# CERN Computer Newsletter

**September No. 137 1978**

<table>
<thead>
<tr>
<th>Chapter</th>
<th>page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. GENERAL NEWS ITEMS</strong></td>
<td>2</td>
</tr>
<tr>
<td>WINTER TIME</td>
<td>2</td>
</tr>
<tr>
<td>NOTICE TO MAGNETIC TAPE USERS IN EP DIVISION</td>
<td>2</td>
</tr>
<tr>
<td>SUMMER STUDENT REGISTRATION</td>
<td>2</td>
</tr>
<tr>
<td>NEW CDC VERSION OF THE SCAN UTILITY</td>
<td>3</td>
</tr>
<tr>
<td>7500 MERGE UTILITY</td>
<td>3</td>
</tr>
<tr>
<td>CHANGES TO IBM AND CDC 6000 MICROFICHE PROCESSING</td>
<td>3</td>
</tr>
<tr>
<td>ATTENTION - CHANGES FOR IRM DATASETS</td>
<td>4</td>
</tr>
<tr>
<td>ALLOCATION OF NEW DATASETS ON THE IBM</td>
<td>4</td>
</tr>
<tr>
<td>INTRODUCTION OF IBM 3850 (MASS STORAGE SYSTEM) SERVICE</td>
<td>5</td>
</tr>
<tr>
<td>NEW BCPL COMPILER ON THE IBM 370/168</td>
<td>5</td>
</tr>
<tr>
<td>PL-11 ON THE IBM 370/168</td>
<td>6</td>
</tr>
<tr>
<td>TELEPHONE LINE DIAL-UP CONNECTIONS TO CENTRAL COMPUTERS</td>
<td>7</td>
</tr>
<tr>
<td>ERRORS OF OMISSION AND COMMISSION</td>
<td>8</td>
</tr>
<tr>
<td>CLOSING DATE- NEXT NEWSLETTER</td>
<td>8</td>
</tr>
<tr>
<td><strong>II. COMPUTER CENTRE PERFORMANCE</strong></td>
<td>9</td>
</tr>
<tr>
<td>CDC/IBM TIMETABLES</td>
<td>9</td>
</tr>
<tr>
<td>CDC/IBM PERFORMANCE GRAPHS</td>
<td>10</td>
</tr>
<tr>
<td>IRM SYSTEM</td>
<td>11</td>
</tr>
<tr>
<td>CDC SYSTEM</td>
<td>11</td>
</tr>
<tr>
<td><strong>III. WRITEUPS</strong></td>
<td>12</td>
</tr>
<tr>
<td>INDEX TO OLD COMPUTER NEWSLETTER ARTICLES</td>
<td>15</td>
</tr>
<tr>
<td><strong>IV. IF YOU NEED HELP</strong></td>
<td>16</td>
</tr>
<tr>
<td><strong>V. VOX POPULI</strong></td>
<td>17</td>
</tr>
</tbody>
</table>
Chapter I

GENERAL NEWS ITEMS

1.1 WINTER TIME

With the re-introduction of winter working hours the following time-table changes will take place:

P.E.O opening hours

9 - 12.30     14 - 17.30

IBM Service

The IBM/WYLBUR service will start at 8.30am, Mon - Fri. (See section 2.4 for full details).

CDC Service

The development session on Monday morning has been reduced. In future all CDC machines will be up by 8.30am. (See section 2.4 for full details).

1.2 NOTICE TO MAGNETIC TAPE USERS IN EP DIVISION

Following long discussion between the Computer Centre, CUAC, G. Kellner and F. Bernasconi, EP division, a decision has been taken to archive all EP tapes with numbers between 0 and 60,000 which have not been used on the central computers for > 2 years. This action will be taken on 1st October 78 and notification will be sent individually to all persons involved, with a list of the tapes to be archived. This measure will enable allocation of new tapes to experiments to be carried out without difficulty. These unused tapes will be archived in the Computer Centre and may be retrieved at relatively short notice via the computer reception if they are subsequently required to be re-used on the central machines.

If you have any comments on these arrangements, or if they cause you serious problems, please contact J-C Juvet or J. Ferguson (tel. 4935 or 8-637).

John Ferguson

1.3 SUMMER STUDENT REGISTRATION

Supervisors who have had summer students this year are reminded that all summer student registrations will be automatically removed on October 31st unless the Accounting Office (J. Igo-Kemenes tel. 5029, or A. Koppanyi tel. 4933) are requested to the contrary. IBM users are especially warned that data sets belonging to summer students will thus become illegal and be purged.

Judith Richards, Attila Koppanyi
1.4 NEW CDC VERSION OF THE SCAN UTILITY

A new version of SCAN was introduced recently on the CDC 6500 and 6400 mainframes. In addition to some minor changes and improvements, mostly due to user suggestions, the main changes are the addition of two new commands LIST and X.

The command LIST is provided for searching for character strings in the SCAN-file and the X command is used to step through the pages on which the string in the last LIST occurred. The syntax of the commands are as follows -

```
LIST,<pagerange>,/string/,(<columnrange>) where

<pagerange>=page1,page2
or ALL (or A) - default
or page1-LAST or LAST
or page1,L or L
```

```
<columnrange>=col1,col2
or col1 (default = as set by window or the whole line if none)
```

Only commas (,) and blanks are accepted as delimiters between the different fields in the command, all other non-alphanumeric characters are accepted as string-delimiters. The fields in the command (if present) must be in the indicated order. The LIST command will list all lines having a match. The line is listed with the page number in front of it.

```
X<sign>N where

<sign> = + or - (default = +)
N = number (default = 1)
```

