	4.05
Amstrad	CP/M	4.05
NEC APC II	CP/M	2.7m
NEC APC III	MS–DOS	2.27
DEC Rainbow–100	CP/M–86	2.7
DEC Rainbow–100	MS–DOS	LC–TERM 2.31
IBM PC & clones	MS–DOS	2.27
Sirius	MS–DOS	1.18
HP–150	MS–DOS	2.26
PDP–11	RT–11 & TSX +	2.26
PDP–11	RSX–11M +	2.26

Recent additions are:

Bondwell CP/M: This is a version which works for any CP/M v3.0 (CP/M+ system, but is limited to 1200 baud maximum data rate.

Amstrad CP/M: As above. The hard part was getting it onto the unusual Amstrad 3" disks. Thanks to Andrew Roscosci, Prince Charles Hospital.

NEC APC III MS–DOS: Thanks to Lisha Kayrooz, James Cook University.

All the above KERMITs are available free from the Personal Computer Support Group if you supply a blank disk, but first please try to obtain a copy from other users in your department. In some cases we cannot make a copy of the disk so you will have to borrow, copy and return our disk. To arrange to get a copy from us, phone David Keenan on extension 4166 (Mon, Wed, Fri), or Chris Barker on 4233, or drop into the PC Support Group office (off lane-way at rear of Hawken Building, between 1pm and 3pm Mon to Fri. At Griffith University, contact Derek Austen at the Computing Support Unit on extension 7682.

Documentation or help files are provided on disk with each KERMIT. If you have an account on the KL10, general information on KERMIT is available in the file DOC:KERMIT.MAN (78 pages). Also, other KERMITs are available to be downloaded from the area DSKX:[5,124], (not [10,213,kermit] as mentioned in the January '86 Newsletter). First read the file 00READ.TXT for a 'Who's Who' guide to the other files on this area.

David Keenan
extension 4166

3.2 FORTRAN Compilers for the IBM PC

The following article was submitted by Dr Alan Miller from The School of Australian Environmental Studies at Griffith University and represent his finding and comments on various FORTRAN compilers for the IBM-PC.

Some of the available compilers and one interpreter:

Language		
Digital Research	Full F77	Also for CP/M-86
IntelSubset		
Lahey	Full F77 +	Requires 8087 or 80287
Microsoft	Subset F77 +	
Prospero	F66	Also for CP/M-80 & 86
Ryan–McFarland	Full F77 +	Requires 8087 or 80287
Supersoft	F66	Also for CP/M-80
Uni. of Waterloo	Full F77	Interpreter, not compiler

Notes:
The 8087 and 80287 are floating-point processors. The cheapest version of the 8087 retails at about A$260.00. F66 and F77 refer to the FORTRAN 66 (roughly equivalent to FORTRAN IV) and FORTRAN 77 standards.

Microsoft FORTRAN is the most widely used of these compilers. The current version (3.31) lacks the following features of the full FORTRAN 77 language:
  i)   subscript ranges, i.e., you cannot have DIMENSION SALES (1958:1984,12) — all subscripts start from 1
  ii) the concatenation operator (//)for character strings is not implemented, nor are the LEN and INDEX instrinsic functions for character variables.
  iii) STATUS = 'SCRATCH'
  iv) ENTRY
  v)   SAVE without a parameter list
  vi) Expressions in the parameter statement, e.g.
          PARAMETER (MAXROW = 24,MAXCOL = 80,NCELLS = MAXROW*MAXCOL)
and a number of other minor features mainly affecting I/O.

Of the full FORTRAN 77's, I strongly recommend Lahey's F77L. It compiles about 6–8 times faster than the Ryan–McFarland compiler (which is also sold with minor changes as IBM Professional Fortran), and about 4 times as fast as Microsoft Fortran. It has the best error diagnostics and warnings of any FORTRAN compiler I have ever used, and it has an excellent debugger. The main disadvantage is that Lahey's do not provide a linker or librarian; you must use the LINK provided with your operating system or purchase PLINK86.

