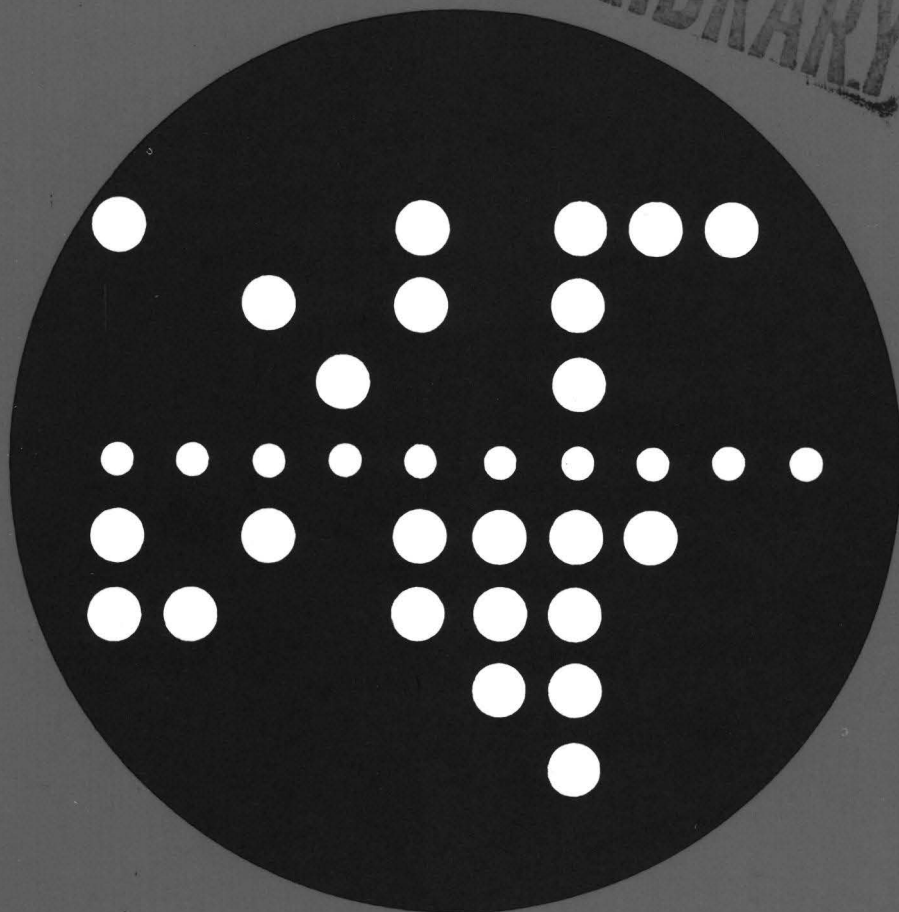


# COMPUTING CENTRE NEWSLETTER

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LIBRARY



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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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# DMS FACILITIES

M. Dowell

## 1. Introduction

In the article entitled "Disk Management System" in the May edition of the Newsletter details were given of the changes which users might have to make to data set names, catalog entries, procedure usage, etc. before the introduction of the DMS system.

In this article important other information concerning the introduction of DMS (and also the new 3350 disks (see article in this Newsletter, page 27) is given.

This information may be split up into three sections which may be described as follows:

- a) the changes which will occur on 29th June 1981 due to the introduction of the new 3350 user disks and the withdrawal of the old 3330-model 11 user disks.
- b) information concerning the changes which users must make (on and after 29th June 1981) to enable the efficient usage of the 3350 disks.
- c) information about the use of the DMS system (which will be in service on and from the 29th June 1981).

Although this may seem to imply a long and complicated list of changes, in fact from the users point of view the changes which they will need to make will be minimal.

The benefits, however, will be considerable; from the point of view of security of information, availability of disk space and simplification of use of the system.

## 2. Introduction of New User Disks

On the morning of Monday 29th June 1981, before the start of the normal system, the DMS system will be made available for general use.

User data sets residing on the present user disks (USEROA, USEROB,...) will be copied, either:

- a) To the new 3350 user disks (USERO1, USERO2,...)  
(for those data sets which have been accessed (i.e. read or written) in the last 3 months)
- b) In secure form to the DMS magnetic tape archives  
(for those data sets which have not been accessed in the last 3 months)

After this time the user disks USEROA, USEROB,... will no longer be available for use.

