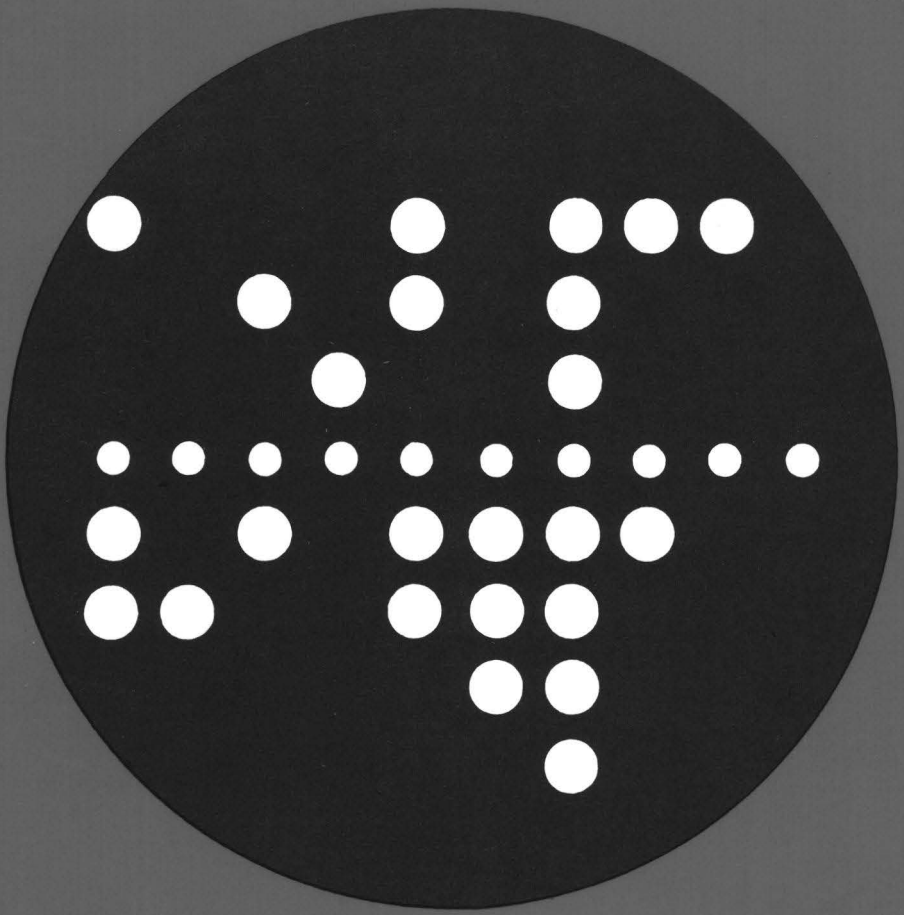
COMPUTING CENTRE NEWSLETTER

July 1981 - N. **53**



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EDITORIAL NOTE

The Computing Centre Newsletter is published monthly except for August and December.

It describes developments, modifications and specific topics in relation to the use of the computing installations of the Joint Research Centre, Ispra Establishment.

The aim of the Newsletter is to provide information of importance to the users of the computing installations, in a form which is both interesting and readable.

The Newsletter also includes articles which are of intellectual and educational value in order to keep the users informed of new advances in computer science topics.

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AMDAHL 470/V8

J. Pire

Profitant de la fiabilité de l'ordinateur installé en Août 1980, les utilisateurs ont proposé au Centre de Calcul une charge de travail nettement accrue et qui ne cesse de croître de mois en mois.

Les problèmes de longue durée et largement "C.P.U. bound" notamment sont en nette augmentation.

Au vu de cette constatation et tenant compte également de conditions financières, la Direction de l'Etablissement a marqué son accord pour faire opérer l'"upgrading" de l'unité centrale de modèle V7A à modèle V8.

Cette opération était par ailleurs prévue dès l'installation de l'ordinateur en 1980.

Si ce n'est l'augmentation de vitesse d'exécution et, par conséquent, la diminution des temps de calcul nécessaires, l'opération sera complètement tranparente pour l'utilisateur, sera effectuée pendant le mois d'août 1981 et ce sans interruption du service.

L'unité centrale V8 est réputée avoir une vitesse d'exécution 1.5 fois supérieure à celle de l'unité V7A. La différence devrait être surtout sensible sur les opérations en virgule flottante.

La dimension de la mémoire tampon qui passe de 32K à 64K concourt elle aussi à l'augmentation de la vitesse de calcul.

Pour ceux qui s'intéressent également à la comptabilisation des temps d'utilisation, disons que le facteur K_o des formules de facturation (voir no. 46) prendra la valeur 3 à partir de Septembre 1981.

INNONDATION DE LA SALLE DES ORDINATEURS

J. Pire

Le Dimanche 28 Juin 1981, à la suite d'un orage et de l'obstruction d'une conduite d'évacuation, l'eau de pluie a traversé le plafond de la salle des ordinateurs endommageant deux imprimantes et deux unités de contrôle de lignes de télécommunication.

Les dégâts les plus graves ont porté sur l'unité principale de contrôle de lignes, la Memorex 1380.

Au bout de 5 jours environ une ligne sur trois étaient disponibles et au bout de 2 semaines la quasi totalité des lignes a été rendue à nouveau utilisable et le service rétabli.

Nous demandons aux utilisateurs dont les lignes ne fonctionnent pas encore parfaitement de prendre patience car le dépannage de leurs lignes ne pourra se faire pratiquement que pendant les heures dédiées à la maintenance; la seule alternative étant de risquer d'interrompre à nouveau le service conversationnel pour dépister les erreurs résiduelles sur l'unité de contrôle.

