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CERN COMPUTER NEWSLETTER JUNE,1978 No.134

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Chapter I

GENERAL NEWS ITEMS

1.1 WYLBUR LOGON-PROCEDURE: STILL CONCERNS MANY IBM-USERS!

Up to now, the way your Logon file and Wylbur News mechanism worked involved needless disk accesses and use of space in your library each time there was any new Wylbur News. In addition there were still people who didn't get the Wylbur News at all. A new example-logon-file which corrects all this (taking advantage of a small change in WYLBUR by L.M.Robertson) has been provided and can be found in the PUBLIC-EXEC-FILE library.

NOTE: As of Wednesday the 5th JULY 1978 your LOGON-file will cease to work and will break with unintelligible messages unless you take the following action before this date.

```
#  Type              USE #LOGON PUB
                     LIST

#  Leave  lines 1/9  unchanged

#  Change the '???' in line 10 to your correct disk volume number
   (you can find it with "SHO VOL" if necessary)

#  Then, either take the file as it is,  or  - preferably -
   take the contents in lines 11/last just as hints and change them
   according to your taste. (lines 11/Last are optional)

#  Finally           SAVE #LOGON REP
                     SCRATCH #BULLETIN
```

If you have any problems or questions about some other personal defaults you want to put into to your logon-file contact the PEO (4952)

Bernd Pollermann

1.2 7600 LIBRARY MODIFICATION

The library 7600LIBRARY was modified on Thursday 15 June at 08.00 hrs..

Description of modifications:

C311	LEGFN	Call to PSIFN changed to CDIGAM
C500	DSMALL	Deleted: New version with same name under U500
F107	SMXINV	Bug fixed (card out of order)
H100	SIMPLE	Minor corrections (IBM/CDC separation)
J507	HISTO	Screwed-up dimensions, old bug fixed
J520	SURF3D	Calls to PLOT changed to PLOT3D
L800	SUPRLAY	Several corrections (Hans Grote)
M106	SORTX	Old version put back again, new version changed to M108
M108	SORTMQ	New routine for sorting rows in a matrix
Q800	FLODIA	Minor corrections
V106	RN32	New random number generator (machine independent)
Z034	WHICH	New entry MFRAME added

Fred James, Torbjorn Lindelof

1.3 CERN PROGRAM LIBRARY

List of long write-ups available in Self-Service-Documentation Area (correct as of June 1978)

Code	Routine	Date	Remark
C 303	COMBES	01.04.59	
C 311	LEGFN	22.03.66	
C 316	COUL1	09.11.67	
C 325	WHIT	01.04.69	
C 326	COUL2	01.04.69	
C 329	DBESIN	10.03.70	
C 330	DBESJN	10.03.70	
D 104	CAUCHY	07.12.70	
D 105	TRINT	25.06.64	CERN 64-32
D 111	GPINDP	01.04.69	
D 114	RIWIAD	09.06.71	
D 206	NORSIK	14.08.67	
D 207	BULSTO	10.08.70	
D 209	DIFSUB	01.06.75	
D 300	EPDE1	01.05.77	
D 302	ELPAHY	19.08.71	SI/INT.DL/71-7
D 400	NUMDI1	08.06.66	
D 506	MINUIT	10.09.77	
	MINUIT	01.09.72	CERN 72-21, 'Function Minimisation'
	MINUIT	01.01.78	Supplement, 'Interpretation of Errors'
D 509	MINVAR	09.03.70	
D 510	FUMILI	22.03.71	
D 600	FRED1	20.12.67	
D 700	RFT	28.09.71	CERN 71-19
D 701	FFTRC	01.12.73	
E 201	CUR2FT	13.08.64	
E 202	LSQFIT	10.06.63	
E 204	PSI1	01.03.68	
E 209	SPLIN3	01.02.75	
E 410	CPSC	01.11.73	DD/73/29
F 103	MATRIX	20.10.75	
F 204/205	EIGEN	04.12.73	
F 220	EISPACK	01.07.74	
F 401/402	LINEQ1	01.03.68	
F 403	BLEQ	23.03.71	
G 110/111	DISLAN	11.12.74	
H 100	SIMPLE	31.01.72	
H 603	PERT	01.12.69	
I 301	RDNUM	20.02.66	
I 901	UNPAK	01.03.68	

J 501	PLOTXY	28.09.70		
J 504	HIST	04.07.67		
J 509	CONPRT	11.11.76		
J 510	GD3	01.05.76		
	GD3	26.09.77	DD/US/8	CDC User Guide
	GD3	15.12.77	DD/US/27	IBM User Guide
J 520	SURF3D	01.07.74	New version using GD3 coming June 78	
J 522	CALCOMP	15.09.77		
L 100	HEWPAK	15.11.71		
L 200	SNOBOL4	27.09.73	Comp.Dev.Note 17	CDC only
	SNOBOL4	01.03.69		CDC User Guide
L 210	PASCAL	10.01.78	DD/US/19	
L 220	BCPL	01.04.76		
	BCPL		Supplement	CDC manual.
	BCPL	01.11.74	DD/US/22	IBM manual.
L 240	PL-11	04.12.74	CERN 74-24	
	PL-11	01.12.77	DD/77/22	
	PL-11	25.01.78	Note	
L 310	TIME76	22.12.75	CERN 75-19	CDC Only
L 400	PATCHY	01.01.77		Ref. Manual.
L 800	SUPRLAY	01.02.74	6000 version	CDC Only
M 101-107	SORTZV	04.12.73		
M 222-228	CBYTE	15.11.71	Code conversion tables	
M 410	A1MANIP	01.08.69		
M 418	PACKCH	01.09.69		
Q 210	ZBOOK		DD/78/1	User's Guide
Q 500	BARB	21.11.73		CDC Only
Q 501	BARBA	31.01.77		CDC Only
Q 510	AUTHOR	01.03.78		CDC Only
Q 600	KWIC	01.02.74		
Q 800	FLODIA	18.12.68		
Q 900	TIDY	27.08.67		
R 200	LISP	01.01.78		IBM
R 201	SCHIP	22.04.74	DD/74/5	CDC Only
	SCHIP	15.04.77	Note	CDC Only
	SCHIP	01.12.75	Note	CDC Only
R 205	REDUCE 2	01.03.73	UCP-19	IBM Only
	REDUCE 2	01.12.77	Suppl. to lwu	IBM Only
T 301	PRTAGS	16.03.67		
	PRTAGS	20.12.66	ISR/TH/66-40	
T 307	AGS	15.06.76		
	AGS	24.10.75	CERN 75-13	
T 308	BEATCH	30.05.69	ISR-BT-TH/69-27	
T 600	MAGNET	15.03.77		
T 600/602	MARE	20.03.67	CERN 67-7	
T 620	ECAP	01.05.78		CDC Only
V 401	GRAPH	01.02.74		
W 100	TRAMP	01.07.61	NIRL/M/21	
	TRAMP	01.01.63	NIRL/M/44	
	TRAMP	11.02.64	AR/SC	
	TRAMP	21.10.64	MSC/27/788	
W 101	IPSOFA	31.08.66	MSC-24/27-624	
	IPSOFA	01.06.65	RHEL/R103	
W 104	TRAJ	01.10.63	DD/CO/63/2	
W 126	ELENS	24.08.65		
W 127	RAYTRA	01.03.64		
W 132	ISRPRO	01.03.69		
W 150	TRANSPORT	15.11.73	CERN 73-16	
W 151	TURTLE	05.02.74	CERN 74-2	
W 300	RELKIN	12.03.64		
W 303	MISMAS	27.04.64		
W 304	RELKMC	28.04.64		
W 501	ATHOS	20.04.64		
W 502	PHSP4B	07.04.64		
W 503	PHSP5B	12.03.64		
W 505	FOWL	01.05.77		
W 600	MIXTURE	19.01.70		
	MIXTURE	01.09.66	UCRL-11647 REV.	
W 601	MLR	19.02.73		
X 510	MOMENTM	01.04.74		

