

UNIVERSITY OF QUEENSLAND

Prentice Computer Centre

NEWSLETTER

authorization: Director of the Computer Centre

1 MODEMS - THE APO REPLIES

We are pleased to publish the following letter from the Director Posts and Telegraphs:

" I refer to your letter dated the 27th February regarding the Plan 39 modems provided in November last year.

This malfunction was reported to us on the 8th January and investigations in this State in collaboration with your staff revealed that the problem was due to an inherent design fault in the modem.

The matter was referred to our manufacturer through our Central Administration and modified component parts were consigned to us early this month.

The subsequent modifications to your modems were completed on the 10th March.

Would you kindly convey to your clients our sincerest apologies for the inconvenience caused, and our assurances that the fault has been rectified and that no further difficulties of this nature should be encountered. "

2 FILE SECURITY

Users have the ability through a three digit protection key to allow their files on the PDP-10 to be protected against unauthorized use by other users. Where users have not nominated the type of protection required, the current standard default is to prevent write access by all other users and read access by users other than those on the same project.

Most of our academic users do not concern themselves to explicitly protect files and the standard default of barred access is now resulting in considerable problems to users in the free interchange of files and programs and in making use of our consulting service.

Further, it is considered that those users who wish to maintain confidential or secret information should explicitly protect their files against unauthorized access rather than relying on any default procedure that may be current at the Centre from time to time.

As from MONDAY, 7 APRIL, the standard default protection is to be changed from <057> to <055> on files created from that date. (This amends Section 6.2.3 of MNT-2 Using the UQ PDP-10 System and Section 2.2.5 of MNT-16 PDP-10 System Commands). Thus all users will be able to read a file with default protection.

Those users who wish to hold confidential files on the PDP-10 must explicitly set the desired protection themselves by means of -

- (a) .PROTECT(file name) <protection code>*
- or (b) A program ENTERing and RENAMEing the file with the appropriate protection.

(*Protection Codes are detailed in MNT-2 or MNT-16 or DECsystems-10 User Handbook)

3 UQ MIDITRAN

The following changes have been made to the UQ MIDITRAN system:

- 3.1 The commands .MIDITRAN and .RUN have been changed to *JOB and *DATA to correspond with the text book.
- 3.2 All implied commas, left parentheses and blanks now must be coded specifically by the students. The card plate has been changed as follows:

*JOB,	becomes	*JOB
IF(becomes	IF
READ(becomes	READ
WRITE(becomes	WRITE
FORMAT(becomes	FORMAT

- 3.3 At present all MIDITRAN cards are prepunched with a 6-7-8 in column 12 to identify them as MIDITRAN cards. This allowed the processing of program decks containing a mixture of MIDITRAN and HOLLERITH cards. Because of the costs of prepunching and apparent lack of use of this facility it has been removed. Program decks and data consisting entirely of HOLLERITH cards may be processed by avoiding the preprocessor stage.

3.4 A list facility, enabled by an option in the batch header card, is provided. It operates as follows:

- (a) If the batch header card contains a '+' in column 4, the list facility is enabled. If there is no '+' in column 4, MIDITRAN operates as present.
- (b) If the list facility is enabled and the *JOB card contains a '+' adjacent to the job number, the job is to be compiled and run. If there is no '+' adjacent to the job number the program and data is to be listed but not processed.

e.g. *JOB,+431,FRED will compile if list is enabled,
*JOB,431,FRED
and *JOB,431,+FRED will not.

3.5 The batch header card format is as follows:

col 1-3 Time limit for each student in seconds (F3.2 format)
col 4 '+' if list facility required
col 5-12 Not used
col 12-27 Heading to be used on each page.

3.6 All characters unable to be translated will be replaced by a '?'.

3.7 The deck setup remains as at present except for users wishing to submit a job of Hollerith punched cards. They should use:

```
$JOB  
$DECK CDR.CDR  
.  
 . miditran progs.  
.  
$EOD  
.SET CDR CDR  
.R MIDMON
```

4 ALGOL AND F40 - NEW VERSIONS

New versions of ALGOL and FORTRAN IV have recently been received and are now available on NEW: for evaluation. They are version 27 of F40 and version 4 of ALGOL.

To use the new compilers, users should specify NEW: ahead of SYS: in their search list. This can be done by using the SETSRC command:

```
.R SETSRC
```

```
*M/NEW
```

```
*↑C
```

```
.
```

or by specifying the /NEW switch at login:

```
.LOGIN pj,pg /NEW
```

The Computer Centre would be pleased to receive advice of any difficulties encountered by users.