Il est clair que tous les efforts ont été portés vers la réparation des dégâts. L'installation d'une nouvelle unité (aussi légèrement endommagée), qui était en cours, a subi de ce fait un certain retard.

Nous espérons que l'arrivée de la période de vacance fera moins ressentir les déficiences encore existantes sur le système de transmission et qu'à la rentrée, vers Septembre, nous pourrons offrir un service correct...à moins que notre toiture ne nous offre une nouvelle douche froide.

LIBRARIAN CHANGES

M. Dowell

All LIBRARIAN masterfiles are now named according to the standard naming conventions (i.e. SYSU.--- or TSOxyz.---) and are cataloged. Because all access to these masterfiles is via the catalog, the parameters to the batch LIBRAP procedure have been changed. It is now no longer necessary to give a "E=" parameter or a "K=" parameter to specify the disk volume and/or type of disk unit.
Thus, an example of the normal use of the batch LIBRAP procedure might be as follows:

```
//      EXEC    LIBRAP,A='SYSU.MYMAST'
//        DD    *
.
.
.     LIBRARIAN control cards
.
.
/*
```

Creation of New Masterfiles

The creation of new masterfiles in batch has also been changed. The following job shows the new form using the new batch procedure LIBCREA:

```
//          JOB(your job card)
//     EXEC  LIBCREA,A='dsname',E=volser,CYL=n
//SYSIN  DD *
-OPT INIT,DISK,options
/*
```

in which:

dsname
: is the name of the masterfile data set to be created for use. This name should be in the form SYSU.--- or TSOxyz.---.

volser
: is the volume serial number on which the masterfile is to be created.
This may be chosen from one of the available user disks in the range USER01,USER02,...

n

is the space in cylinders to be allocated to the masterfile.
(Normally one cylinder will be sufficient to hold approximately 14000 records (card images) of an assorted nature).

options

-OPT is a LIBRARIAN command card. When intializing the masterfile the special form of the -OPT command shown is used to define certain default values for modules.
For a subsequent loading of a module into the masterfile it is always possible to override these defaults for a single module.
The most common forms of these defaults are:

```
-OPT INIT,DISK,NORESEQ,NOLIST,NOPUNCH,NOEXEC,SEQ=/73,8,10,10/
```

The records are numbered starting in column 73 with a field width of 8 columns. The first sequence number is 10 and the sequence number increment is also 10. (SEQ=/73,8,10,10/)

- The modules of this masterfile are not automatically renumbered after each run (NORESEQ)
- The modules are not automatically punched each time they are accessed (NOPUNCH)
- The modules are not automatically flagged for subsequent execution when they are accessed (NOEXEC)
- The modules are not automatically listed each time they are accessed (NOLIST)

```
-OPT INIT,DISK,NORESEQ,NOLIST,NOPUNCH,NOEXEC,SEQ=/81,8,10,10/
```

- As for the previous form, except that the sequence numbers will be placed outside the normal 80 data columns (useful when data uses the full 80 columns)

Note 1
The default value of CYL=1 is provided if the "CYL=" parameter is not given by user. No other parameters have defaults.

Note 2
The user does not need to specify the blocksize for the masterfile, a suitable blocksize will be provided within the procedure.

Note 3
Users are reminded that there is no longer any need to reserve their LIBRARIAN data sets.

Note 4
After the successful execution of this create job, the LIBRARIAN masterfile will have been created, catalogued and be available for use in TSO and/or batch.

Examples

1. Create a LIBRARIAN masterfile SYSU.MYMAST (2 cylinders) on USER01. Provide a default sequencing in columns 81-88 (as previously described)

```
//         JOB(your job card)
//  EXEC  LIBCREA,A='SYSU.MYMAST',E=USER01,CYL=2
//SYSIN  DD  *
-OPT INIT,DISK,NORESEQ,NOPUNCH,NOEXEC,NOLIST,SEQ=/81,8,10,10/
/*
```

2. Create a LIBRARIAN masterfile TSOABC.MAST1 (1 cylinder) on USER02.
Provide a default sequencing in columns 73-80 (as previously described).

```
//         JOB(your job card)
//  EXEC LIBCREA,'A=TSOABC.MAST1',E=USER02
//SYSIN   DD  *
-OPT INIT,DISK,NORESEQ,NOPUNCH,NOEXEC,NOLIST,SEQ=/73,8,10,10/
/*
```

General Notes Concerning LIBRARIAN

The LIBRARIAN system is designed for the storage of large sets of programs/data etc. It provides techniques for the integrated storage of such large sets. Facilities are provided for keeping specific note of all enhancements made with relevant dates and times. For testing of various modules of large software systems, where it is necessary to keep an "audit trail" of all modifications made, it provides good facilities. LIBRARIAN is not, however, recommended for use for storing small sets of data and programs. With the advent of the DMS system, the former useful back-up facilities of LIBRARIAN are superseeded by the vastly superior facilities provided by DMS using ordinary sequential or partitioned data sets.

For existing masterfiles which have been previously created on 3330-11 disks and now transferred to 3350 disks, the exisiting blocking of 6444 bytes is not very suitable. Details of how existing LIBRARIAN masterfiles may be converted to use a more suitable blocksize will be given in the near future in a Newsletter article.