	MOMENTM	10.08.73	NIM 115	
Y 250	HBOOK	20.12.77	DD/77/9	User's Guide
Y 251	HPLOT	01.01.78		User's Guide
	HPLOT	01.09.77	DD/US/15	Advanced User's Guide
	HPLOT	01.09.77	DD/US/16	Installation Guide

Fred James

1.4 TRANSFERRING FILES BETWEEN IBM AND CDC

Some useful facilities now exist for transferring files between the IBM and CDC systems via CERNET. In particular, users may transfer-

Source files	(both directions)
PAM files	(both directions)
Ascii 12-bit files	(from CDC to IBM only- converted to EBCDIC)

The Ascii transfer is designed to assist those users of the BARBASCII documentation program on the CDC 6000's who wish to change over to using WYLBUR or SCRIPT. For more details of the procedures to follow, use the

EXEC FROM #WRITEUP PUB

facility and ask for member 'TRANSFER'.

Ian McLaren

1.5 LIBRARY GENLIB

The library GENLIB, ID=PROGLIB (7600) has been created to group together several programs written inside the DD/EE group. In principle most of these programs should go inside the 7600LIBRARY, but for the following reasons it has been decided to keep them on a separate file:

- The code of these programs is available for many different machines with UPDATE, PATCHY or FORTRAN image cards (parts 1 to 7 below)

- These programs are in fact packages requiring a lot of maintenance. The introduction of new features or corrections requires frequent updating by the authors themselves. Programs in GENLIB at present are:

1) HBOOK histogramming package (DD/77/9) Y250

2) HPLOT graphics with HBOOK (DD/76/19) Y251

3) ZBOOK memory manager (DD/78/1) Q210
(connection to HBOOK with the set of routines YBOOK)

4) FFREAD free format input subroutine (DD/EE/78-2)
Permits reading of data cards in any order, the content of a data card is in free format (also other features)

5) GEANT simulation program for particle physics experiments (DD/78/2)

6) MUDIFI parametrisation and fit package (DD/75/23)

Build polynomial expressions representing a set of data in a multidimensional space

7) LINTRA principal components package

8) UPDPAT conversion program from UPDATE to PATCHY

To use UPDAT:

```
LIBRARY,GENLIB,ULIB.
ATTACH,OLDPL,useroldpl,ID=userid,ST=st.
UPDATE,S,I=DUMMY.
UPDPAT,SOURCE,CARDS.
YTOBIN.
CATALOG,PAM,userpam,ID=userid,ST=st.
```

A PATCHY structure with Patch names,titles,etc. can be predefined in the OLDPL if you obey the following rules

```
*DECK $$TITLE   is replaced by   +TITLE
*DECK $NAME           "          +PATCH,NAME
*DECK NAME            "          +DECK,NAME
*CALL NAME            "          +SEQ,Z=NAME
*COMDECK NAME         "          +KEEP,NAME
*IF DEF,NAME          "          +SELF,IF=NAME
*IF DEF,NAME,1         "          +SELF,IF=NAME
                      "           and + SELF after 1 card
*ENDIF                "          +SELF
(Nested *IF are not permitted)
```

If you do not have this PATCHY structure in your OLDPL you can create it, if instead of DUMMY you give an INPUT file. For example if you want a Patch name CDES for all your COMDECKS and a Patch name PROGRAM for all decks

```
*ADDFILE INPUT,YANK$$$
*DECK $CDES
*ADDFILE INPUT,name of the last COMDECK
*DECK $PROGRAM
```

9) ORDRE sort UPDATE source file decks in alphabetic order

```
LIBRARY,GENLIB.
ATTACH,OLDPL,useroldpl,ID=userid,ST=st.
UPDATE,S,I=DUMMY.
ORDRE,SOURCE,NEW.
UPDATE,N,I=NEW.
CATALOG,NEWPL,usernewpl,ID=userid,ST=st.
```

10) Some routines of the CERN Program Library (7600LIBRARY) which are used in the above programs. With these routines from the library included, GENLIB is autonomous and the order of its declaration in the LIBRARY card is irrelevant (These routines are E106, E208, F100, F117, F121, F204, M101, M409, M421, M426, M436, V100, V104, V300, V301, V304, Z007, Z028, Z029, Z200) HPLOT users have nevertheless to declare the 7600LIBRARY, to get GD3.

Remarks:

The future of 10) is not clear because any the undesirability of having duplicate, but not necessarily identical subroutines on 7600LIBRARY and GENLIB.
On both front-ends a similar library exist GENLIB6,ID=PROGLIB. It contains only the parts 1, 2, 3, 4 and 10.

On the IBM the library is CR.PUB.GENLIB with parts 1, 2, 3, 4, and 5.
(Parts 6 and 7 are being introduced).