Examples:-

```
LIST,/THISSTRINGCANBEVERYLONGindeed/
X (will give first page with the above string)
X-1 (will give first page again)
X4 (will skip 4 pages with matches and give the fifth)
LIST,3,17,/abc/,(1,3) (will look for ABC on pages 3 to 17 in columns 1 to 3
```

```
WINDOW,1,20 (or W,1,20)
L,A/ASTRING/ (will look for the string in columns 1 to 20 on all pages)
```

Hans Jordaandstad

1.5 7600 MERGE UTILITY

A new version of the 7600 MERGE utility was introduced on September 14th. With this version it is no longer necessary to have the 7600LIBRARY declared as a library. It is sufficient to say:

```
FIND,MERGE,7600MERGE,ID=PROGLIB
MERGE,out,in1,in2,...
```

Judith Richards

1.6 CHANGES TO IBM AND CDC 6000 MICROFICHE PROCESSING

"DEFER" will become the default option of the QMAC60, ID=PUBLIC microfiche procedure used on the 6000's. This should not have any effect on users, except
that their 'turnaround' should improve. They will no longer need to specify 'NT1' on their batch job card; INTERCOM terminal users will not need to specify 'DEFER'. This change will occur on Monday 4th October.

A new, faster version of the IBM microfiche program is available for test in SYS77.PROCLIB. Several errors in the default program have been corrected, but if you try it and find some more, please let me know.

Charles Curran

1.7 ATTENTION - CHANGES FOR IBM DATASETS

A number of changes in the organisation and control of users' datasets on the IBM will occur during the coming weeks. These changes should:

a) Alleviate the current disk and VTOC full problems which cause jobs to abort.

b) Clarify the present confused situation vis-a-vis budgets and usage, and improve the facilities for group representatives and users to audit their space.

c) Introduce automatic facilities for archive migration/recall of unused datasets and user facilities for backup/restore of specific datasets. Both of these new features use the Hierarchical Storage Manager (HSM) and the 3850 Mass Storage System.

The above improvements cannot be fully effective without some changes by users, especially when allocating space for new datasets (see next article in this Newsletter), and some education on how to exploit the new facilities. We shall publicise these changes as they take place in WLYBUR news and the Computer Newsletter. In addition a User Meeting will be held around the middle of October to which representatives for all groups using the IBM will be invited. For the user's convenience a major part of the responsibility for the control of a group's disc space is left within the group in the hands of the group representative (otherwise known as the WLYBUR "administrator"). Hence it is important that your group representative knows how the facilities work and how they may be exploited.

Chris Jones

1.8 ALLOCATION OF NEW DATASETS ON THE IBM

It is now no longer necessary to specify a volume when assigning a new dataset. All the CRNnnn discs are now treated as a single group and if a specific volume is not given in the JCL a new dataset will be put onto the least active disc, thus avoiding problems with a specific disc becoming full which is happening more and more frequently. Users are encouraged to remove from their JCL all occurrences of:

\begin{align*}
\text{VOL=SER=CRNn} & \quad \text{or} \\
\text{VOL=REF=gg} &
\end{align*}

To create a new dataset, the JCL would for example be:

```plaintext
/G.FT15F001 DD DSN=gg.uuu.mydata,UNIT=SYSDA,DISP=(NEW,CATLG,DELETE),
  DCB=(RECFM=VSB,BLKSIZE=6000),SPACE=(6000,(100,20),RLSE)
```

- the dataset will be put onto the least active disc.

To read the dataset back in another job, the JCL would simply be:

```plaintext
/G.FT15001 DD DSN=gg.uuu.mydata,DISP=SHR
```

- the dataset will be found by consulting the catalog.
The effect of this will be to spread a user's datasets over several discs. To find out what datasets you have got via WILBUR you should use the command:

SHOW CATALOG (rather than SHOW DSN)

If you need more information about a particular dataset then you may either -

EXEC FROM #AUDIT PUB

or you may

SHOW DSN LIKE name <ON CRNnnn>

The disc to specify is given by SHOW CAT but need not be given if 'name' is the full last qualifiers of the name rather than a subset.

Judith Richards

1.9 INTRODUCTION OF IBM 3850 (MASS STORAGE SYSTEM) SERVICE

The IBM Mass Storage System is now available for general use. Mass Storage volumes (logically equivalent to a 3330-1 disk pack of 100 Mega-bytes capacity) may be allocated to IBM user groups having a valid application on request to myself or a member of the PEO. The PEO is available to advise users on the validity of their application to the MSS. Some suggestions are to maintain copies of all or parts of a raw data tape or DST file that will be heavily used for a short period or to accumulate short DST files onto an MSS volume for later copying onto magnetic tape in a single job.

A first iteration of the MSS User Guide is available via:

EXEC FROM #WRITEUP PUB

and ask for member name MSSUSER. Any corrections or comments on the usefulness of this guide will be appreciated.

Harry Renshall

1.10 NEW BCPL COMPILER ON THE IBM 370/168

A new version of the BCPL compiler has been installed on the IBM 370/168, together with new versions of the procedures BCPLB, BCPLBG, BCPLBL and BCPLBLG. The procedures are now in the SYST77 procedure library, and may be accessed by means of the JES 2 control statement:

/#JOBPARM PROCLIB=PROC77

in the job deck. They will move to the default (SYS3) procedure library during October.

The new compiler allows code generation for a variety of target computers, contains some other new features from the CII 10070 BCPL compiler, and corrects some errors (notably in character codes).

The form of the compiler's parameter string has been changed. The new form is:

a(s)b(t) ...

where a, b, ... are letters, and s, t, ... are alphanumeric strings of the form:

xy ...
where each of $x$, $y$, ... is either a single letter or a letter followed by an unsigned decimal integer. The letters $a$, $b$, ... select components of the BCPL compiler:

- **S**: Phase 1: syntax analysis and translation into intermediate object code, **OCODE**.
- **I**: Code generation for IBM 370, from **OCODE**.