DMS NOTE

M. Dowell

In the conversion operation from the old disk drives to the new 3350 user disks, which took place on 29th June 1981, data sets were copied from the old user disks (USEROA, USEROB,...) to either: a) the new user disk (USER01, USER02,...)
or : b) magnetic tape.

Data sets were copied to magnetic tape for one of the following reasons:

a) They had not been accessed (either written to or read from) for more than 90 days.

b) They were not cataloged.

c) Their names did not fit into the standard naming convention (TSOyxz.--- or SYSU.--- or USER.---)

In the event of a user wishing to restore one of these data sets from magnetic tape, the following points must be noticed:

1) The DRESTORE (TSO command or batch procedure) feature, which has been described in Newsletter N. 52 (June 1981), should be used to obtain a version of the data set on disk.

2) Because the data set was put to magnetic tape from one of the old user disks (USEROA,...), it is not possible to omit the VOL( ) or VOL= parameter.
The VOL( ) or VOL= parameter must be given specifying one of the new disk volumes USER01, USER02,...

3) If the data set had a name which did not conform to the standard naming conventions then the NEWNAME( ) or NEWNAME= parameter must also be used to specfy a name within the naming convention.

Note. Data sets will automatically be catalogued by DRESTORE and so all data sets will be catalogued after a successful DRESTORE.

Example 1

For data set TSOXYZ.TEST.FORT which was archived to tape from USER0C because it had not been used for more than 90 days, the following DRESTORE TSO command (when logged on under TSOXYZ) may be used to request the restore of the data set to disk USER03

```
DRESTORE TEST.FORT VOL(USER03)
```

Example 2

For a data set which was previously named XYZABC1 (i.e. did not have a name which conformed to the naming conventions), the restore using the batch DRESTORE procedure and to name the data set USER.XYZABC1 on disk USER05, the following job may be used:

```
//          JOB(your job card)
$      CLASS B
//      EXEC DRESTORE
//SYSIN    DD  *
DRESTORE    DSN=XYZABC1,VOL=USER05,
            NEWN=USER.XYZABC1
/*
```

* * * * *

The article describing the formats of the output of the LISTDMS, LISTREQ and DSUTIL procedure, originally planned for this issue, will now be given in the September issue of the Newsletter.

ERRATA CORRIGE

1. There is an error on page 12 of the Newsletter No. 52 (June 1981). The information regarding the restoring of data sets using the DRESTORE procedure in TSO with the NEWNAME and VOL parameters (example 7) is incorrect for case b). If the data set being restored already exists on the volume to the used for the restore, then this data set is left unaffected by the DRESTORE and the version from the magnetic tape archives is created with the NEWNAME on the same disk.
   Thus, the corrected version of example 7 should read:

   7. **DRESTORE VENUS.DATA VOL(USER02) NEWNAME(MARS.DATA)**

   This example may have three different effects:

   a) If VENUS.DATA does not exist on disk
      then a copy of the latest archive version of VENUS.DATA is created on disk USER02. This copy is named MARS.DATA.

   b) If VENUS.DATA exists on USER02
      then this data set remains unaltered. The archieve version is copied to data to another data set named MARS.DATA.
      Thus, after the DRESTORE, both VENUS.DATA and MARS.DATA will exist on disk.

   c) If VENUS.DATA exists on a disk other than USER02
      then a copy of this latest archive version of data set VENUS.DATA is created on USER02. This copy is named MARS.DATA. The copy of VENUS.DATA on the other disk remains as before.

   (N.B. All users of name VENUS.DATA & MARS.DATA imply a name TSOABC.--- when using TSO userid TSOABC).

2. There is an error on page 25 of the Newsletter No. 52 (June 1981). The general form of the DSUTIL should show the need to use the "$ CLASS B" HASP control card when running DSUTIL.
   The general form should be:

```
//          JOB(your job card)
$      CLASS B
//DSUTIL  EXEC DSUTIL
//SYSIN     DD *
.
.       Selection commands
.
/*
```

   Also, the examples given on page 26 of the use of DSUTIL have an incorrect form of the "$ CLASS B" card.
   The $ must be in column 1.
   The C of the card CLASS must be in column 7.
   The B must be in column 13.

3. On pages 17, 20 and 23 of the Newsletter N. 52 (June 1981), all of the jobs showing the general forms and examples of use of DRESTORE, DARCHIVE and LISTDMS should contain a "$ CLASS B" card directly following the job card. This should be included because in certain circumstances the job for archive, restore or DMS list requires more than 100K bytes of store.
Therefore, the general form of the jobs should be:

General Form of DARCHIVE Job

```
//          JOB(your job card)
$      CLASS B
//DARCHIVE  EXEC DARCHIVE
//SYSIN       DD *
.
.
.          DARCHIVE commands
.
.
/*
```

General Form of DRESTORE Job

```
//          JOB(your job card)
$      CLASS B
//DRESTORE  EXEC DRESTORE
//SYSIN       DD *
.
.
.          DRESTORE commands
.
.
/*
```

General Form of a LISTDMS Job

```
//          JOB(your job card)
$      CLASS B
//LISTDMS   EXEC LISTDMS
//SYSIN     DD *
.
.
.          LISTDMS commands
.
.
/*
```

NEW EASY GRAPHICS ROUTINES

Michiel de Wolde (stagiaire visiteur)

The Easy Graphics collection is a set of routines to produce two-dimensional graphs of a good quality, without requiring a profound knowledge of the graphic system. The general characteristics of these routines are:

- The name starts with X.
- All displacements of origins for a new image area are automatically handled. The programmer does not need to plan the actual placement on the drawing surface.
- The pictures are automatically numbered.
- The calling sequences are simple.
- Application of additional routines for more sophisticated graphic output remains possible.
- The quality is largely sufficient for direct reproduction in reports and manuals.