Rene Brun

1.6 ID=PULIB FILES ON MFA AND MFB

Most of the files on ID=PULIB are never directly accessed by users, as they are attached within macros, etc., and they will not be listed here. However, all files that users would normally use are shown, together with an indication of the use of the file, and whether it is on both MFA and MFB or just one machine.

ATT	Alternative ATTACH, uses default ID´s etc (via UT SET)
ASP	Interface to HPLOT allowing creation of transparencies of text on the 7600. MFA only (see CNL 131, p.5)
AUD	Alternative AUDIT, uses default ID (via UT SET)
CALCOMP	Procedure to send GD3 display files to the Calcomp plotter (see CNL125, p.4)
CALCOMPLIBRARY	Library of Calcomp routines (see CNL126, p.7)
CALPLOT	Procedure to send Calcomp plot files (not GD3!) to the Calcomp plotter (see CNL126, p.7)
CASTOR	Procedure for using the Automated Abstracts System on the 7600. MFA only (see DD/US/17)
CAT	Alternative CATALOG, uses default ID´s etc (via UT SET)
CCPLOT	Interpreter for GD3 display files -> Calcomp plotter which is normally accessed via procedure CALCOMP
CERNJOB	Procedure for running FORTRAN programs on the 7600, with MANTRAP included. MFA only
EXPLT10	Example of an interactive program using PLOT10 routines (see CNL127, p.22 for an article on PLOT10)
FLOPLIB	Library containing FLOP routines (see DD/US/13)
HPLOTEXAMPLES	This is a GD3 display file containing the Figures from the HPLOT User´s Guide (CERN Program Library Y251) There is also a file, HPLOTADVANCEDEXAMPLES, which contains the Figures of DD/US/15.
IBMIN	Procedure to access IBM tapes, 7600 use, on MFA only
IBMOUT	Procedure to write IBM tapes, 7600 use, MFA only
INDENT	Procedure to ´tidy up´ FORTRAN by indenting DO-loops. (See CNL132, p.5)
MTN	Mortran procedure, 7600 use, MFA only (DD/US/18)
PASCALEXAMPLES	Source of some PASCAL example programs
PASCAL76LIB	Library for PASCAL use on the 7600, MFA only (see DD/US/19)
PASCLIB	Library for PASCAL use on the 6000´s (see DD/US/19)
PLOT10	Library containing the Tektronix graphics routines
PUR	Alternative PURGE, uses default ID´s etc (via UT SET)
QMAC70	Microfiche procedure for 7600 use, MFA only (see DD/US/6)
SCOOPLIBRARY	Library of SCOOP-compatible Calcomp subroutines (CNL126, p.9)
STACKLIB	Library of vectorised routines for the 7600
TVFILE	GD3 display file containing the Figures in the User Guide (see DD/US/8)
TVFTN11-13	Examples of interactive GD3 programs (see DD/US/8)
WISAVE	Procedure to attempt recovery of corrupted RT=W,BT=I tapes. Use on 7600, MFA only (see CNL 111)
XPASCAL	Procedure to run PASCAL programs on the 7600, MFA only (see DD/US/19)

Charles Curran

1.7 PLOT10 OUTPUT FROM PLOTTER

The PLOT10 graphics package has been modified to allow the graphs produced by PLOT10 to be sent to the CALCOMP plotter using TAPE41 as a plot file. PLOT10 can be used as usual, however producing the error message

```
NON-FATAL LOADER ERRORS
UNSATISFIED EXTERNAL REF--TAPE41
```

You can avoid this message by specifying TAPE41 in your PROGRAM card.

To use the CALCOMP plotter with PLOT10 the following changes should be made in your program.

1) Specification of a plotfile in the program header, use TAPE41 as follows:

```
PROGRAM MAIN (INPUT,OUTPUT,<fname>,TAPE41=<fname>)
```

2) Plotter initialization:

After calls to INITT and BINITT before the production of the first frame to be saved for plotting

```
CALL PLBGN
```

3) Ending the plotting at the end of the program or after the last frame to be plotted (after CALL FINITT):

```
CALL PLEND
```

To suspend plotting for some graphs:

```
CALL PLSPN
```

To continue plotting afterwards:

```
CALL PLCNT
```

Use these calls in the program if desired. Note PLCNT must be called before the production of the next frame to be saved for plotting.

5) To initiate processing of the plotfile, setting of plotter options and routing of the plotfile named <fname> in 1) above:

```
ATTACH,PAPLOT,ID=PULIB
PAPLOT,I=<fname>
```

Do this before LOGOUT! The user is then asked interactively to specify the available plotting options. Entering a blank will set the default value.

Plotter options that can be used with PLOT10:

i) Paper type

```
PLAIN (default)
SQUARE
VELLUM
```

ii) Pen type

```
BALLP  ball point pen
INK02  ink pen : width = 0.2mm
INK03   "   "      "   = 0.3mm (default)
INK04   "   "      "   = 0.4mm
INK05   "   "      "   = 0.5mm
INK06   "   "      "   = 0.6mm
INK08   "   "      "   = 0.8mm
```

iii) Pen colour

```
BLACK (default)
RED
BLUE
GREEN
```

iv) Paper size

```
NARROW [290mm] (default)
WIDE   [860mm]
```

V) Plot size

```
i) XSIZE:  XXX
           290 (default)

ii) YSIZE: YYY
```

290 (default)

XXX and YYY are the sizes of the X range and Y range, respectively, millimetres.

XXX	290 for non-SQUARE	XXX $\leq$ 250	for SQUARE paper
YYY	290 " " "	YYY $\leq$ 250	" " "
		XXX $\leq$ 860	for WIDE paper
		YYY $\leq$ 860	" " "

vi) Label size

MIN
SMALL (default)
MEDIUM
LARGE

NOTE: To get your plot output delivered to your nearest RIOS ststion, you have to use the following delivery code as first two characters of your JOBNAME:

Bldg.	Room No.	Delivery Code
-2-	1-032	X1
-4-	S-025	X2
-13-	1-018	X3
-892-	1-B05	X6
-17-	S-027	X7
-22-	1-031	X8
-54-	R-035	X9
-112-	1-013	X4
-582-	R-017	X0
-SPS-	C-01	X5