At the time of copying changes in the blocksize of certain data sets and in the primary and secondary allocations will occur.

The blocksize changes will be as follows:

For the data sets of type FB,VB,FBA,VBA,FBM,VBM the data sets will be re-blocked. In particular, data sets used for storing programs and data on TSO (normally RECFM=FB, BLKSIZE=3120, LRECL=80) will be re-blocked to be RECFM=FB, BLKSIZE=4560, LRECL=80). This will be performed to allow more efficient utilization of the tracklength of the 3350 disks. All other types of data set will be copied without any re-blocking.

At the time of copying a "compress" type action will take place to optimize the use of disk space. This will not have any adverse effects on any of the users data sets.

### 3. User Changes following the Conversion

User should take note of the following changes which they must make, on and from the 29th June 1981.

- a) There will no longer be any need to reserve data sets.  
(Thus, the TSO commands RESIN, CREA, RENRES, RENRESCT and the batch procedure EURUDR & EURUDL will no longer be available).  
Instead, TSO users will simply use the CREA procedure to create a data set on the user disks and batch users may simply create the data set in the appropriate job step (taking note of the naming conventions and the need to catalog the data set as described in the article "Disk Management System" in the May Newsletter).
- b) The default blocksize for the CREA command has been changed to 4560 bytes (instead of the previous value of 3120 bytes).  
All normal FB type data sets used for storing programs and data should make use of this default (also for batch creation).
- c) The user may select the disk volume for creation of a data set from any of the available 3350 user disks (USER01, USER02, USER03, USER04, USER05, USER06).  
User disks USER0A, USER0B, ... will no longer be available.
- d) New load module libraries of programs and subroutines (RECFM=U) created on or after the 29th June 1981 should use a blocksize of 9442 bytes.  
This value should be used instead of the previously recommended value of 13030 bytes which is particularly wasteful in track space utilization for the 3350 disks. Existing load module library data sets will be copied to the new 3350 disks on 29th June 1981 retaining their blocksize of 13030 bytes. However, we hope to provide a mechanism to enable the change of blocksize for these existing sets from 13030 bytes to 9442 bytes in the very near future.

Note. The OS expiration date (OSEXPDT) must not be used when creating a data set on the user disks.

#### 4. Use of the DMS System

For most users the DMS system will be very simple to use. It will provide them with a security back-up system on magnetic tape, in most cases without any effort at all on their part.

There will no longer be any need for reservation of data sets, and because of the housekeeping and organizational facilities of DMS, there will generally be more available disk space.

The following automatic features (without any user intervention) will apply:

- \* Every working morning before the start of user work a back-up copy, to magnetic tape, will be taken of all user data sets which were created or modified in the previous day. The back-up copy will be taken simultaneously onto two magnetic tapes for added security. (This back-up copying will occur automatically and requires no action on the part of the user).
- \* If there is a shortage of disk space on the user disks, then user data sets which have not been accessed (i.e. either read or written) for a long time (normally for months) will be archived by the DMS system from disk to magnetic tape. This will create more available space for users with regular use of disk data sets.
- \* Automatic compressing of user partitioned data sets will take place at regular intervals.

Therefore, users who regularly access their data sets will have the advantages of security of their data sets and a better system for ensuring that there will always be spare disk space on the user disks.

For users who wish to make fuller use of the facilities of DMS there are a number of user-available TSO commands and batch procedures which allow extra options such as:

- \* Making an archive copy of a data set at a particular stage of development, to be held in the magnetic tape archives (for a period of time specified by the user) along with the normal automatic back-up copy of the most recent version.
- \* Archive a data set to magnetic tape and delete the disk version. This enables the user to save disk space for data sets which are not expected to be used for some months.

- \* Restoring to disk an archive copy of a data set (either an old version previously archived or the most recent version which was automatically backed-up to magnetic tape and now is no longer on disk because it has not been used for a long period of time). In some cases it will also be possible to recover versions of a data set which have automatically been backed-up to magnetic tape on previous days in the current week.
- \* Recover from the magnetic tape archives a data set which has been "damaged" or erroneously deleted from disk by the user.
- \* List information about: the status of the user's data sets on disk, archive copies of the user's data sets, users requests for archive/restore.
- \* Cancel previously submitted archive/restore requests.