Other letters will select code generators for other target computers.

For phase 1 of compilation, the parameters $x$, $y$, ... may be:

- **A**: Translate characters into ASCII (needed when compiling code for other computers).
- **G**: List GET files, provided S is selected as well.
- **O**: List intermediate object code (**OCODE**).
- **Rn**: Stop compilation after $n$ errors (default $r=30$).
- **S**: List source code.
- **Vn**: Set run time save space size = $n$ (default $n=3$; $n=2$ if $V$ or $V0$ is specified; $n=1$ is needed when compiling code for other computers).
- **Wn**: Consider only the first $n$ characters of each source code line (default $n=133$; $n=72$ if $W$ or $W0$ is specified).

Here and below $n$ stands for an unsigned decimal integer.

For IBM 370 code generation, the parameters $x$, $y$, ... may be:

- **K**: Generate code to count routine calls.
- **L**: List object code. If a data set with DD name **B.CODE** is defined, the object code will be written to it (instead of **B.SYSPRINT**).
- **N**: Do not generate object module.
- **P**: Generate code to count frequency of execution of code sequences (including routine calls).
- **Rn**: Stop code generation after $n$ errors (default $n=30$).
- **S**: Generate code to check for stack overflow.

The following example shows a job to compile and execute a BCPL program using the catalogued procedure **BCPLBG**. The parameter string calls for syntax analysis with listing of source code, followed by IBM 370 code generation with run time call counting.

```
// JOB
/*JOBPARM PROCLIB=PROC77
 // EXEC BCPLBG,BPRM='S(S)I(K)'
 //B.SYSIN DD *
----- Source code of BCPL program -----
/*
//G.SYSIN DD *
----- Data for BCPL program -----
/*
```

Julian Blake

1.11 PL-11 ON THE IBM 370/168

The PL-11 compiler is now available for use on the IBM 370/168. PL-11 is a high level assembler which may replace MACRO-11 on the PDP-11 for most applications. The compiler may be invoked by using a catalogued procedure as follows:

```
// JOB
// EXEC PL11,PBIN=filename,PVOL=vol
//P.SYSIN DD * or DSN=sourcefile
```
Here 'filename' and 'vol' specify the name and volume for the object file, and sourcefile is the name of the file containing the PL-11 source, which must be in card and not WYLBUR format. The object file may be transferred to a target PDP-11 for subsequent task building using the CERNET file transfer utility XFN. The documentation for PL-11 consists of CERN Yellow Report 74-24, as modified by DD-Report DD/77/22.

Examples:

1) Compiling from the input stream and producing no object code:

   // JOB
   // EXEC PL11
   //P.SYSIN DD *
   <PL-11 source>
   */

2) Compiling from the card image file gg.uuu.fname, with the object code being put onto gg.uuu.objname on CRNnnn:

   // JOB
   // EXEC PL11,PRIN='gg.uuu.objname',PVOL=CRNnnn
   //P.SYSIN DD DSN=gg.uuu.fname,DISP=SHR

3) As 2), but with the source file being in WYLBUR EDIT format:

   // JOB
   //WUN EXEC WUNPRESS,WPRM=INT,WPRT='DUMMY',
   WDSN='gg.uuu.frame'
   //PL11 EXEC PL11,PRIN='gg.uuu.objname',PVOL=CRNnnn
   //P.SYSIN DD DSN=&&CARDS,DISP=(OLD,DELETE)

4) An example using an INCLUDE file in WYLBUR EDIT format:

   // JOB
   //WUN EXEC WUNPRESS,WPRM=INT,WPRT='DUMMY',
   WDSN=filename
   //PL11 EXEC PL11
   //P.PT12FO01 DD DSN=&&CARDS,DISP=(OLD,DELETE)
   //P.SYSIN DD *
   <PL11 SOURCE>
   [INCLUDE 12
   <more PL11 SOURCE>
   */

In this example, "filename" is that of the INCLUDE file, and the FORTRAN logical unit used is 12. If the INCLUDE file is in CARD format, then the WUNPRESS step is not necessary, and the DD card for P.PT12FO01 is changed appropriately.

Tim Streeter

1.12 TELEPHONE LINE DIAL-UP CONNECTIONS TO CENTRAL COMPUTERS

The keyboard class selection facility (KCS) available to access the CDC system from the dial-up terminals has recently been modified and was extended to the IBM system on Monday 11th September 1978. Please refer to the article 1.9 of CNL 133 for general explanation of this facility.

The modification concerns the connect procedure which is now the following:

1. Switch terminal power on and on-line
2. Then dial one of the tel. numbers (5299, 5399, 5499, 5599)
3. When you receive the "carrier tone" switch your MODEM to line
4. Then press CARRIAGE RETURN 1 to 3 times
5. INDEX system will print an *
6. Then type the class you wish and carriage return
   e.g. 11(cr) for INTERCOM auto-baud
        02(cr) for IBM-WYLBUR (300 bauds only !!!)

7. The INDEX system will reply: SERVICE 11 (or 02) START
   indicating that your desired connection is made
8. From now follow the rules that apply to the class you have chosen.
9. Unsuccessful connects are indicated in 2 ways:
   SERVICE 11 (or 02) NOT AVAILABLE
       (if that class is occupied on this INDEX)
   SERVICE AB?
       (if you have typed illegal / too many digits for your class)

Lucien Gourdiole

1.13 ERRORS OF OMISSION AND COMMISSION

   Apologies for once again splitting your 'Vox Populi' form across two pages. However, this did provide you with the opportunity to send two... An error in the IBM timetable has been noticed and corrected. The timetables have also been amended to show the change in CERN's official working hours from October 4th.