A number of these routines have already been described in the Green Book "JRC Computer Graphics". Here, additional routines are presented for "curve fitting" (i.e. the computing and drawing of a function which approximates a set of given values).
Since this fitting is possible in more than one way, an arbitrary choice has been made, resulting in three different approaches to the problem.

1) Most common needs are covered by finding the best fitting polynomial. The set of points has to be approximated as closely as possible by a polynomial which is as smooth as possible. Since these two requirements conflict, the user has to find a balance between them by specifying the degree of the polynomial. If the chosen degree is too low the approximation will be poor; if it is too high the fit will be too close to the points, following the random errors and having unwanted fluctuations between the points.
   Normally one starts with a degree of 5 to 6 deciding upon the produced picture if the degree should be lower or higher.
   Note that the degrees 0, 1 and 2 respectively corresponds with a horizontal straight line (whose ordinate value is the mean value of the data), a straight line and a parabola. The associated routines are XFIT4, XFIT5, XFIT and XCOEF.

2) When the curve represented by the data points is of complicated form, perhaps with several peaks, a single polynomial will not be able to follow the rapid changes. In this case the set of points may be segmented by specifying abscissa values, or knots, representing the boundaries of the segments.
   It is advisable to start with a small number of knots and, examining the fit graphically at each stage, to add a few knots at places where the fit is particularly poor. Moving existing knots to such regions can also improve the results.

The invoked routine produces a cubic polynomial for each segment joining the ends with continuity in first and second derivatives in order to keep the curve smooth.
However, this smoothness can be affected by using multiple knots: if 2 equal knots are supplied the curve and its first derivative are continuous, if the multiplicity is 3 then only the curve is continuous and if the maximum of multiplicity 4 is reached the curve can be even discontinuous. The associated routines are XSPLI4, XSPLI5 and XSPLI.

Sometimes special functions are needed to fit particular sets of data points.
Presently only routines to fit a Gaussian function, or error function, are available. Two different types of data can be treated: if the data points are classified, that is the ordinate values are the number of times that a condition represented by the abscissa value was satisfied, a direct call to XGAUS4, XGAUS5 or XGAUS is possible. The data set consists of two vectors with the abscissa and ordinate values and represent already a rudimentary Gaussian function.
If the data points are not classified and consists of an unique vector containing for example a series of measurements, first a call to XPRE must be made. XPRE classifies the series values in A, by the user specified, number of intervals. It returns a vector with the mean values of each interval and a vector containing the number of elements in each interval. Then a call to XGAUS4, XGAUS5 or XGAUS can be made using these vectors. The associated routines are XGAUS5, XGAUS5, XGAUS, XPRE and XINFO.

Conventions in the following routines

- The variables X,Y,N,K,L,KM are always defined in the same way:

X : Vector containing the abscissa values of the data points. The values must be in non-decreasing order, but they need not be equidistant.
Y : Vector containing the ordinate values. Multiple ordinate values for one abscissa value are possible.
N : Number of coordinate pairs. A maximum of 100 is possible.
K : K=-1 x-axis logarithmic, y-axis logarithmic.
K=0 x-axis linear, y-axis linear.
K=1 x-axis logarithmic, y-axis linear.
K=2 x-axis linear, y-axis logarithmic.
L : L=0 a horizontal graph is produced.
L=1 a vertical graph is produced.
KM : KM=0 only the curve is drawn.
KM=1 the curve is drawn, the points are represented by symbols.
If more than one set of points is represented in the same graph, different symbols are automatically used.

- The Fortran naming convention is respected.
- The variables on input of a routine are unchanged on exit except in the routine XPRE where the array A is sorted by algebraic value.

XFIT4 (X,Y,N,K,L,M,KM)
The best fitting polynomial is drawn.
An A4 format graph is produced.
M: Degree of the requested polynomial.

XFIT5 (X,Y,N,K,L,M,KM)
The best fitting polynomial is drawn.
An A5 format graph is produced.
M: Degree of the requested polynomial.

XFIT (X,Y,N,M,KM)
The best fitting polynomial is drawn.
M: Degree of the requested polynomial.
The curve and possibly the points are added to the latest graph as set up by one of the X-collection routines.

XCOEF (G)
The coefficient of the latest calculated polynomial are returned.
G: Vector of length M+1 where M is the degree of the polynomail as specified in the latest call to XFIT4, XFIT5 or XFIT. On exit G contains the coefficients in order of the decreasing powers of X.

XSPLI4 (X,Y,N,K,L,A,NA,KM,KL)
The best fitting cubic spline is drawn.
An A4 format graph is produced.
A: Vector of length NA containing the knots. The knots must be in non-decreasing order.
NA: Number of knots. A maximum of 20 is possible.
KL: If KL=1 the knots are represented by vertical broken lines.

XSPLI5 (X,Y,N,K,L,A,NA,KM,KL)
The best fitting cubic spline is drawn.
An A5 format graph is produced.
A: Vector of length NA containing the knots. The knots must be in non-decreasing order.
NA: Number of knots. A maximum of 20 is possible.
KL: If KL=1 the knots are represented by vertical broken lines.