Note 1

For both batch and TSO usage archive/restore requests issued by the user will not be performed immediately but requests will be accumulated and performed in a subsequent batch job. The present planned policy is that user requested archives will be performed once per day, along with the automatic back-up run in the morning. User requested restores will be performed twice per day, once in the morning and once at lunch time.

Note 2

When data sets on disk have not been used for a long period of time they are, as previously stated, archived to magnetic tape. At this time these data sets are given a retention period of 270 days. After this period is completed, if the data sets have not been subsequently used (i.e. either read or written) by the user, then they will be deleted from the DMS archive.

Note 3

Data sets created on one particular user disk may not always remain on that disk. DMS can perform migration of user data sets from one user disk to another to give better disk utilization. As users will always access their data sets via the catalog, this movement is not likely to cause any problems.

Full details of the appropriate TSO and batch DMS facilities are given in the following sections.

## 5. DMS TSO Facilities

There are five TSO commands available for user requests to the DMS system:

- DARCHIVE - To perform a user-initiated archive to magnetic tape of a specified data set or list of data sets. (This is a deferred request).
- DRESTORE - To perform a user-initiated restore, from magnetic tape to disk, of a specified data set or a list of data sets. (This is a deferred request).
- LISTREQ - Produces a list of extant archive and restore requests for the user.
- LISTDMS - Produces a list of the status of a data set or a group of data sets stored on the DMS archives.
- DERASE - Cancel previously submitted archive/restore requests. (May only be used for data sets of the present userid)

Full details of each command, with examples, are given in the following sections.

### 5.1 TSO DARCHIVE

The DARCHIVE command enables a TSO user to request the deferred archival of data sets. This archival is not performed immediately but in a subsequent periodic batch run.

#### Syntax of the DARCHIVE Command

DARCHIVE (data-set-list)

[NEWNAME(data-set-name)]

[EXPDT(yyddd)  
RETPD(nnn)]

[NOCATALOG]

[NOSCRATCH]

(for full details of the syntax notation see the IBM manual: TSO Command Language Reference (GC28-6732)).



where:

**data-set-list**

specifies the name of the data set, or a list of names of data sets.

If the user specifies a list of data sets it must be enclosed within parantheses. (Generation data group data sets may be specified by either absolute or relative names).

**NEWNAME(data-set-name)**

this parameter may be utilized to change the name under which the archived data set will be carried in the DMS index.

**EXPDT(yyddd)**

designates the date on which the archived data set may be deleted from the archives.

**RETPD(nnnn)**

an alternative means of specifying the archive disposition by designating the number of days the data set is to be retained on the archive tapes after the DARCHIVE has been performed.

**NOCATALOG**

this parameter may be included to override the default action of uncataloging the data set at the time it is archived.

**NOSCRATCH**

this parameter may be included to override the default of scratching the data set after the completion of a successful archive.

Note 1. If neither EXPDT nor RETPD is specified, then RETPD(270) is assumed.

Note 2. The use of the OS expiration date (OSEXPDT) is not allowed.

Note 3. With the NOCATALOG and NOSCRATCH options specified, the copy of the data set on disk remains (and remains catalogued).

## Examples

### 1. DARCHIVE PROG.FORT

Archives the data set PROG.FORT (i.e. fully named TSOABC.PROG.FORT for a session using the TSO userid TSOABC).

The archival of the data set does not take place immediately, but in a subsequent periodic batch run.

The data set is erased from disk and the archived data set is given a 270 days retention period before expiration from the magnetic tape archives.

### 2. DARCHIVE (PROG1.FORT PIPPO.DATA)

As in example 1, except that two data sets PROG1.FORT and PIPPO.DATA are archived (i.e. TSOABC.PROG1.FORT and TSOABC.PIPPO.DATA).

### 3. DARCHIVE PLUTO.DATA NEWNAME(VENUS.DATA)

As in example 1, except that the name given to the data set on the archive tapes is VENUS.DATA (i.e. TSOABC.VENUS.DATA).

### 4. DARCHIVE PROG.FORT EXPDT(81335)

As in example 1, except that the expiration date given to the data set on the magnetic tape archives is the 335th day of 1981 (i.e. 1st December 1981).