Example procedure of interactive setting of plotter options

```
YOUR HARD COPY PLOT IS BEING SCANNED.
IF YOU DO NOT WANT A PLOT PRESS ESC A RETURN ...
YOUR PLOT FILE CONTAINS 2 FRAMES.

PARAMETER SETTING FOR HARD COPY OF PLOTS:

DEFAULTS: JOBNAME     PLT10
          DEVICE      CALCOMP PLOTTER
          PAPER       PLAIN
          PAPERSIZE   NARROW (29CM)
          PEN         INK 0.3MM
          COLOUR      BLACK
          PLOTSIZE    290MM BY 290MM
          LABELS      SMALL

ARE THESE SATISFACTORY? (Y or N)     n

FOR THE FOLLOWING PARAMETERS, A SPACE INDICATES THE DEFAULT,

TYPE THE JOBNAME UNDER WHICH PLOTS WILL BE PRODUCED:  x2raf

WHICH PAPER?
(PLAIN, SQUARE, VELLUM)
       vellum

WHICH PEN?
(BALLP,INK02,INK03,INK04,INK05,INK06,INK08)
       ink02

WHICH PEN COLOUR?
(BLACK,RED,GREEN,BLUE)
       green

WHICH PAPERSIZE?
NARROW-PICTURE LE 290MM
WIDE  -UP TO 860MM
```

```
(NARROW,WIDE) WHICH
       narrow

GIVE PICTURE SIZE IN MILLIMETER
MAXIMUM 250MM FOR SQUARE PAPER
MAXIMUM 290MM FOR NON SQUARE PAPER
FOR WIDE PAPER - MAXIMUM 860MM
XSIZE IN MM?      150

YSIZE IN MM?      200

WHICH LABEL SIZE?
(MIN,SMALL,MEDIUM,LARGE)
       min
```

Helga Rafelski

1.8 CHANGE OF CUAC REPRESENTATIVE - SPS

As from June 1st, 1978, H. Atherton will represent SPS Division in the Computer Users Advisory Committee. (Tel. 5396 Bat. 866 - 2-D26)

1.9 ERRORS OF OMISSION AND COMMISSION

The first of last month's Vox Populi was, in fact, a dummy used by us to reserve a "space" to put in real ones: we forgot to delete it. However, the Newsletter is now being run off with SCRIPT under WYLBUR and this makes life easier.

In the article of Harry Renshall on the "IBM Raw Data Tape Stacker", the dataset containing example JCL should have been CP.PUB.UTLTYSC(STACKJCL).

Charles Curran

1.10 CLOSING DATE- NEXT NEWSLETTER

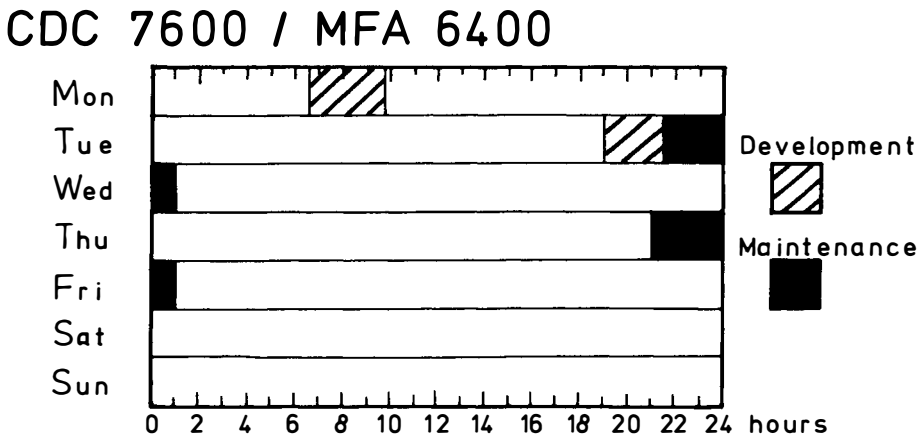
The closing date for the next Newsletter is 15 July. Articles already in machine readable form (on CDC or IBM, at 80 chars/line, 10/inch and 72 lines/page, 6/inch- we use Pica-10 type) are far more welcome than those which have to be typed! The Computer Newsletter is produced monthly by the User Support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

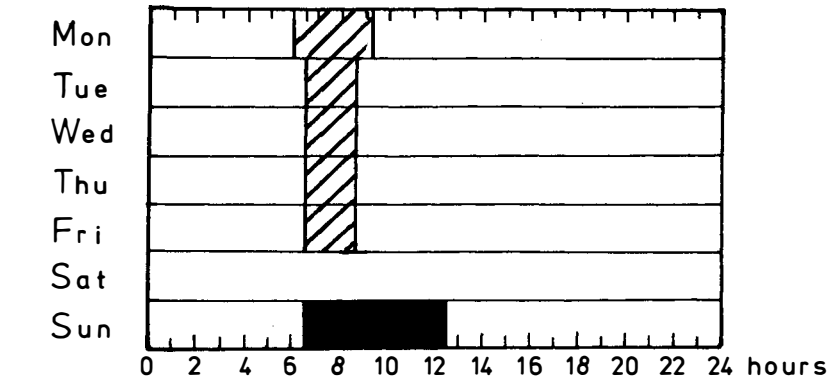
Distribution of the Newsletter

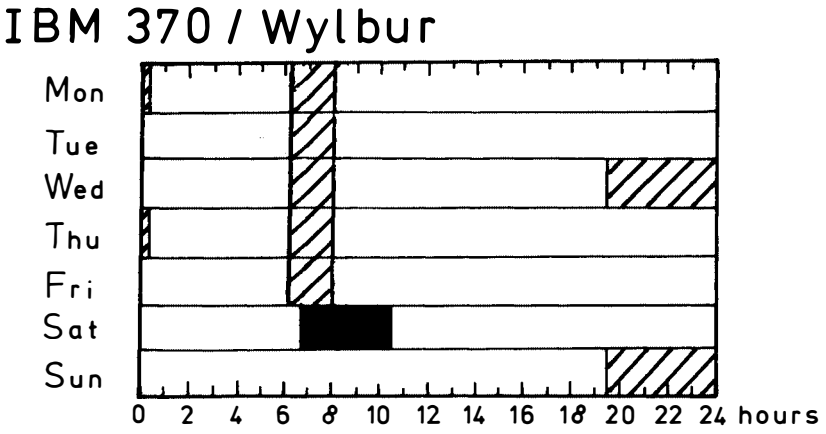
The Newsletter is distributed inside CERN to all registered users of the central computer systems, and to any person requesting a subscription from-

The Computer Science Library,
CERN 1211 Geneva 23,
Switzerland.