XSPLI (X,Y,A,NA,KM,KL)
The best fitting cubic spline is drawn.
A: Vector of length NA containing the knots. The knots must be in non-decreasing order.
NA: Number of knots. A maximum of 20 is possible.
KL: If KL=1 the knots are represented by vertical broken lines.
The curve and possibly the points are added to the latest graph as set up by one of the X-collection routines.

XGAUS4 (X,Y,N,K,L,KM)
The best fitting Gaussian function is drawn.
An A4 format graph is produced.

XGAUS5 (X,Y,N,K,L,KM)
The best fitting Gaussian function is drawn.
An A5 format graph is produced.

XGAUS (X,Y,N,KM)
The best fitting Gaussian function is drawn.
The curve and possibly the points are added to the latest graph as set up by one of the X-collection routines.

XPRE (A,NA,X,Y,N)
Classification of a set of values to prepare them for a call to XGAUS4, XGAUS5 or XGAUS.
A : (input) Vector of length NA containing the values. On exit the values are sorted on algebraic value.
NA : (input) Number of values. A maximum of 400 is possible.
X : (output) Vector of length N. On exit X contains the mean values of each interval.
Y : (output) Vector of length N. On exit X contains the number of elements of each interval.
N : (input) Number of interval.
The variable X,Y and N can subsequently be used directly in a call to XGAUS4, XGAUS5 or XGAUS.

XINFO (T,U)
The standard deviation and the mean value associated with the latest Gaussian function are returned.
T : Standard deviation.
U : Mean value.
Calling XINFO has only meaning after a call to XGAUS4, XGAUS5 or XGAUS.

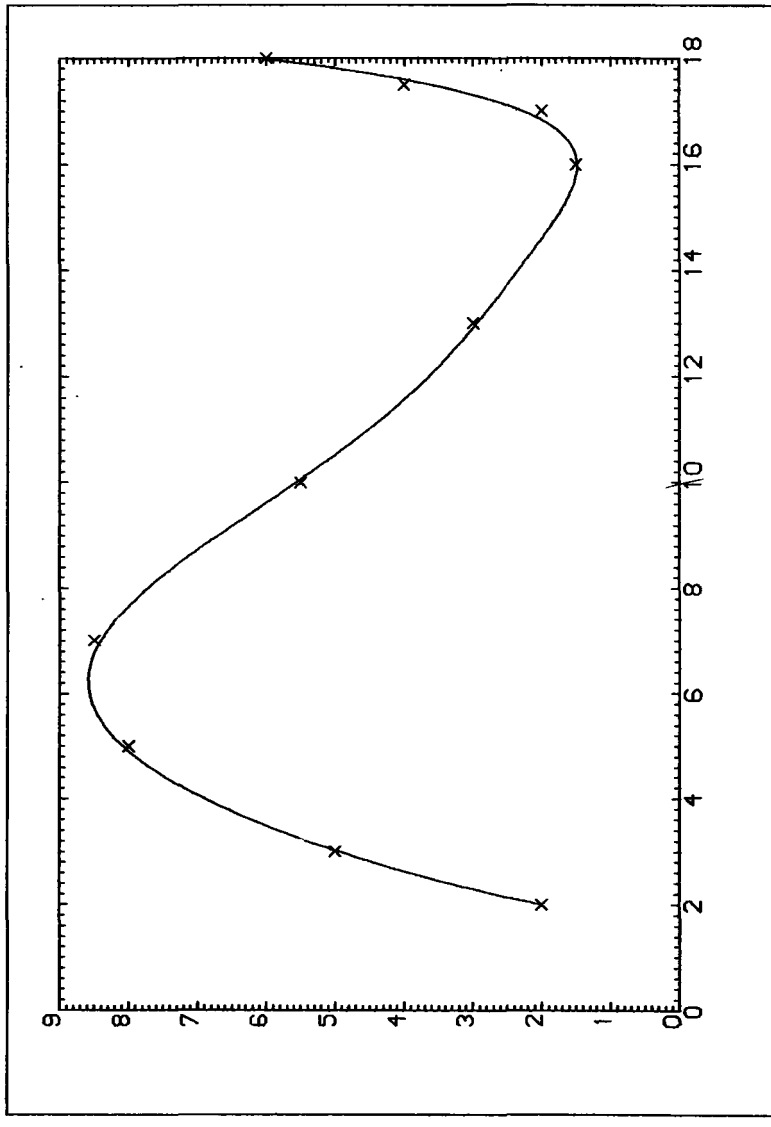
Error messages

Due to erroneous use of the described routines a NAG error message c
the nu

name	error nr	meaning
E02ADE	2	The abscissa values are not in non-decreasing order.
	3	All the abscissa values have the same value.
	4	The requested degree is negative or the number of distinct X values is not greater than the requested degree.
E02BAE	1	The knots are not in non-decreasing order or do not lie between the smallest and the greatest abscissa value of the set of data points.
	3	The abscissa values are not in non-decreasing order.
	4	The number of knots is negative or the number of distinct abscissa values do not outnumber the number of knots at least 4.
	5	There are regions containing too many knots compared with the data points.