### 5. DARCHIVE PROG.FORT RETPD(100)

As in example 1, except that the retention period given to the archived data set is 100 days (from the data of the archive).

### 6. DARCHIVE PROG.FORT NOSCRATCH NOCATALOG

As in example 1, except that after the successful archive, the data set will remain on disk (it is neither uncataloged nor scratched).

## 5.2 TSO DRESTORE

The DRESTORE command enables a TSO user to request the restore of previously archived data sets from the magnetic tape archives. This restore is not performed immediately but is subsequently performed in a periodic batch run.

### Syntax of the DRESTORE Command

DRESTORE (data-set-list)

```
[VOLUME(volser)]  
[NEWNAME(data-set-name)]  
[TIMEDATE(hhmmyyddd)]  
[SCRATCH]  
[ERASE]
```

(for full details of the syntax notation see the IBM manual: TSO Command Language Reference (GC28-6732)).

where:

#### **data-set-list**

specifies the name of the data set, or a list of names of data sets.

If the user specifies a list of the data sets it must be enclosed within a parentheses.

#### **VOLUME(volser)**

the volume serial of the device onto which the data set is to be restored. Omission of this parameter will result in the selection of the volume from which the data set was archived. This parameter should not normally be used. The default value is usually the most acceptable.

#### **NEWNAME(data-set-name)**

this parameter may be utilized to allow the name of the data set to be created on disk to be different from that specified in the data-set-list parameter.

**TIMEDATE(hhmm yyddd)**

when multiple versions of the same data set have been archived, this parameter may be used to specify the particular version to be restored, on the basis of the time (hhmm) and the date (yyddd) archived. See following specification of the LISTDMS command for details of how to find hhmm yyddd.

**SCRATCH**

normally an existing preallocation will be utilized by the restore function. However, the presence of the SCRATCH keyword will cause any existing preallocation to be scratched prior to the new allocation at the time of restore.

**ERASE**

normally a restore to a preallocated partitioned data set will leave intact those preexisting members which are not replaced. However, when this keyword is present the directory of a PDS will be initialized prior to the initiation of the restore function.

Examples**1. DRESTORE PROGX.FORT**

Restore the data set PROGX.FORT (i.e. fully named TSOABC.PROGX.FORT for a session using TSO userid TSOABC). The data set will normally be created on disk (on the same disk from which it was previously archived). If, however, a data set named TSOABC.PROGX.FORT has already been created on disk by the user, then this preallocation will be utilized.

If there are multiple versions of the data set on the DMS archive system, then the latest will be taken.

The retrieval of the data set will not take place immediately, but in a subsequent periodic batch run.

**2. DRESTORE (PROG1.FORT PIPPO.DATA)**

As in example 1, except that two data sets PROG1.FORT and PIPPO.DATA are restored (i.e. TSOABC.PROG1.FORT and TSOABC.PIPPO.DATA).

**3. DRESTORE VENUS.DATA NEWNAME(MARS.DATA)**

As in example 1, except the name given to the data set which is loaded to disk is MARS.DATA (i.e. TSOABC.MARS.DATA).

4. **DRESTORE PROGX.FORT TIMEDATE(164581121)**

As in example 1, except the version PROGX.FORT (i.e. TSOABC.PROGX.FORT) which was archived as the specified time and date is restored (16.45hrs on 1st May 1981).

5. **DRESTORE PROGS.FORT SCRATCH**

As in example 1, except that if a preallocation exists it will be scratched.

6. **DRESTORE PROGP.FORT ERASE**

As in example 1, except that for the data set PROGP.FORT (which must be partitioned), if the data set is preallocated, then the directory will be initialized prior to the loading from magnetic tape of the archive copy. Therefore, any existing information on a preallocated data will be overwritten by the DRESTORE with ERASE.

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 is overwritten by the previous archive version which is then renamed MARS.DATA.
- 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).

### 5.3 TSO LISTDMS

The LISTDMS command enables a TSO user to list information regarding data sets which has been archived or backed up by DMS.

#### Syntax of the LISTDMS Command

```
LISTDMS [ DATASET(data-set-list) ] [ STATUS  
        LEVEL(prefix) ] [ ALLOCATION ]
```

(for full details of the syntax notation see the IBM manual: TSO Command Language Reference (GC28-6732))

where:

#### **DATASET(data-set-list)**

specifies the name of the data set, or a list of names of data sets.