2.4 CDC/IBM TIMETABLES







2.3 CDC/IBM PERFORMANCE GRAPHS

Chapter II

COMPUTER CENTRE PERFORMANCE

The period covered in this article is 18 April 1978 to 5 June 1978. The graphs present the last 100 weeks of accounting data, prepared by J-L. Penaud and output using the HPLOT package of Howard Watkins.

2.1 IBM SYSTEM

See upper figures opposite

The availability of the 370/168 decreased in this period to 99.xx %. Nevertheless, maintaining an excellent standard, the MTBI was xx.xx hours.
Workload has steadily increased thoughout the period with an average of xx.x CP hours/week and xxxx jobs. Since the beginning of May the CP utilisation has been around 105 hours/week. The 3850 mass storage system arrived at the end of this period and is undergoing system check- out after a successful installation.

2.2 CDC SYSTEM

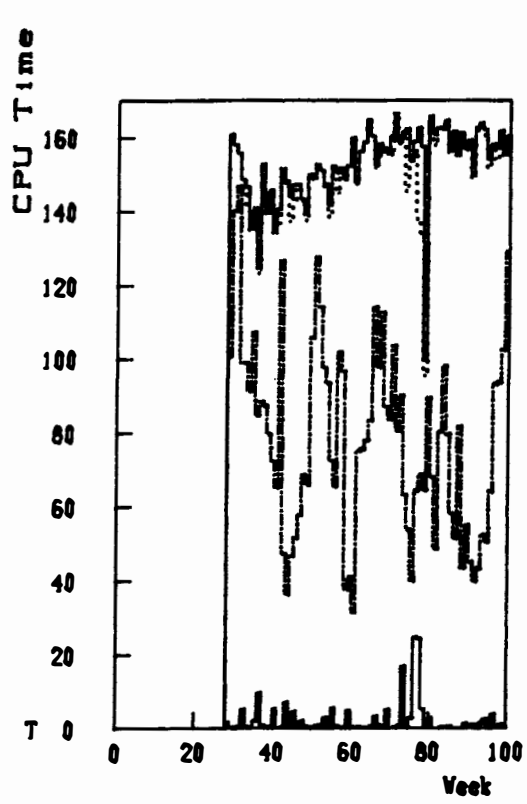
See lower figures opposite

The performance of the 7600/6400 system in this period has been unsatisfactory particularly as a result of 6400 instability. The service has seen a significant reduction in stability and the overall MTBI was 12.79 hours. The availability decreased to 94.62 %
The 6000problems experienced have been due to a mixture of overload, hardware and software problems with software being the major culprit. Various service reductions on the 6000's were made to relieve the situation and a return to a more controlled stable service is expected.
Nevertheless the workload in this period increased to 13612 jobs and 114 user CP hours averaged per week. Again since the beginning of May the average has been in excess of 120 user CP hours. Thus, the overall trend across all systems is towards saturation.

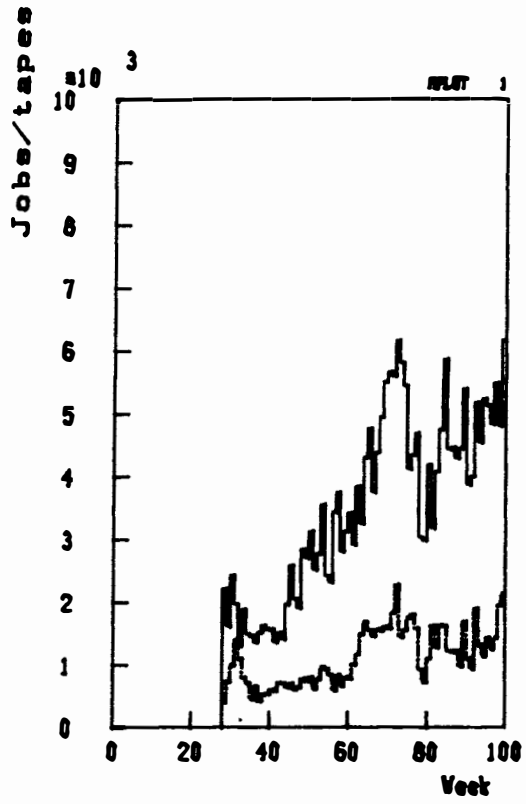
Key to Figures-

Scheduled CPU time	————	solid line
Achieved CPU time	.....	dotted line
User CPU time	._._._._.	dot/dash line
Unavailable CPU time	————	lower solid line
Jobs run	————	solid line
Tapes stage(7600)/mounted(370)	._._._._.	dot/dash line