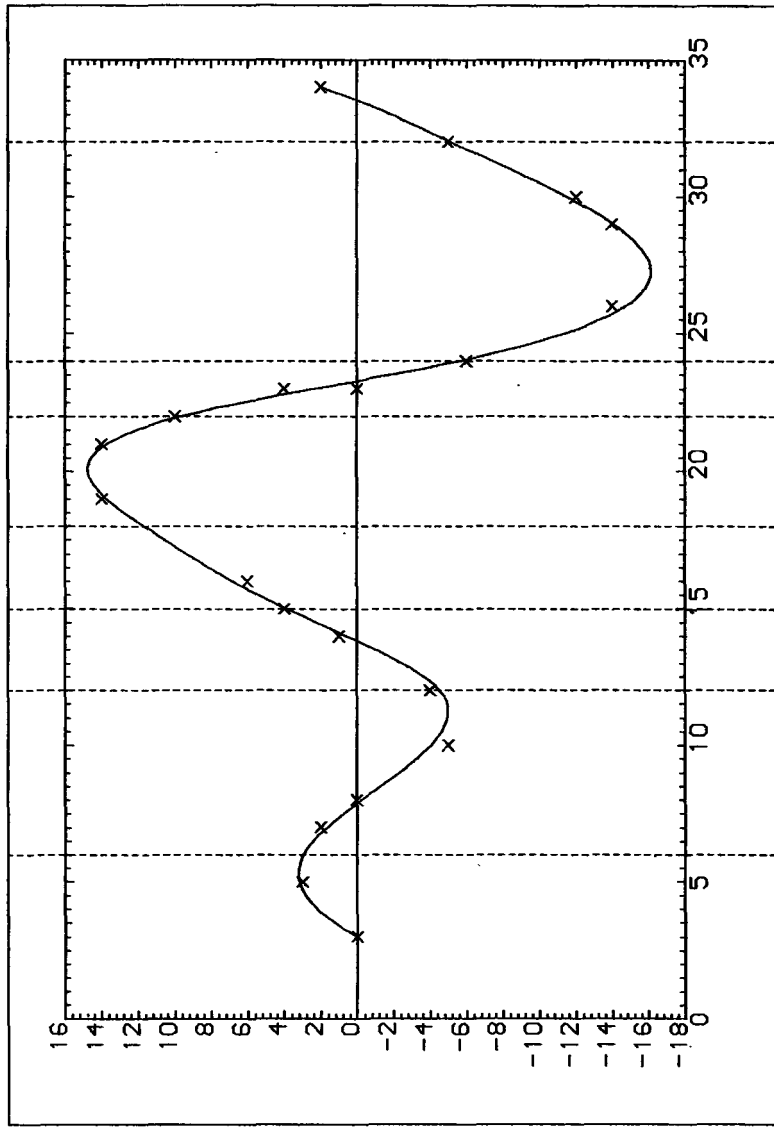
Example to demonstrate the use of XFIT5

A set of 10 points, visible in figure 1, is given. The curve represented by the points is not of complicated form, so use a polynomial of degree 5 or 6. Chosen the degree 5 we see that the points (7,8.5) through (17,2) are poor approximated, thus a higher degree should be used. Figure 1 is the result of using the degree 7.



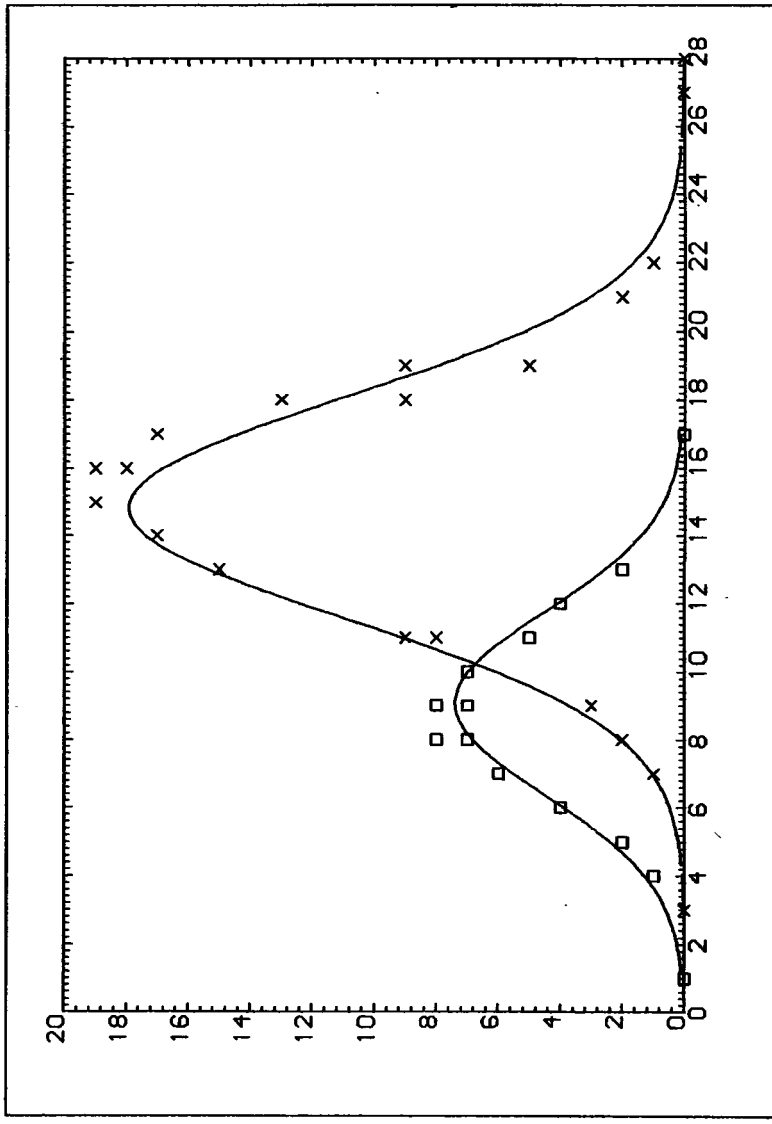
Example to demonstrate the use of XSPLI5

The 20 points in figure 2 represent a curve which is too complicated to be approximately by a polynomial. A cubic spline should be used, first with a few knots. Using the knots 8.0, 14.0 and 23.0 gives a bad result. Add or change some knots: the knots 8.0, 12.0, 15.0, 22.0, 24.0 and 32.0 give a better but still poor approximation.
Finally with the knots 6.0, 12.0, 15.0, 18.0, 22.0, 24.0 and 32.0 the graph visible in figure 2 is obtained.