#### **LEVEL(prefix)**

a list of one or more prefixes for which information is desired. Only those data sets having the specified prefix will be selected. The character string specified does not have to coincide with an index node.

#### **STATUS**

displays the information which defines archived data set.

#### **ALLOCATION**

displays the allocation information for archived data sets.

Note. In the absence of both the DATASET and LEVEL keyword parameter, all data sets having the active userid will be selected.

#### Examples

##### 1. LISTDMS

Will list the STATUS information for all the DMS data sets for the active TSO userid.

##### 2. LISTDMS DATASET(PROGX.DATA)

As in example 1, except that the STATUS information is listed only for the one data set, PROGX.DATA (i.e. fully named TSOABC.PROGX.FORT for a session using TSO userid TSOABC).

### 3. LISTDMS ALLOCATION

As in example 1, except that the ALLOCATION information is produced.

### 4. LISTDMS LEVEL(TSOABC.XY)

As in example 1, except that only data sets with names beginning with the characters TSOABC.XY are considered (e.g. TSOABC.XY.FORT, TSOABC.XYZ.DATA, ...)

Note. The information produced by the STATUS and ALLOCATION keywords should be almost self-explanatory. However a full description of this output will be given in the July Newsletter.

### 5.4 TSO LISTREQ

The LISTREQ command enables the TSO user to display the status of previously submitted deferred archive and restore requests.

#### Syntax of the LISTREQ Command

```
LISTREQ [ DATASET(data-set-list) ] [ ARCHIVE  
RESTORE ]
```

(for full details of the syntax notation see the IBM manual: TSO Command Language Reference (GC28-6732)).

where:

#### **DATASET(data-set-list)**

specifies the name of the data set, or a list of names of data sets.

#### **ARCHIVE**

displays status information for deferred archive requests.

#### **RESTORE**

displays information for deferred restore requests.

Note. In the absence of the DATASET keyword parameter, all data sets having the active userid will be selected.

## Examples

### 1. LISTREQ

Will list the status of all deferred restore requests for the active TSO userid.

### 2. LISTREQ DATASET(PROGX.DATA)

As in example 1, except that the restore requests are listed for the one dta set, PROGX.DATA (i.e. fully named TSOABC.PROGX.FORT for a session using TSO userid TSOABC).

### 3. LISTREQ ARCHIVE

As in example 1, except that archive request are listed.

Note. The information produced should almost be self-explanatory. However, a full description of the output will be given in the July Newsletter.

## 5.5 TSO DERASE

The DERASE command enables a TSO user to delete previously submitted deferred archive and restore requests.

### Syntax of the DERASE Command

DERASE DATASET(data-set-list)

ARCHIVE
RESTORE

(for full details of the syntax notation see the IBM manual: TSO Command Language Reference (GC28-6732)).

where:

#### **DATASET(data-set-list)**

specifies the list of one or more names of data sets for which deferred processing request records are to be deleted.

#### **ARCHIVE**

designates that archive requests having the specified data set names should be deleted.

#### **RESTORE**

designates that restore requests having the specified data set names should be deleted.



Note 1. As may be seen from the syntax, ARCHIVE and RESTORE are mutually exclusive options.

Note 2. It is, obviously, only possible to use the DERASE command for request in the period of time between their issue and the deferred request taking place.

### Examples

1. **DERASE XYZ.FORT**

Erase an outstanding restore request for data set XYZ.FORT (i.e. fully named TSOABC.XYZ.FORT for a session using TSO userid TSOABC).

2. **DERASE PIPPO.DATA ARCHIVE**

Erase an outstanding archive request for data set PIPPO.FORT (i.e. fully named TSOABC.PIPPO.DATA for a session using TSO userid TSOABC).

## 6. DMS Batch Facilities

There are four batch procedures available for user requests to the DMS system.

DARCHIVE	To perform a user initiated archive, to magnetic tape, of a data set. (This is a deferred request).
DRESTORE	To perform a user initiated restore, from magnetic tape to disk, of a specified data set. (This is a deferred request).
LISTMDS	Produces details of the status of data sets, or group of data sets on the DMS system.
DSUTIL	Produces details of the users' disk resident data sets.

Full details of these procedures, with examples, are given in the following sections.