Charles Curran

1.14 CLOSING DATE—NEXT NEWSLETTER

   The closing date for the next Newsletter is 15 October. Articles already in machine readable form (on CDC or IBM, at 80 chars/line, 10/inch and 72 lines/page, 6/inch— we use Pica-10 type) are far more welcome than those which have to be typed! The Computer Newsletter is produced monthly by the User Support Group in the Computer Centre, with Charles Curran as Editor together with Chris Jones and Judith Richards as sub-Editors.

   Distribution of the Newsletter

   The Newsletter is distributed inside CERN to all registered users of the central computer systems, and to any person requesting a subscription from—

   The Computer Science Library
   CERN 1211 Geneva 23
   Switzerland
2.1 CDC/IBM TIMETABLES

**CDC 7600 / MFA 6400**

- **Mon**: 02 04 06 08 10 12 14 16 18 20 22 24 hours
  - 6.00-8.30
- **Tue**: 19 00-01 00
- **Wed**: 21 00-01 00
- **Thu**: 02 04 06 08 10 12 14 16 18 20 22 24 hours
- **Fri**: 6.00-8.30
- **Sat**: 6.30-12.30
- **Sun**: 6.45-8.30

**CDC 6500 / MFB**

- **Mon**: 6.00-8.30
- **Tue**: 6.30-8.30
- **Wed**: "
- **Thu**: "
- **Fri**: "
- **Sat**: 6.30-12.30
- **Sun**: 6.30-12.30

**IBM 370 / Wylbur**

- **Mon**: 6.45-8.30
- **Tue**: 6.45-8.30
  - 19.45-00.15
- **Wed**: 6.45-8.30
  - 19.45-00.15
- **Thu**: 6.45-8.30
  - 19.45-00.15
- **Fri**: 6.45-10.15
- **Sat**: 6.45-10.15
- **Sun**: 6.45-10.15
2.2 CDC/IBM PERFORMANCE GRAPHS

IBM CPU Usage

CDC CPU Usage

IBM Jobs/tapes

CDC Jobs/tapes
The period covered in this article is 14 August 1978 to 18 September 1978. The graphs present the last 100 weeks of accounting data, prepared by J-L. Pennaud and output using the HLOT package of Howard Watkins.

2.3 IBM SYSTEM

The availability and stability of the system remained satisfactory at 98.4% and 60.9hrs MTBF respectively. Although the number of jobs decreased to an average per week of 7872, user CPU processed increased to 104hrs per week.

The 1403 user printer was replaced on 31/08/78.

2.4 CDC SYSTEM

Performance of the 7600/6400 system was poor in this period primarily due to 7600 hardware problems which required European Technical Support before they were cured.

The workload remained at a relatively high level with 118.6 user CPU hrs average and 13,497 jobs run each week on the 7600 on average. A new CPU record was created in the week of 28/08 with 135.6hrs giving 86.9% CPU utilisation over that entire week.

The 6500 performance continued to be satisfactory throughout this period.

Key to Figures-

<table>
<thead>
<tr>
<th>Scheduled CPU time</th>
<th>solid line</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achieved CPU time</td>
<td>dotted line</td>
</tr>
<tr>
<td>User CPU time</td>
<td>dot/dash line</td>
</tr>
<tr>
<td>Unavailable CPU time</td>
<td>lower solid line</td>
</tr>
<tr>
<td>Jobs run</td>
<td>solid line</td>
</tr>
<tr>
<td>Tapes stage(7600)/mounted(370)</td>
<td>dot/dash line</td>
</tr>
</tbody>
</table>

John Ferguson
Chapter III

WRITEUPS

There are now many write-ups and User Guides available from the self-service area of the Computer Science Library (building 513, 1-024) or directly from the IBM or CDC 6000's as indicated below. Several of these documents may be written to magnetic tape, to be taken elsewhere. The tape format is EBCDIC code, RECFM=(FB,RECL=133,BLKSIZE=1955), and assumed labelled (unless you give 'UL'). Those which cannot be output on tape at present are marked '*'.

EXEC FROM #WRITEUP PUB  (IBM, then follow the prompts)

ETL,100  (CDC 6000's)
ATTACH,WRITEUP
WRITEUP, key, NAME=abcdefgh[,COPIES=n][,FICHE][,VSN=vsn,UL/SL]

The US numbering series is a coordination effort of the US group, which aims to gather useful user-documentation in one series. It is in no way intended to steal credit from the true authors of the programs or documentation, who are frequently in groups other than US.