Ryan–McFarland's FORTRAN is an optimizing compiler. The EXE files produced are typically about 10% larger than those from Lahey's F77L, but they execute slightly faster for number crunching. Lahey's appears to be about 10% faster on I/O.

Australian distributor for Lahey's F77L:
    Computer Transition Systems
    P.O. Box 4553
    Melbourne 3001   Telephone (03 537–2786)

Current price of F77L is about A$750.00

For more details contact Alan Miller, AES, Griffith University, phone 275-7458

4. Engineering & Communications Services — Graham Rees, ext. 3288

4.1 Minerva and Telememo

For those who are by now throughly fed up with Telecom's interference in a perfectly good electronic mail system, viz., Minerva — there's more to come!

The present relationship for sending telex is

OTC Minerva   International Telex

Telecom Telememo   National Telex

Yes, folks, you must have accounts on both systems to make effective use of telex.

And now for the good news and to quote from OTC's *Communications Digest* vol 2/no 3 — March/April 1986.

OTC AND TELECOM ANNOUNCE E-MAIL JOINT VENTURE

The electronic mail services Minerva and Telememo will soon merge into one compatible service, probably by August 1986. The single electronic mailbox service has yet to be given a name and will offer users universal access to both international and national electronic mail systems as well as a worldwide telex and electronic publishing facility. OTC's Minerva has been operating since 1983 and now has around 10,000 users whereas Telecom's Telememo was launched in October 1985.

Graham Rees
extension 3288

5. Applications Development — Sarah Barry, ext. 3944

5.1 Information Concerning Courses

Enrolments for all courses may be made by phoning extension 3018.

The following courses will be offered during the period July–September, 1986:

July

RUNOFF	June 30–July 4
	5 half days 9–12am each day
SAS	June 30–July 4
	5 half days 1–4pm each day

Elementary programming in FORTRAN	July 7–11 5 full days 9–12am + 1–4pm each day
SQL	July 14–18 5 half days 1–4pm each day
Introduction to IBM	July 22–25 4 half days 1–4pm each day
Conversion to IBM	July 29–31 3 half days 1–4pm each day

August

SAS	August 4–8 5 half days 9–12am each day
Conversion to VAX	August 14–15 2 half days 9–12am each day
SCRIPT	August 18–22 5 half days 1–4pm each day
SPSS	August 25–29 5 half days 9am–12.30pm each day

September

Introduction to IBM	September 2–5 4 half days 9–12am each day
Introduction to PDP–10	September 8–11 4 half days 9–12am each day

Note: With the planned retirement of the KL–10 within a few years, this is the *very last* "Introduction to the PDP–10" course to be given by the Centre.

Using PC on Network	September 16 1 half day 1–4pm
Conversion to IBM	September 22–24 3 half days 9–12am each day

General Notes:

1. Intending users of the PDP–10 system must be familiar with the content of the course *Introduction to PDP–10* (i.e. terminal usage, file–management, editing) before attending other PDP–10 courses.

2. In corresponding fashion, for the IBM system, users should have attended either *Conversion to IBM* (for previous PDP–10 users) or *Introduction to IBM* (for completely new users) before attending other IBM courses.

3. Courses held at St Lucia (with the exception of CAD/CAM courses) are conducted in the Computer Centre's teaching area near the Physics Annexe. Courses designated (GU) are held in Room 1.50, East Wing, SIA Building at Griffith University.

4. Staff and post–graduate students are admitted free to courses. The charge for internal users is $10.00 per half day; $17.00 per half day for affiliated users; and $37.00 per half day for external persons.

5. Enrolments for all courses may be made by phoning ext. 3018.

Barry Maher
extension 3021

6. Miscellaneous

6.1 Departmental Equipment for Sale

1. LA36 Decwriter in very good condition — $1500 o.n.o. Contact Dr. Rod Girle, Philosophy Department, ext. ???

2. Visual–65 Terminal, as new (12 months old) — $700 o.n.o. Contact Vicki McGowan, ext. 3140 or 3600.