### 6.1 Batch DARCHIVE Procedure

The batch DARCHIVE procedure enables a batch user to request the deferred archival of a data set. This archive is not performed immediately but in a subsequent periodic batch run.

#### General Form of DARCHIVE Job

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

where each DARCHIVE command has the form:

```
DARCHIVE DSNAME=data-set-name,NEWNAME=data-set-name,
RETPD=nnnn,EXPDT=yyddd,NOCATALOG,NOSCRATCH
```

where:

**DSNAME=data-set-name**

specifies the name of the data set to be archived  
(the full name must be given)

**NEWNAME=data-set-name**

this parameter may be utilized to change the name under  
which the archived data set will be carried in the DMS  
index.

**RETPD=nnnn**

designates the number of days the data set is to be  
retained on the archive tapes after the DARCHIVE has  
been performed.

**EXPDT=yyddd**

an expiration date in Julian format (yyddd) which may be  
used as an alternative way to specify a retention  
period.

**NOCATALOG**

may be included to override the default action of  
uncataloging the data set at the time of archival.

**NOSCRATCH**

may be included to override the default action of  
scratching the data set after the completion of a  
successful archive.

Notes on format of the DARCHIVE commands

1. DARCHIVE command should be coded in character position 1-71 of a record.
2. The DARCHIVE command identifier does not have to begin in any specific column but nothing except spaces may precede it.
3. There must be one or more spaces between the DARCHIVE command identifier and the first keyword parameter.
4. The keyword parameters must be separated from each other by commas (no spaces).
5. If necessary, continuation records for a DARCHIVE command may be included. In this case the only restriction is that the record to be continued must be terminated at the end of a keyword parameter (i.e. must end with a comma).
6. For a DARCHIVE command with keyword parameters, which has continuation records, then the DARCHIVE command identifier, with at least one keyword parameter, must be given on the first record of the command.

7. Any number of DARCHIVE commands may be given in one execution of the procedure.
8. Each DARCHIVE command must begin on a new record.
9. For DARCHIVE, only the DSNAME= keyword is mandatory. The other keyword parameters are optional.
10. Only the first three characters of any keyword are significant. For example, it is possible to write DSN=--- instead of DSNAME=---.
11. It is not possible to code both RETPD= & EXPDT= on one DARCHIVE command.
12. If neither EXPDT= nor RETPD= is specified, the RETPD=270 is assumed.

#### Examples of DARCHIVE Commands

##### 1. **DARCHIVE DSNAME=TSOABC.PROGX.DATA**

This DARCHIVE command is used to request the archival of the data set TSOABC.PROGX.DATA. The archival of the data set does not take place immediately, but in a subsequent periodic batch run. At the time of the deferred archival, the data set is erased from the disk and the archived data set is given a 270 days retention period before expiration from the magnetic tapes archives.

##### 2. **DARCHIVE DSNAME=TSOABC.PLUTO.DATA, NEWNAME=TSOABC.VENUS.DATA**

As in example 1, except that the name given to the data set on the archive tapes is TSOABC.VENUS.DATA. (Note the use of a continuation record).

##### 3. **DARCHIVE DSNAME=TSOABC.PROG.FORT,EXPDT=81335**

As in example 1, except that the expiration date given to the data set on the magnetic tape archives is the 335th day of 1981 (i.e. 1st December 1981).

##### 4. **DARCHIVE DSNAME=TSOABC.PROG.FORT,RETPD=100**

As in example 1, except that the retention period given to the archived data set is 100 days (from the date of the archive).

5.           **DARCHIVE   DSNAME=TSOABC.PROG.FORT,  
                  NOSCRATCH,NOCATALOG**

As in example 1, except that after the successful archive, the data set will remain on disk (it is neither uncataloged nor scratched).

6.           **DARCHIVE   DSN=TSOABC.PROG.FORT,EXPDT=81335**

As example 4, except using the shortened form the the keyword parameter.

Example of a DARCHIVE Job

```
//           JOB(your job card)
//DARCHIVE   EXEC DARCHIVE
//SYSIN       DD *
DARCHIVE   DSN=TSOABC.PLUTO.DATA,
            NEW=TSOABC.VENUS.DATA,
            RET=100
/*
```

(See examples 3 & 5 above).