<table>
<thead>
<tr>
<th>DD/US/n</th>
<th>Title</th>
<th>IBM key</th>
<th>CDC key</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CDC 7600 User's Guide</td>
<td>CDC</td>
<td>CDC</td>
</tr>
<tr>
<td>2</td>
<td>INTERCOM Pocket Summary Card</td>
<td>INTERCOM</td>
<td>INTERCOM</td>
</tr>
<tr>
<td>3</td>
<td>A Comparison of CDC and IBM FORTRAN</td>
<td>FORTRAN</td>
<td>FORTRAN</td>
</tr>
<tr>
<td>4</td>
<td>IBM 370 User's Guide</td>
<td>IBM</td>
<td>IBM</td>
</tr>
<tr>
<td>5</td>
<td>AR File Archiving Program</td>
<td>AR</td>
<td>AR</td>
</tr>
<tr>
<td>6</td>
<td>Microfiche User's Guide</td>
<td>QUANTOR</td>
<td>QUANTOR</td>
</tr>
<tr>
<td>7</td>
<td>Control Card Macros on the CDC</td>
<td>MACRO</td>
<td>MACRO</td>
</tr>
<tr>
<td>8</td>
<td>GD3 User's Guide- CDC</td>
<td>GD3</td>
<td>GD3</td>
</tr>
<tr>
<td>9</td>
<td>Paper Tape User's Guide</td>
<td>PTAPE</td>
<td>PTAPE</td>
</tr>
<tr>
<td>10</td>
<td>Essential SIGMA</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>11</td>
<td>Contents of CERN Library</td>
<td>LIBRARY</td>
<td>LIBRARY</td>
</tr>
<tr>
<td>12</td>
<td>PEJOB Asci Printing Guide</td>
<td>PEJOB</td>
<td>PEJOB</td>
</tr>
<tr>
<td>13</td>
<td>FLOP User Guide (FORTRAN Parser)</td>
<td>FLOP</td>
<td>FLOP</td>
</tr>
<tr>
<td>14</td>
<td>SUE, Single User Editor</td>
<td>*SUE</td>
<td>*SUE</td>
</tr>
<tr>
<td>15</td>
<td>HPLOT Advanced User Guide</td>
<td>HPLOTA</td>
<td>HPLOTA</td>
</tr>
<tr>
<td>16</td>
<td>HPLOT Installation Guide</td>
<td>HPLOTTI</td>
<td>HPLOTTI</td>
</tr>
<tr>
<td>17</td>
<td>CASTOR, Automated Abstracts</td>
<td>CASTOR</td>
<td>CASTOR</td>
</tr>
<tr>
<td>18</td>
<td>MORTAN User Guide</td>
<td>MORTAN</td>
<td>MORTAN</td>
</tr>
<tr>
<td>19</td>
<td>PASCAL User Guide</td>
<td>*PASCAL</td>
<td>*PASCAL</td>
</tr>
<tr>
<td>20</td>
<td>WYLBUR Reference Manual</td>
<td>WYLBUR</td>
<td>WYLBUR</td>
</tr>
<tr>
<td>21</td>
<td>On-line Support for Labelled Tapes</td>
<td>LABEL</td>
<td>LABEL</td>
</tr>
<tr>
<td>22</td>
<td>BCPL on the IBM</td>
<td>BCPL</td>
<td>-</td>
</tr>
<tr>
<td>23</td>
<td>EVENT for CDC</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>24</td>
<td>WYLBUR Tutorial</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>25</td>
<td>WYLBUR Command Summary Card</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>26</td>
<td>NOSED Alternative Editor under INTERCOM</td>
<td>NOSED</td>
<td>NOSED</td>
</tr>
<tr>
<td>27</td>
<td>GD3 User's Guide- IBM</td>
<td>GD3</td>
<td>GD3IBM</td>
</tr>
<tr>
<td>28</td>
<td>STICKER Label and Address Printing</td>
<td>STICKER</td>
<td>STICKER</td>
</tr>
<tr>
<td>29</td>
<td>Listing of SYS3.PROCLIB</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>30</td>
<td>Introduction to IBM JCL</td>
<td>JCLINTRO</td>
<td>-</td>
</tr>
<tr>
<td>31</td>
<td>WYLBUR EXEC File Tutorial</td>
<td>EXECFILE</td>
<td>-</td>
</tr>
<tr>
<td>32</td>
<td>FELIX User Guide</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>33</td>
<td>CERNET User Guide</td>
<td>CERNET</td>
<td>-</td>
</tr>
<tr>
<td>34</td>
<td>HEPPI User Guide</td>
<td>-</td>
<td>HEPPI</td>
</tr>
</tbody>
</table>
Also supported are the following Program Library long write-ups:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>L220</td>
<td>BCPL Long Writeup</td>
</tr>
<tr>
<td>Y250</td>
<td>HBOOK Long Writeup</td>
</tr>
<tr>
<td>Y251</td>
<td>HPLOT Long Writeup</td>
</tr>
<tr>
<td>Q210</td>
<td>ZBOOK Long Writeup</td>
</tr>
</tbody>
</table>

There are several other items of useful documentation available from WRITEUP on the IBM. While some will eventually be documented elsewhere, or even become DD/US items, we take this opportunity to draw your attention to them.

- **ASSEMBLR**: A guide to writing IBM Assembler routines for FORTRAN programmers.
- **BANNER**: A procedure to print text in block characters similar to those used on the banner page of your outputs.
- **BINLIB**: A short guide to use of IBM binary libraries.
- **COMPARE**: A program to compare two text files, allowing the two files to be of different length.
- **COPYR**: A procedure to copy records from a tape or disk dataset.
- **DEMON**: An interactive FORTRAN de-bugging package from SLAC.
- **FETE**: FORTRAN execution time estimator (a simple sort of SPY).
- **FI0999**: A FORTRAN READ/WRITE simulation (similar to ENCODE/DECODE).
- **GOPARM**: FORTRAN callable subroutine; returns the G-step parameter string (Program Library 2262).
- **NAMEZB**: Subroutine to print eyeball-sized characters. Not the same calling sequence as on CDC (Program Library J402).
- **OPEN**: Flexible tape reading routine.
- **PASSWORD**: Description of dataset protection facilities using passwords. Passwords should not be used unless they are really needed.
- **PASCAL**: Reference manual for the PASCAL compiler on the IBM.
- **REMARK**: Subroutine to write a message in the JES Job Log.
- **SCRIPT**: Introduction to the University of Waterloo powerful text formatting program. See also the writeup SYSPUB.
- **SERLAB**: FORTRAN callable subprogram to change tapes and/or files, label type and dataset name during execution of a program without having to supply a DD statement for each file of each tape used.
- **SFORT**: A special version of the FORTRAN compiler that prints out all program variables and their values if a program terminates abnormally (similar to, but not as powerful as CDC MANTRAP).
- **SIGN**: A program to print signs in upper and lower case characters, 130 characters high along the length of the paper.
SYSPUB  Simplified interface to the University of Waterloo's "SCRIPT" text formatting program. You will also probably need the writeup SCRIPT.