Example to demonstrate the use of XGAUS5

Two Gaussian curves have been fitted to the two sets of data shown in figure 3.



Example Program to Produce Figures 1, 2 and 3

```
      C PROGRAM FOR THREE TEST EXAMPLES
            DIMENSION X1(10),Y1(10),X2(20),Y2(20),X3(20),Y3(20),X4(14),Y4(14),
           &A(7)
      C DATA DEFINITIONS
            DATA X1/2.0,3.0,5.0,7.0,10.0,13.0,16.0,17.0,17.5,18.0/
            DATA Y1/2.0,5.0,8.0,8.5,5.5,3.0,1.5,2.0,4.0,6.0/
            DATA X2/3.0,5.0,7.0,8.0,10.0,12.0,14.0,15.0,16.0,19.0,
           &21.0,22.0,23.0,24.0,26.0,29.0,30.0,32.0,34.0/
            DATA Y2/0.0,3.0,2.0,0.0,-5.0,-4.0,1.0,4.0,6.0,14.0,
           &14.0,10.0,4.0,0.0,-6.0,-14.0,-14.0,-12.0,-5.0,2.0/
            DATA X3/3.0,7.0,8.0,9.0,11.0,11.0,13.0,14.0,15.0,16.0,
           &16.0,17.0,18.0,18.0,19.0,19.0,21.0,22.0,27.0,28.0/
            DATA Y3/0.0,1.0,2.0,3.0,8.0,9.0,15.0,17.0,19.0,18.0,
           &19.0,17.0,13.0,9.0,9.0,5.0,2.0,1.0,0.0,0.0/
            DATA X4/1.0,4.0,5.0,6.0,7.0,8.0,8.0,9.0,9.0,10.0,
           &11.0,12.0,13.0,17.0/
            DATA Y4/0.0,1.0,2.0,4.0,6.0,7.0,8.0,7.0,8.0,7.0,
           &5.0,4.0,2.0,0.0/
            DATA A/7.0,12.0,15.0,18.0,22.0,24.0,32.0/
      C START OF PROGRAM
            CALL GSTART
      C FOR FIGURE 1
            CALL XFITS(X1,Y1,10,0,0,7,1)
      C FOR FIGURE 2
            CALL XSPLIS(X2,Y2,20,0,0,A,7,1,1)
      C FOR FIGURE 3
            CALL XGAUSS(X3,Y3,20,0,0,1)
            CALL XGAUS(X4,Y4,14,1)
      C END OF PROGRAM
            CALL GEND
            STOP
            END
```

STATISTICS OF COMPUTING INSTALLATION UTILIZATION.
REPORT OF COMPUTING INSTALLATION EXPLOITATION
FOR THE MONTH OF JUNE 1981.

	YEAR 1980	YEAR 1981
General		
Number of working days	21 d	21 d
Work hours from 8.00 to 24.00 for	16.00h	16.00h
Duration of scheduled maintenance	21.00h	17.50h
Duration of unexpected maintenance	26.34h	18.84h**
Total maintenance time	47.34h	36.34h
Total exploitation time	311.16h+	303.66h++
CPU time in problem mode	192.38h	351.32h*
Batch Processing		
Number of jobs	7526	7865
Number of cards input	1165000	413000
Number of lines printed	23516000	24878000
Number of cards punched	324500	29800
CPU Time	168.01h	305.75h*
Number of I/O (Disks)	19170000	23660000
Number of I/O (Magnetic tape)	3096000	3435000
T.S.O.		
Number of LOGON's	3760	4774
Number of messages sent by terminals	272346	328900
Number of messages received by terminals	1702260	1968000
CPU time	22.30h	39.12h*
Number of I/O (Disk)	3174700	4651000
Connect time	2941.38h	3314.83h
ADABAS		
Total time service is available	-	158.24h
CPU time	-	3.75h*
Number of I/O (Disk)	-	1149000
IMS		
Total time service is available	95.70h	119.37h
CPU time	2.07h	2.70h*
Number of I/O (Disk)	459000	425000

* Real CPU has been multiplied by a factor of 2 to indicate the increased throughput of the AMDAHL.

** Covering all the configuration.

\+ Including 22.50hrs overtime.

++ Including 8.00hrs overtime.

UTILIZATION OF COMPUTING CENTRE BY OBJECTIVES & APPROPRIATION ACCOUNTS FOR THE MONTH OF JUNE 1981.