5.2 Batch DRESTORE Procedure

The batch DRESTORE procedure enables a batch user to request the restore of a previously archived data set from the magnetic tape archives. This restore is not performed immediately but is subsequently performed in a periodic batch run.

General Form of DRESTORE Job

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

where each DRESTORE command has the form:

```
DRESTORE   DSNAME=data-set-name,VOLUME=volser,
            NEWNAME=data-set-name,
            TIMEDATE=hhmmyydd,SCRATCH,ERASE
```

where:

**DSNAME=data-set-name**

Specifies the name of the data set to be restored. The full data set name must be given.

To restore other than the most recently archived version of a data set, a subscript of the form (-n) is required. The value of n increases for successively older versions.

(i.e. dsname(0) is the latest versions )  
( dsname(-1) is the penultimate version)  
( )  
( . )  
( . )  
( . )

**VOLUME=volser**

Specifies the volume serial of the device onto which the data set is to be restored. Omission of this parameter will result in the selection of the default of the volume from which the data set was archived.

This parameter should not normally be used as the default is usually the most acceptable.

**NEWNAME=data-set-name**

may be used to change the name of the data set to be created.

**TIMEDATE=hhmmyydd**

when multiple versions of the same data set have been archived, this parameter may be used to restore a particular version on the basis of the time (hhmm) and the date (yydd) archived.

**SCRATCH**

normally an existing preallocation will be utilized by the restore function. However, the presence of the SCRATCH parameter will cause any existing preallocation to be scratched prior to the new allocation.

**ERASE**

normally a restore to a preallocated partitioned data set will leave intact those preexisting members which are not replaced. However, when this keyword is present the directory of a PDS will be initialized prior to the initiation of the restore function.

Notes on format of the DRESTORE Command'

1. Notes 1-10 of the notes for the DARCHIVE batch command (see page 18) apply to DRESTORE.

## Examples of DRESTORE Commands

### 1. **DRESTORE DSNAME=TSOABC.PROGX.FORT**

Restore the data set TSOABC.PROGX.FORT.

The data set will normally be created on disk (on the same disk from which it was previously archived). If, however, a data set named TSOABC.PROGX.FORT has already been created on disk by the user, then this preallocation will be utilized.

If there are multiple versions of the data set on the DMS archive system, then the latest will be taken.

The retrieval of the data set will not take place immediately, but in a subsequent periodic batch run.

### 2. **DRESTORE DSNAME=TSOABC.PROGX.FORT, NEWNAME=TSOABC.PROGY.FORT**

As in example 1, except that the name given to the data set that is loaded to disk is TSOABC.PROGY.FORT.

(Note the use of the continuation record).

### 3. **DRESTORE DSNAME=TSOABC.PROGX.FORT, TIMEDATE=(164581121)**

As in example 1, except the version of TSOABC.PROGX.FORT which was archived at the specified time and date is restored (16.45hrs on 1st May 12981).

### 4. **DRESTORE DSNAME=TSOABC.PROGS.FORT,SCRATCH**

As in example 1, except if a preallocation exists it will be scratched.

### 5. **DRESTORE DSNAME=TSOABC.PROGP.FORT,ERASE**

As in example 1, except that for data set TSOABC.PROGP.FORT (which must be partitioned), if the data set is preallocated, then the directory will be initialized prior to the loading from magnetic tape of the archive copy.

Therefore, any existing information on a preallocated data set will be overwritten by this DRESTORE with ERASE.

### 6. **DRESTORE DSN=TSOABC.PROGS.FORT,SCR**

As in example 4, except with shortened keywords.

### Example of a DRESTORE Job

```
//      JOB(your job card)
//DRESTORE EXEC DRESTORE
//SYSIN DD *
DRESTORE DSWNAME=TSOABC.PROGX.FORT,
         TIMEDATE=(164581121)
DRESTORE DSWNAME=TSOABC.PROGS.FORT,SCRATCH
/*
```

(See examples 4 and 5 above)

### 6.3 Batch LISTDMS Procedure

The batch LISTDMS procedure enables a batch user to request details of the state of data sets on the DMS system.