TAPECOPY  A program and EXEC file to copy labelled and unlabelled tapes, allowing a change of label type and initial positioning of both input and output tapes.

TRANSFER  Introduction to using CERNET to transfer source, PAM and documentation files produced by BARBASCII (CDC 12-bit) to the IBM and source and PAM files to the CDC.

UPDTX  User manual for IEBUPDTEX, a more powerful version of the IBM program IEBUPDTE.

WLIBLIST  A procedure to list a WYLBUR file, member of a WYLBUR library or a complete WYLBUR library.

WPRESS  A procedure to convert a card image file into WYLBUR compressed format.

WUNPRESS  A procedure to convert WYLBUR compressed format into card image format.

WYLBUR  A severe truncation of the WYLBUR Reference Manual. This just contains a List of contents and the Index, together with the instructions for obtaining a copy of the manual if you really want one!

XCPOUT  FORTRAN callable routine to write records with RECFM=U to magnetic tape.

XPACKAGE  IBM version of the CERN Program Library package ZZ200, but note that the IXLONG function of the IBM version returns the record length in bytes, not words.

Charles Curran, Judith Richards
3.1 **INDEX TO OLD COMPUTER NEWSLETTER ARTICLES**

This selective index to articles which have appeared in old Newsletters is meant to be used as a back reference to material which is not covered elsewhere. Thus, an article on a subject which has since been documented elsewhere will NOT appear in this index. Back issues of the Newsletter can be obtained from the self-service area of the Computer Science Library, building 513, 1-024.

<table>
<thead>
<tr>
<th>Title</th>
<th>Authors</th>
<th>CNL</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALGOL and SYMPL, 7600</td>
<td>W. Simon</td>
<td>120</td>
</tr>
<tr>
<td>AUDITIP, 7600 file audit</td>
<td>L. Robertson</td>
<td>116</td>
</tr>
<tr>
<td>CCL (Cyber Control Language) on 7600</td>
<td>C. Letertre</td>
<td>131</td>
</tr>
<tr>
<td>CERNLIB, 7600 libraries</td>
<td>C. Curran</td>
<td>122</td>
</tr>
<tr>
<td>ECAP/SCEPTRE circuit analysis</td>
<td>J. Howie</td>
<td>98/114/115</td>
</tr>
<tr>
<td>New FORTRAN and MANTRAP on 6000</td>
<td>W. Simon</td>
<td>132</td>
</tr>
<tr>
<td>GETFILE/RETFILE, SAVELIB/RESLIB</td>
<td>C. Letertre</td>
<td>124</td>
</tr>
<tr>
<td>How to Eke Out a Computer Budget (CDC)</td>
<td>M. Metcalf</td>
<td>130</td>
</tr>
<tr>
<td>IBMIN/IBMOUT - IBM VBS tapes on CDC</td>
<td>C. Curran</td>
<td>120</td>
</tr>
<tr>
<td>INDENT-improve layout of FORTRAN code</td>
<td>M. Black, C. Curran</td>
<td>132</td>
</tr>
<tr>
<td>MANTRAP with previous compilations</td>
<td>H. Watkins</td>
<td>120</td>
</tr>
<tr>
<td>NO-DUMP (or ND) files on MFA</td>
<td>J. Richards</td>
<td>130</td>
</tr>
<tr>
<td>PATCHY 4- Automatic conversion</td>
<td>H. Grote</td>
<td>124</td>
</tr>
<tr>
<td>PLOT10 output on Caloomp plotters</td>
<td>H. Rafelski</td>
<td>134</td>
</tr>
<tr>
<td>Programming Conventions</td>
<td>M. Metcalf</td>
<td>106/107/112</td>
</tr>
<tr>
<td>Divisional Representatives</td>
<td></td>
<td>128/134</td>
</tr>
</tbody>
</table>

Notes that WRITEUP and EXEC FROM WRITEUP PUB, as described elsewhere, provide modernised and more accurate descriptions of many of the items previously indexed here. Other 'old' articles are now described in the 7600 User's Guide, the INTERCOM Pocket Card, and so on.

Charles Curran
Chapter IV

IF YOU NEED HELP....

Most requests for programming help are handled by the:

PROGRAM ENQUIRY OFFICE
0900-1230 513/1-014 8-935 4952
1400-1730 or 2377

Questions concerning the execution of jobs are answered by the

COMMUNICATION OPERATOR
513/R 4925, 4927

Most special requests, for priority or *P files are handled by the

COMPUTER COORDINATOR
Mike Metcalf 8-942

The following list may be useful for people with special requests

PROGRAM LIBRARY
Help with library programs
Fred James 513/1-017 4959
Torbjorn Lindelof "

Distributing library material
Dominique Dupraz 513/1-015 4951
Gudrun Berger "

Algorithms/HYDRA programs
K. Gieselmann 27/2-020 4861

DOCUMENTATION OFFICE
Felicitas Morice 513/1-011 2371
Jean-Louis Penaud "

MAGNETIC TAPES
Software
Judith Richards 513/1-005 4957

Operations
J.C. Juvet 513/R-037 4935

Allocation/Cleaning
Tape Reception 513/R 4939

COMPUTER SERVICE PROBLEMS
Operations - all aspects
John Ferguson 513/R-017 8-637
Jean-Claude Juvet " 8-364