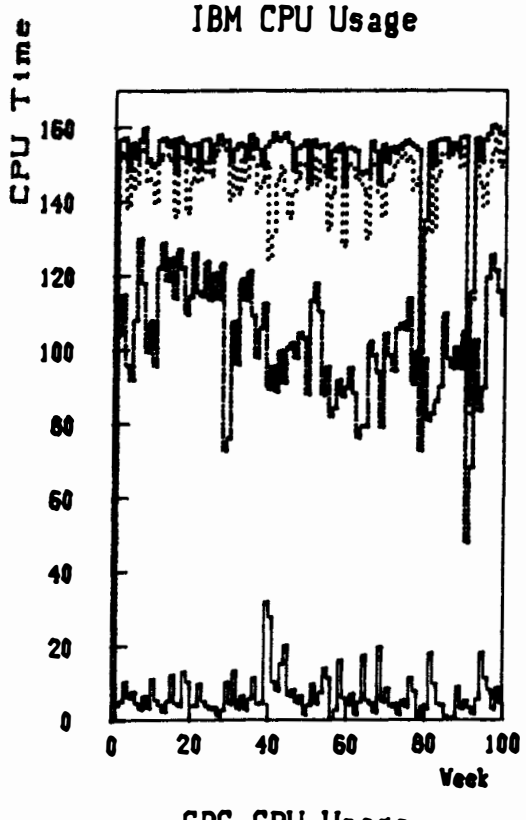
John Ferguson



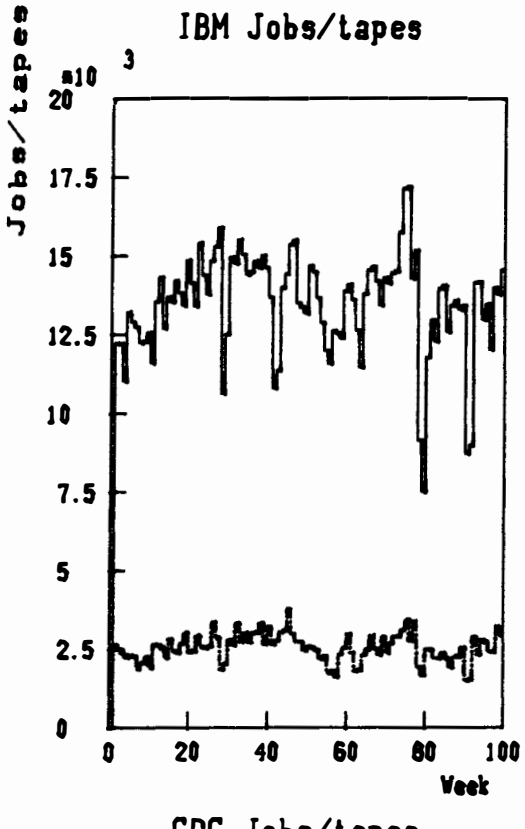
IBM CPU Usage



IBM Jobs/tapes



CDC CPU Usage



CDC Jobs/tapes

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,LRECL=133,BLKSIZE=1995), and assumed labelled (unless you give 'UL'). Those which connot 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=abcde[,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.

DD/US/n	Title	IBM key	CDC key
1	CDC 7600 User's Guide	CDC	CDC
2	INTERCOM Pocket Summary Card	-	INTERCOM
3	A Comparison of CDC and IBM FORTRAN	FORTRAN	FORTRAN
4	IBM 370 User's Guide	IBM	IBM
5	AR File Archiving Program	-	*AR
6	Microfiche User's Guide	-	QUANTOR
7	Control Card Macros	-	MACRO
8	GD3 User's Guide- CDC	-	GD3
9	Paper Tape User's Guide	-	PTAPE
11	Contents of CERN Library	LIBRARY	LIBRARY
12	PEJOB Ascii Printing Guide	-	PEJOB
13	FLOP User Guide (FORTRAN Parser)	-	FLOP
14	SUE, Single User Editor	-	*SUE
15	HPLOT Advanced User Guide	-	HPLOTA
16	HPLOT Installation Guide	-	HPLOTI
17	CASTOR, Automated Abstracts	-	CASTOR
18	MORTRAN User Guide	-	*MORTRAN
19	PASCAL User Guide	-	*PASCAL
20	WYLBUR Reference Manual	-	-
21	On-line Support for Labelled Tapes	-	LABEL
22	BCPL on the IBM	BCPL	-
23	EVENT for CDC	-	-
24	WYLBUR Tutorial	-	-
25	WYLBUR Command Summary Card	-	-
26	NOSED Alternative Editor under INTERCOM	-	NOSED
27	GD3 User's Guide- IBM	GD3	GD3IBM
28	STICKER Label and Address Printing	STICKER	STICKER
29	Listing of SYS3.PROCLIB	-	-
30	Introduction to IBM JCL	JCLINTRO	-
31	WYLBUR EXEC File Tutorial	EXECFILE	-
32	FELIX User Guide	-	-
33	CERNET User Guide	CERNET	-
34	HEPPI User Guide	-	HEPPI
35	Physics Data Handling Notes	-	-
36	ASP- Automatic Slide Production	-	ASP
37	INTEL 8080 Cross Assembler	I8080	-

	Computer Newsletter 'nnn' (>130)	CNLnnn	-

Also supported are the following Program Library long write-ups-

L220	BCPL Long Writeup	-	*BCPL
Y250	HBOOK Long Writeup	HBOOK	*HBOOK
Y251	HPLOT Long Writeup	HPLOT	HPLOT
Q210	ZBOOK Long Writeup	-	ZBOOK

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.
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).
FIO999	A FORTRAN READ/WRITE simulation (similar to ENCODE/DECODE).
GOPARM	FORTRAN callable subroutine; returns the G-step parameter string (Program Library Z262).
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.
REMARK	Subroutine to write a message in the JES Job Log.
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.
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.
TAPGUIDE	Description of operational procedures for handling magnetic tapes at the Computer Centre. (Entering labelling degaussing etc.)
TRANSFER	Introduction to using CERNET to transfer source, PAM and documentation files produced by BARBASCII (CDC 12-bit) to the IBM and source or 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.
XCPOUT	FORTRAN callable routine to write records with RECFM=U to magnetic tape.
XPACKAGE	IBM version of the CERN Program Library package Z200, but note that the IXLONG function of the IBM version returns the record length in bytes, not words.

Charles Curran, Judith Richards

Chapter IV

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.

Title	Authors	CNL	Notes
ALGOL and SYMPL, 7600	W. Simon	120	
AUDITP, 7600 file audit	L. Robertson	116	
CALCOMP Graphic package- 7600	F. Fabiani	126	127 - IBM
CERNLIB, 7600 libraries	C. Curran	122	
ECAP/SCEPTRE circuit analysis	J. Howie	98/114/115	
GETFILE/RETFILE,SAVELIB/RESTLIB	C. Letertre	124	
MANTRAP with previous compilations	H. Watkins	120	FTN,U now
PATCHY 4- Automatic conversion	H. Grote	124	
Programming Conventions	M. Metcalf	106/107/112	
XPLOT- GD3 Frame Selection- 6000´s	C. Curran	119/120/124	ID=PUBLIC
Divisional Representatives	-	128	

Note 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 V

IF YOU NEED HELP.....