		AMDAHL 470/V7A work units in hours
33001	Reactor Safety	408.65
33002	Plutonium Fuel and Actinide Research	-
33003	Safety of Nulcear Materials	1.47
33004	Fissile Materials Control and Management	5.28
33005	Super-SARA Test Programme SSTP	54.55
33011	Solar Energy	11.76
33012	Hydrogen Production, Energy Storage and Transport	-
33013	Thermonuclear Fusion Technology	27.03
33014	High Temperature Materials	5.89
33021	Protection of the Environment	18.28
33022	Remote Sensing from Space	5.10
33041	Informatics	33.68
33043	Support to the Community - Bureau of References	2.41
33044	Training and Education	-
33046	Provision of Scientific and Technical Services	10.60
1.20.1 1.20.2	General Administration - JRC General Services - Administration - Ispra	52.94
1.20.3	General Services - Technical - Ispra	0.57
1.30.0	Central Workshop Ispra	2.14
1.40.2	ESSOR	2.57
	TOTAL	642.92
1.94.0	Services to External Users	3.81
	TOTAL	646.73

BATCH PROCESSING DISTRIBUTED BY REQUESTED CORE MEMORY SIZE

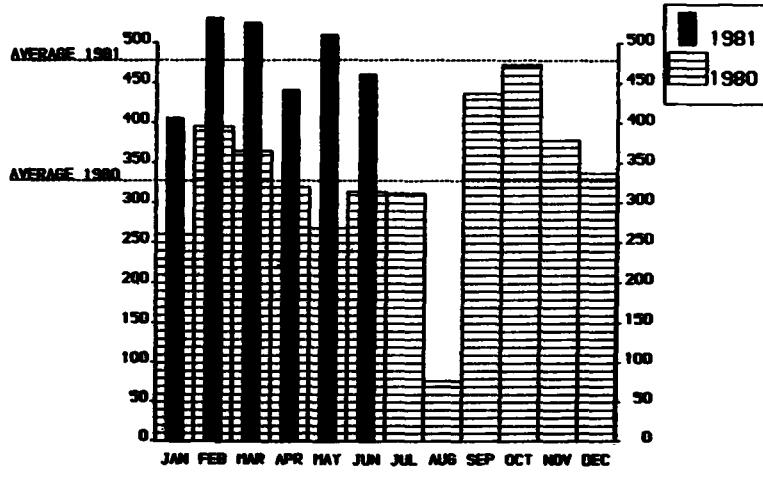
	100 k	200 k	300 k	400 k	600 k	800 k	1000 k	1200 k	1400 k	1400 > k
No. of jobs	2247	1859	930	1379	702	104	112	46	2	69
Elapsed time	61	135	131	257	191	19	80	26	0.5	22
CPU time	6.3	26.5	38.4	54.6	99.3	5.1	51.6	7.9	0.1	15.2
"Equiv" time	12	52	59	116	115	9	56	14	0.1	18
"Turn" time	0.4	1.0	1.5	2.5	3.3	3.0	3.4	4.5	4.1	7.0
I/O (disk)	1445	3491	2794	8540	2040	594	602	903	2	394
I/O tape	1925	307	197	516	335	1	67	34	1	13

NOTE.
All times are in hours.
"Equiv" means equivalent.
"Turn" means turn around.
All I/O transfers are measured in 1000's.

PERCENTAGE OF JOBS FINISHED IN LESS THAN:

TIME	15mn	30mn	1hr	2hrs	4hrs	8hrs	1day	2day	3day	6day
%year 1980	26	39	53	65	78	90	98	100	100	100
%year 1981	41	56	68	80	92	98	100	100	100	100

HISTOGRAM OF TOTAL EQUIVALENT TIME(HRS)



Projected total for 1981 = 5748 Hours(using average)

Total for 1980 was = 3936 Hours

REFERENCES TO THE PERSONNEL/FUNCTIONS OF THE COMPUTING CENTRE

			Room	Tel.
Manager of the Computing Centre		J. Pire		
Responsible for User Registration	Ms.	G. Rambs		
Operations Sector				
Responsible for the Computer Room		A. Binda-Rossetti		
Substituted in case of absence by:				
Responsible for Peripherals		G. Nocera		
Systems Software Sector				
Responsible for the sector		D. König		
Substituted in case of abscence by:		P.A. Moinil		
Responsible for TSO Registration		C. Daolio		
Informatics Support Sector				
Responsible for the Sector	(f.f.)	H. de Wolde	1883	787
Secretary	Ms.	G. Hudry	1873	787
Responsible for User Support		M. Dowell	1886	701
General Inf./Support Library	Ms.	A. Cambon	1871	730
Advisory Service /List of Consultants(See Note 1)			1870	730

A. Inzaghi — H. I. de Wolde
A. A. Pollicini
R. Meelhuysen — M. Dowell

Note 1. The advisory service is available in the same room as the Computing Support Library (room 1870). Exact details of the advisory service times for a specific week can be found at the head of any output listing (for that week).
Any informatics problem may be raised. However, the service is not designed to help users with problems which are their sole responsability. For example, debugging of the logic of programs and requests for information which can easily be retrieved from available documentation.
If necessary, other competent personnel from the informatics division may be contacted by the consultant but not directly by the users.
The users should only contact the person who is the consultant for that specific day and only during the specific hours.
Outside the specific hours general information may be requested from Ms. A. Cambon in the Computing Support Library.

HOW TO OBTAIN COMPUTING CENTRE DOCUMENTATION

Person interested in receiving copies of the Computing Centre "green books" or in receiving regularly the "Computing Centre Newsletter" are requested to complete the appropriate part of the following form and send it to:

Ms. A. Cambon

Support to Computing

Building 36

Tel. 730.

Indicate with a (V) which option are required.

Please add my name to Newsletter mailing list ( )

Please send me copies of the following "green books":

JRC-TSO Primer ( )

JRC Computer Graphics (new version) ( )

Towards a New Programming Style ( )

LIBRARIAN ( )

NAME .....

ADDRESS .....

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TELEPHONE .....