" - IBM service
Dave Underhill 513/R-035 4920

" - CDC service
Martin Sheehan 513/R-034 3348

Remote services
Chris Jones 513/1-007 8-947

User Support
Tor Bloch 31/2-028 4949

Software Systems
Comm. Operator 513/R 4925
Comm. Operator 513/R 4925

RIOS's
Mike Gerard 31/3-012 8-951

Terminals
Ian McLaren 513/1-009 5010
Ian McLaren 513/1-009 5010

CERNET
Jean-Claude Juvet 513/R-037 4935

FOCUS/FOCUS Data links

OTHER SERVICES
GD3 Graphics
Michael Howie 31/2-007 2993

Computer Science Library
Felicitas Morice 513/1-011 2379

Math Advisory Service
Benno Schorr 31/3-024 4120

INFOL Databases
Jean-Philippe Baud 31/3-019 3347

Terminals Service
Carlo Vandoni 31/2-003 8-952

FELIX
Florence Ranjard 2/1-027 8-632

REGISTRATION
New Users
Divl. Rep- CNL 128
Judith Igo-Kemenes 513/1-003 5029

INTERCOM Users
Attila Koppanyi 513/1-002 4933
Chapter V

VOX POPULI

What is Vox Populi for?

All complaints, suggestions or problems sent in to the PEO on the form which is the last page of this Newsletter will be answered as quickly as possible (if not obscene or just a personal attack!) in these Vox Populi pages. Please note that your name will not be printed – only that of the person replying. You can send the form anonymously if you wish, but then you have to wait until the next Newsletter appears to receive an answer.

Program Enquiry Office

Some people get up early in the morning, especially those working on French summer time. It is most frustrating to find that the IBM via WYLBUR is not available officially before 08.00hrs Suisse and often is not available before 08.30hrs. For me, the period between 07.30hrs and 08.30hrs is one of the few periods when I have time for quiet reflection, and often wish to work with WYLBUR. Why can’t the systems development people get up early too and get off the machine by 07.30hrs in summer and 08.00hrs in winter?

For the first of the points that you make, I am unable to accept your statement that the service is often not available before 08.30hrs. Our records show that, for example, for the week days of the last eight weeks, there has been no interruption of the service during the period you mention for 38% of the mornings and on average the service is restarted before 08.15hrs. On only one morning was the service resumed later than 08.25hrs. I should perhaps explain that our schedule is that the programmers aim to hand the system over to the operators by 08.00hrs, so that with the time to start up, it should be available between 08.10hrs and 08.15hrs.

Your second point is more delicate. By far the large majority of the programmers you refer to live in Switzerland, so that you are asking them to get up between 05.00hrs and 05.30hrs in order that you can use WYLBUR for half an hour before the official CERN starting time – a time that at present is convenient to you because you live on French summer time. This seems to me unreasonable, especially as we cannot give them adequate compensation. In general users of the Centre prefer, if they have to work outside normal hours, to do so in the early evening. You are of course welcome to use the machine before 07.00hrs – it is really quiet then!

David Lord

There seems to be a difference between EDITOR and SUE for files which end with the last data card, i.e. are not terminated by *EOR or *EOF cards or similar objects: EDITOR created files seem to contain junk which causes programs such as PRPLOT to blow up. SUE created files do not cause this problem.

Questions:
1) In your opinion, which of the editors is behaving correctly? Or, are both behaving correctly?

2) In the case that there is a faulty editor, is it going to be corrected?

1) Normally one does not expect an editor to make any changes to the users edit file in which case one would say that EDITOR behaves correctly. On the other hand most users want their file to be terminated by an EOR/EOF in which case one could say that SUE is behaving correctly.

2) There are no plans to modify either EDITOR or SUE.

Peter Hartel

In PATCHY, if you wish to make an alteration to a particular card it is necessary to replace the whole card. We find this very tedious if the coding on the card is long and only a minor alteration is required. Would it not be a good idea to provide an action card which allows the replacement of one character string by another? Then, for example, the card:

A LONG AND BORING STATEMENT

could be modified by, say:

+MODIFY,pname,dname,one,um,'L'VERY L'

to give:

A VERY LONG AND BORING STATEMENT

Clearly this would be useful, and it could be done. There are problems, though. First a problem of philosophy: does one really want to integrate a text-editor into PATCHY? If so, how much? Remember that PATCHY should be small and fast.

Second, the practical problem: PATCHY handles groups of cards, not individual cards, and it never looks at the contents of the cards. Thus the needed modification is not straightforward; quite apart from the inherent problems like multiple +MODIFY's.

Personally, I am using PATCHY a lot and I find I can live without +MODIFY, although sometimes I am bothered. But I do use YSEARCH all the time, often with the ACTION-option.

Don't take this reply for a refusal, suggestions certainly do influence future developments by accumulation.

Julius Zoll

The "FILES" command very often returns the message-

"THE ABOVE LIST MAYBE INCOMPLETE"

a) Is it difficult to give an exact list of files belonging to a user?

b) It happened to me that I had received files and the "FILES" command did not tell me about them. In view of space economy and to be able to follow the request of the operators to handle my remote files, I would appreciate if a modification to FILES could be done soon.
The problem you mention occurs whenever a lot of output files exist in the computer. The command FILES gets all the output files and sorts out the ones relevant to a specific user. Whenever there are too many of them, the buffers overflow and the message "THE ABOVE LIST MAY BE INCOMPLETE" appears, but it is not possible to increase the size of the buffers because of space problems. Therefore, to get a "complete" answer in any case would imply a rewrite of the program FILES, not foreseen at present.