5 SYMAP PROGRAM

As foreshadowed in the previous newsletter (N-179), the SYMAP program is now available. SYMAP is capable of producing shaded CONTOUR, CONFORMANT and PROXIMAL maps on the line printer. A CONTOUR map consists of closed curves known as contour lines which connect all points having the same numeric value or height.

A CONFORMANT map is best suited for data, either qualitative or quantitative, whose areal limits are of significance and whose representation as a continuous surface is inappropriate. Each data zone is enclosed by a boundary "conformant" to some predefined spatial unit. The entire spatial unit is given the same value, and symbolism is assigned according to its numeric class.

A PROXIMAL map is similar in appearance to a CONFORMANT map. However, the spatial units are defined by nearest neighbour methods from point information. Each character location on the output map is assigned the value of the data point nearest to it. Boundaries are assumed along the line where the values change and conformant mapping is applied.

Possible uses for contour maps include depicting average yearly rainfall over Australia, distribution of population density, condition of housing within an area, etc.

Possible uses for conformant maps include depicting land use within a district, average zone population within a region, etc.

A proximal map is useful for displaying qualitative data, particularly when the precise definition of zonal boundaries is not of paramount importance. (When precise zonal boundaries are important, the conformant type map is recommended).

5.1 Differences between SYMAP as described in the manual and the UQ version

- (a) Frequent reference is made to the use of tape n (n an integer) for input, output or temporary storage of data. The unit numbers used at UQ are different in order to take advantage of the default device assignments. Disk files are used in place of tape files, with the file written or read on unit nn being FORnn.DAT.

The equivalence is as follows:

<u>Symap tape number</u>	<u>UQ DISK file</u>
1	FOR10.DAT
2	FOR11.DAT
3	FOR12.DAT
4	FOR13.DAT
7	FOR14.DAT
8	FOR20.DAT
9	FOR21.DAT
10	FOR22.DAT
11	FOR23.DAT
12	FOR24.DAT

- (b) Data input is expected from a disk file SYMAP.DAT on Fortran Logical Unit 1. If this file is not present on the user's directory, FOROTS (the FORTRAN run-time system) will allow the user to change the file specifications for this data file. A warning message will be typed first, e.g.

```
%FRSOPN File was not found  
Unit=1 DSK:SYMAP.DAT[60,126]/ACCESS=SEQIN/MODE=ASCII  
Enter new file specs. END with an $ (ALT)  
*  
—
```

At this stage FOROTS is waiting for the user to specify the file to be used for data input. The response should be a standard PDP-10 file specification, e.g. DATA.DAT[160,1004] if the data file is DATA.DAT on directory [160,1004] or TTY: if the data is to be read from the user's terminal.

- (c) Main program output is to the line printer on Fortran Logical Unit 3. This output may be printed on the user's terminal by issuing the monitor command "ASSIGN TTY:3" before running the program. However, this practice is not recommended since any reasonable map is likely to require over 40 minutes

printing time on a 10 char/sec terminal driven at full speed.

- (d) The program now regards 6 lines per vertical inch as being the standard line printer spacing. Should an 8 line per inch printer become available, user's may override this default by using F-MAP elective 15.
- (e) When printing maps, SYMAP uses a '*' Fortran carriage control character. This causes maps to be written on every line of the page. (The normal practice is to print only on the middle 60 lines of the page).
- (f) F-MAP elective 21 stores the map in file FOR20.DAT. This file may be subsequently used by the SYMVU program (soon to be released).
- (g) The program may be run by the command .RUN PLO:SYMAP and requires at least 26K + 22K (48K) core for successful execution. The exact value required depends on the options used. Thus SYMAP at present can not be run during prime shift. Batch jobs running SYMAP should use either the "/CORE:value" or "/PRIO:value" switch on the \$JOB card or the SUBMIT command to ensure that the batch system will not schedule the job during prime shift. In tests done at the Centre, page-size maps using simple options have cost less than \$1 each on job priority 2. Sample deck setup:

```
$JOB [pj,pg] /PRIO:2/COST:$5/CORE:50K
$DECK SYMAP.DAT
      : symap commands and data
      .
$EOD
.RUN PLO:SYMAP
%FIN:: .DELETE FOR?? .DAT
$EOJ
```

- (h) SYMAP will generate scratch files for temporary data storage. The files generated will depend on the options used. They may be deleted easily by the command .DELETE FOR?? .DAT.

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