Most requests for programing help are handled by the-

PROGRAM ENQUIRY OFFICE	0830-1200 1330-1700	513/1-014	8-935 4952 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	Georges Durupthy	513/R-033	2397
Allocation/Cleaning	Tape Reception	513/R	4939
COMPUTER SERVICE PROBLEMS			
Operations - all aspects	John Ferguson	513/R-017	8-637
" - CDC service	Jean-Claude Juvet	"	"
" - IBM service	Dave Underhill	513/R-035	8-364
User Support	Chris Jones	513/1-007	8-947
Software Systems	Tor Bloch	31/2-028	4949
RIOS's	Martin Sheehan	513/R-034	3348
Terminals	Comm. Operator	513/R	4927
CERNET	Mike Gerard	31/3-012	8-951
	Ian McLaren	513/1-009	5010
FOCUS/FOCUS Data links	Ian McLaren	513/1-009	5010
Microfiche	Jean-Claude Juvet	513/R-037	4935
OTHER SERVICES			
GD3 Graphics	Michael Howie	31/2-007	2993
Computer Science Library	Felicitas Morice	513/1-011	2371,2379
Math Advisory Service	Benno Schorr	31/3-024	4120
INFOL/TOTAL Databases	Jean-Philippe Baud	31/3-019	3347
Terminal Service	Carlo Vandoni	31/2-003	8-952
FELIX	Florence Ranjard	2/1-027	8-632
REGISTRATION			
New Users	Divl. Rep- CNL 128		
INTERCOM Users	Jutka Igo-Kemenes	513/1-003	5029
	Attila Koppanyi	513/1-002	4933

Chapter VI

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

While editing a file under INTERCOM the other day a little red light on my terminal seductively winked at me and then teasingly refused to accept any advances. All attempts to logout or login under my own ID met with frustration. What is worse is that all the files I had previously attached were now inaccessible to me, even if I logged in under the name of a sympathetic colleague. I phoned the PEO to ask what I could do about this dismal situation and was told to pray for a system crash! My pastor and I worked on this problem for nigh onto five hours before convincing the Almighty to intervene on my behalf. Any suggestions on how I can short circuit the middleman in future would be much appreciated.

Your red light told you that you had lost connection to SUPERMUX. A crash of an HP could have been the reason. Usually the restart of the HP allows you to get going again. But for some reasons, as yet unknown to us, occasionally the lost computer (MFA or MFB) does not clear your assignment to the crashed HP, hence you cannot login under your name.

If you find a "sympathetic colleague" who lends you his name and password, you can however work with your permanent files if you have previously cataloged them with multiread access (XR=xyz). Unfortunately your previous work e.g. your EDIT FILE is lost unless you save and catalog every so often during your session the work already done.

Horst Von Eicken, Genevieve Ferran

****

When printing local files at a RIOS under INTERCOM using UT LP, end-of record and end-of-file are not indicated in any way on the printer.

Would it be possible to print *EOR or *EOF, following the EDITOR display convention, or at least to show a blank line, together with the sequence number when the file has been SAVEd from EDITOR with sequencing retained?

Such a facility would be very helpful for doing "homework" on complicated data files which have been concatenated, to help in removing the gratuitious E.O.R. that merging commands freely insert.

*EOR and *EOF are EDITOR's own representations of end of section and end of partition (e-o-s & e-o-p). Neither e-o-s or e-o-p is ever "represented" on a printer. To see it, I suggest you just do:

```
/*EOR/=/ end of section!!!/,A
```

and

```
/*EOF/=/ end-of-partition!!!/,A
```

```
S,listing.
LP,listing,....
```

Charles Curran

****

Being an occasional user of the POP-2 language, I recently detected that the

```
COMPILE(LIBRARY([...]));
```

facility is no longer working properly. The reason seems to be that POP-2 makes an implicit

```
ATTACH,POPLIB,POPLIBRARY.
```

but this file is no longer existing. It has been renamed as

```
PUBLICPOPLIBRARY,ID=TEMP
```

and archived. Several attempts to attach that file resulted in the retrieval aborting, the archive tape being obviously corrupted.

I am very astonished that all this could happen to a file with ID=PUBLIC. Is POP-2 supported at CERN? At least, it should be possible to re-install the "POPLIBRARY" as it was before. And, please, make sure that such accidents do not happen again with "PUBLIC" files.

PUBLIC files are subject to control in the same manner as all other files; they are not immune to purging or renaming if they are over budget. Both POP2 and POPLIBRARY were fortunately to be found on MFA where the POP2 production programs run, and I have transferred POPLIBRARY to MFB. The only reason for any of these files being on ID=PUBLIC is because of the implicit ATTACHes you mention - we do not have source for these programs and cannot change this. POP-2, to answer your point on support, is little used and is "available", but not supported (at any rate by the PEO!). We are pleased to try to sort out problems of this type, however.

Charles Curran

****

We have a problem with the job resequencer. If the "job to be resequenced" is existing around the time a dead-start is performed, the job is not resequenced- i.e. it does not return to the input queue. This is a little inconvenient. Since the job in question is our major DST production program, and it has disappeared from the input queue at least once over the last 3 weekends, we have to check the status of the 7600 continuously.

We do not have this problem with a small resequencing job which checks the status of the main analysis - presumably because its execution time is so short, it has not yet coincided with a dead-start.

This bug will be corrected in 7600 system version V04L2.

Christiane Letertre

****

At present the banner page of any job has a sequence of identical characters at and near the edge of the page. It would be useful to have this come out as 012345678901234...etc. as a handy, always available, column indicator.

Good idea! We will consider it although we might not be able to do it for remote I/O station banner pages.

Vitorio Frigo

****

AR is very good for CDC users with many files but it has some annoying limitations which I hope could be removed. For example, if I have 100 files in my directory and I wish to restore just a few (say 2 or 3) I must either scan all 100 files at my terminal or else run a separate AR job for each file recovered causing a new tape mount for each file. It would be nice to have an option wherein one types in a list of files (>=1)

AR will scan the files for you if after the prompt

ENTER YES,NO,ID=...[PF=...] or ID=...[ID=...]

you type

ID=owner,pf=file1,pf=file2,...

Only files1 and file2 of the ID given are listed, and only for these files has a response to be typed. All other files are not considered.

Pieter Hartel

****

I would to like to see the TAB command reflected on the screen when using WYLBUR.

The problem here is that the equipment used to connect the WYLBUR terminals is basically half duplex (as described in Vox Pop in CNL 132). WYLBUR/MILTEN only receive the data on completion of a line when carriage return has been pressed. There is no opportunity to detect the TAB character as it is entered and reflect a sequence to move the cursor to the appropriate position. WYLBUR assumes that the terminal has hardware tabs but unfortunately there are very few terminals at CERN which have this feature. This support is of course inferior to that provided by the SUPERMUX processors which were developed at CERN, but there are some other advantages in using standard interfaces and software.

Les Robertson

****

Could the user printer be made available using DEST=USER as well as by MSGCLASS=U. This would make changing the job destination between remotes and the printer much easier.

If we change the "ROUTE" destination of the user printer to "USER" it will still only print class U output. We could make WYLBUR accept DEST USER and generate the appropriate ROUTE MSGCLASS parameters. It would be interesting to knew if there are other users who feel that this would be useful.