A way round it - if your main concern is your remote output files - is to enter:

```
JOBS,ABCDE.O/MFB  if their names are ABCDExy or
JOBS,/O/MFB        if you do not remember the names.
```

And, of course, to dispose of the remote output files as soon as possible to alleviate the 'FILES' problem...

Genevieve Ferran
*************************************************

Submitting within a short time two (or more) jobs referring to the same magnetic tape by a TAPEIN-card with IDz...... (FIND-option) may cause the particular tape to be staged several times instead of only once - which would be really intelligent.

Is there a simple way - without job-dependencies - to avoid this or is it possible to change the "tape-mounting-algorithm"?

The only criteria for FIND not to stage a tape is the existence of the corresponding permanent file.

When several jobs are requesting the same tape are submitted in a short time, the use of job dependency is the only way to prevent the same tape to be staged more than once.

Christianne Letertre
*************************************************

May I suggest that line limits are introduced for TIELINE between the IBM and CDC ? At the moment a job can be sent down the TIELINE and then be put on the CDC printers at the centre because the line limit for the RIOS has been exceeded. It would be more sensible if the line limit check were imposed before the job leaves the IBM.

The only way to stop long outputs going to the CDC would be to define a new class, T say, with a lower line limit and assign this class only to CDC/TIELINE.

Users would have to specify MSGCLASS=T on their job card, but if they forgot to do this or the output was too long and got reclassified into class L it would not get automatically rerouted to the centre, but wait in the output queue for TIELINE (RM7F) waiting for someone to manually reroute it to local.

In addition it would be impossible to define a line limit for class T which corresponds to the RIOS limit, since on CDC the output limits are measured in terms of the disc space occupied by the output rather than the number of lines.

If you wanted to prevent your job from producing more output than can be printed at the RIOS you could use the card

```
/#JOBPARM LINES=n  (where n=estimate of RIOS line limit/1000)
```

Olivier Martin
*************************************************
My jobs sometimes produce GD3 files that I used to interpret with CPPLLOT. Ten days ago I was advised by C. Curran* through a printed output to change over to CALCOMP; as a result my plots are delivered with a time lag ranging from 24 hours to infinity. At the same time, one colleague (more reluctant to change or more lazy ?) still uses CPPLLOT and gets his plots at the next delivery time, i.e. 2-3 hours later. What shall I do? *This name was the only signature I saw on the day-file of this printout which was carrying my usual jobname.

When the off-line Graphics Factory was being planned initially, it was realised that the turn-around time for plots would unfortunately be somewhat longer than the time one was used to with the on-line Computer Instrumentation plotters, but it was still foreseen to be not more than a few hours (see CNL 125). Therefore, if you have been having delays of 24 hours or more, you should have been complaining straight away to J.C. Juvet (4935, 8-364) or to the Communications Operator ! However, during the last 2 or 3 months there have been one or two periods of hardware problems in accepting new Norsk and Benson equipment, which would certainly have increased the turn-around time during these periods. Currently, though, the situation seems pretty stable as back-ups exist for both plotter and the control computer (i.e. a Benson plotter for CALCOMP and a Hewlett-Packard 2116 for the NORD-10).

The turn-around time that one should expect now during the day for plots using the default pens and paper is 2 - 3 hours, assuming there is no heavy load on the plotters. For people using the delivery service one has to then add 1 - 3 hours, depending on the Delivery point and the time of day. Lately, due to operations staff shortage, the same turn-around could not be achieved after about 17.00hrs, but by the beginning of the next morning all outstanding plots were done. However, this situation will improve by the end of September, at which time a 24 hours operator attendance will be guaranteed in the Graphics Station area.

Sorry about the frustration you must have experienced at seeing your colleague obtaining a better turn-around with CPPLLOT, but the death-blow for the C.I. plotters is now very imminent. (30.9.78 !) A future plan is to connect the Graphic Factory to CERNET and, when this done, you will hopefully be back to your quick turn-arounds again.

Michael Howie / Jean-Claude Juvet

In recent weeks two changes have been made (i.e. to AR and to normal archived files recovery) which make it very much slower to recover archived files. This makes life considerably harder for those whose visits to CERN are measured in days rather than weeks: you rerun your program, find next morning that one of the files was not there, and then it takes the next night to get it back, and a further night to rerun your program. All this now means that archived files are considerably less easy to access than tapes. I would like to suggest that a way be found to speed up this recovery procedure, at least optionally. Would it be possible to introduce a scheme whereby this could be done at the usual cost and priority of running a tape job? Or do we have to keep copies of all our files on own tapes in order to be able to get them back in a reasonable time?

The changes made in the (not quite so) recent weeks to archived files recovery were made during a very serious period of instability of the front-end computers as part of a necessary major cut in the load (which indeed helped us to overcome this serious situation). As we become more confident that we have fixed the many bugs that only became critical during a high load situation we may relax some of the restrictions we applied. However we think at present to relax the restrictions on terminal usage first and it is unlikely that we shall restore the automatic reload of files without very strong pressure from users. This is a definite reduction in a user service and it has not been changed without good reasons, namely those above and other operational inconveniences. Given this state of affairs it is clearly unwise to submit an overnight production job without making a simple check if your files are there, especially if you have more than one. However we must emphasize that we will always make special arrangements to reload files during the lunchtime or evening for visiting users with limited time if they can demonstrate, as in your case, a genuine need, and if you contact us.

Chris Jones
September 1978

CERN Computer Newsletter 137

Please describe your problem, or write your suggestion on the other side. Then just fold the form and drop it into any mailbox.

To- Program Enquiry Office,
   Building 513 (DD),
   CERN.

--------------------------------------------------------------fold here--------------------------------------------------------------
VOX POPULI

(If you wish)
Name-
Division-
Tel.-