Les Robertson

****

Is there an easy way of showing the creation date of the members of a PDS via WYLBUR with a command of similar format to SHOW DIR

The creation date of a PDS member created by WYLBUR is stored in Julian form in the second halfword of the user data field in the directory entry (see the SSI parameter of the SAVE command).

SHOW DIRECTORY ALL displays this field, but the format is rather obscure, and so we shall extend the output to include the data in month/day/year form.

Les Robertson

****

It would be nice if SFORTCLG would empty the output buffers in case of an abort, so one would know the last line actually printed.

The standard "output data set" (number 6) previously buffered 15 lines for reasons of efficiency. The procedure SFORTCLG will be changed so that the above mentioned data set works in unbuffered mode, ie every line is output immediately. This will lead to a slight deterioration of efficiency of SFORTCLG - therefore it will not be introduced as a default in XFORTCLG.

In order to override the XFORT specification use:

```
//G.FT06F001  DD  SYSOUT=*,DCB=(RECFM=FA,LRECL=133,BLKSIZE=133)
```

Wolfgang Simon

****

Why are the contents of some libraries altered without warning the users?

On Friday evening, one of our production programs started generating many thousands of lines of errors messages. This we traced to a change in ZDROP. Having cured the problem it was not until Monday (by which time almost 4 hours of CPU time had been wasted) that we found that another change to ZDROP was causing us to lose data.

CPU time is becoming increasingly hard to get; to lose 4 hours is very annoying.

Sorry for the change in ZDROP. The introduction of the error message was requested by other users. Concerning the so-called bug you call ZDROP several times for the same bank before it is effectively deleted from memory, what is after all possible. I think nevertheless that if you reorganize your logic you can save one part of the time you have lost due to this change.

I agree with you that warnings should be given to the users when a modification is made a library. That implies distribution list, typing work, etc. If up to now nothing has been made it is mainly due to the shortage of manpower. It is planned to reorganize seriously the different libraries on the CERN market offering to the users more facilities, documentation and portability.

Rene Brun

****

On non-virtual IBM systems, program size can have a big effect on turn-around time. HBOOK consumes a lot of core, but most of it is in booking/printing and this could easily be overlaid away. Could some sort of cross-reference diagram be produced for HBOOK? Outside users would be most grateful.

HBOOK takes in general a non-negligible part of the total space of a program. That is due to the big number of options available. Some routines may be loaded also when you do not need them at all. This could be solved by a dynamic loader or by overlaying.

It is possible on a given installation to implement the package with a predefined overlay organisation. This is machine dependent.

An HBOOK reference manual is in preparation where in principle you will find all details on the implementation and internal structure of HBOOK. On the other side you can separate easily booking and printing in different overlays. But in a normal program there are many ways to gain space by calling only the routines that you need effectively. For example too many users call the general printing routines HISTDO or HPRINT.

If you have only 1-DIM histograms CALL HPHIST
1-DIM and scatter-plots CALL HPHS

The printing represents 70 percent of the HBOOK space. You can gain that space in the following way:

Replace CALL HISTDO or CALL HPRINT(0) by CALL HSTORE (0,LUN) (LUN must be defined in the program card on CDC). Then in the next step you execute the following short program containing:

```
CALL HFETCH(0,LUN)
CALL HISTDO
```

LUN may also be saved as a permanent file.

If several users are interested we can envisage organising some HBOOK users meetings to answer to criticisms, problems and suggestions.

Rene Brun

****

My query concerns HBOOK. If one calls HFILL to an unbooked histogram the call is ignored. As my/our programs grow in size they seen to accumulate HFILL calls which have been made inoperative by removing the corresponding HBOOK call. Would it be possible to provide an option so that the summary table lists histograms referenced by HFILL but not booked?

The filling routines HFILL, HF1 and HF2 do not produce error messages to avoid kilometers of paper being wasted.

What you propose could be an elegant solution without major technical problems concerning the implementation, but that is in general true for any new option introduced in HBOOK.

We would like to keep the size of the package within acceptable limits. In particular the part concerning the filling which is in general in the root of the overlayed programs.

I suggest that for the moment you write your own subroutine HFILL (may be HF1, HF2). Using the function HEXIST you can build yourself the table of un-used but booked histograms.

Are other persons interested by such an option?

Rene Brun

****

I would like to ask for a change in the labelling of logarithmic axes using the GD3 subroutine TVLBL, as regards the placing of the selected number of labels per cycle. For example, choosing "3" results in labels at the 1, 2, 3 points instead of the generally more useful 1, 2 and 5 points, etc.

Your observation is valid and I agree that a better algorithm could be chosen for assigning which labels are to be printed. However there are similar situations in GD3 where it is difficult to get any uniform agreement on what is the best algorithm, or what is the best way of presenting a certain facility to the user, and one has to accept that, for GD3, the majority of these decisions were made many years ago. Also, in these days of depleted man-power, there is not enough time to continuously be making marginal improvements.

Still, as I said at the beginning, I think in this case your point is valid, and an improved algorithm, to cover your suggestion, will be incorporated in a future update of GD3.

Michael Howie

****

The option POINT is missing in the GD3 Introductory Guide (DD/US/8 21 Dec. 77) in the description of the CALCOMP macro on page 41/42.

Thank you for your observation and I apologise that the documentation is not being updated as frequently as it should. There are in fact, some other small errors/omissions to be corrected as well. An update will now be done straight away.

Michael Howie

****

It takes an average of more than 5 tries to log-on to anything through the "keyboard class select" facility provided for us at the terminals near the NA RIOS. Most of the time there is no response to the typing of "042<CR>". Sometimes the boredom is alleviated by the appearance of a few characters of garbage.

The keyboard class select (KCS) facility is operating in the main INDEX. Connections from the North Area are made through a mini-pacx and time division multipleing. If you allow for 2 sec. switching delay after you have switched on the "blue box" you will have no problem logging-on via KCS.
A modification of KCS is being planned which includes prompting when the system is ready to accept your class selection.

Hendrik Slettenhaar

****

Pourquoi le "CERN Computer Newsletter" parait-il toujours et seulement en Anglais?

At the moment we have nobody who has the time or is willing/able to translate it into French. In fact, we have enough trouble trying to do it in English! But every volunteer would be welcome.

Charles Curran

DATE-____/____/78 Machine-_____

System--_____

VOX POPULI

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

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

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

----------fold here----------

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