### General Form of a LISTDMS Job

```
//      JOB(your job card)
//LISTDMS EXEC LISTDMS
//SYSIN DD *
.
.
.      LISTDMS Commands
.
/*
```

where each LISTDMS command has the form:

```
LISTD DSWNAME=data-set-list,NOEJECT
```

where:

#### **DSWNAME=data-set-list**

specifies the name of the data set or list of names of data sets for which the details are requested. If the user specifies a list of data sets, it must be enclosed with parentheses. The full data set name(s) must be given.

It is also possible to specify a group of data set names beginning with a particular string by terminating a data set identifier with a /.  
(e.g. TSOABC/ would have all the information for data sets beginning with the string TSOABC).

#### **NOEJECT**

will prevent page ejection after the listing for each data set name or group specified.



### Notes on format of the LISTD Command

1. Notes 1-10 of the notes for the DARCHIVE batch command (see page 18) apply to LISTD.
2. A maximum of 10 list entries for each LISTD command is supported.
3. In the listing the most recent (current) version of any data set will be listed first with the oldest version last.

### Examples of LISTD Commands

1. **LISTD DSNAME=TSOABC.PROGX.FORT**

This command will list the DMS archive details for data set TSOABC.PROGX.FORT.

2. **LISTD DSNAME=TSOABC/**

This command will list the DMS archive details for all data sets with leading part TSOABC.  
(i.e. all data sets belonging to TSO userid TSOABC).

3. **LISTD DSNAME=(USER.LIBSUBMD TSOABC/)**

This command will list the DMS archive details for data set USER.LIBSUBMD and for all data sets belonging to TSO userid TSOABC.

4. **LISTD DSNAME=(USER.LIBSUBMD TSOABC./),NOEJECT**

As example 3, except that the page eject in the output, between the two sets of information, will be suppressed.

Note. The information produced should almost be self-explanatory. However, a full description of the output will be given in the July Newsletter.

## 6.4 Disk Utilization by Data Sets

The batch DSUTIL procedure enables a batch user to obtain details of his data sets which are resident on user disks (USER01,USER02,...).

### General Form of DSUTIL Job

```
//          JOB(your job card)
//DSUTIL    EXEC DSUTIL
//SYSIN     DD *
.
.
.      Selection Commands
.
/*
```

The selection commands are used to limit the details obtained to a single user, a group of user's data sets, a single volume, an authorization code, etc.

Each selection command must begin in column 1 of a card, and only one command per card is allowed.

The commands are as follows:

#### **DSN=data-set-name**

where data-set-name is the name of the data set or the prefix of a group of data sets, for which details are required. In the first case the name must be a complete data set name, in the second case the prefix must be terminated by a / (e.g. TSOABC./).

(The data-set-name (or prefix) (following the =) may be from 1 to 44 characters in length and must begin in column 5 of the card).

#### **VOL=volser**

where volser defines a single volume for which the search for data set details is to be performed.

(The volume serial number (following the =) must be one of the user disk volumes (USER01,USER02,...) and must be exactly six characters in length, beginning at column 5 of the card).

#### **ACC=accounting-code**

Limits the search to consider only data sets belonging to a specific accounting-code.

(The accounting-code (following the =) must be a valid JRC Computing Centre accounting code, eight characters in length, beginning at column 5 of the card), and composed of Authorization Code and Programmer Number.

#### **AUT=authorization-code**

Limits the search to consider only data sets belonging to a specific authorization-code (i.e. the first four digits of the accounting code).

(The authorization code (following the =) must be a valid JRC Computing Centre authorization code, four digits in length, beginning at column 5 of the card).

### PRG=programmer-number

Limits the search to consider only data sets belonging to a specific programmer-number (i.e. the last four digits of the accounting code).

(The programmer number (following the =) must be a valid JRC Computing Centre programmer number, four digits in length, beginning at column 5 of the card).

### Note.

\* The selection is formed by the logical intersection of all the selection criteria (e.g. if VOL=USER01 and ACC=88889999 are given as selection criteria, then only data sets on volume USER01 which have accounting code 88889999 are listed).

\* If the PRG=--- and/or the AUT=--- are selected then it is not possible to select the ACC=--- (and viceversa).

\* Users should only issue a combination of DSN=---,ACC=---,AUT=---,PRG=--- selection cards to obtain lists of subsets of his own data sets.

### Examples DSUTIL Job

1.

```
//          JOB(your job card)
$CLASS B
//DSUTIL   EXEC DSUTIL
//SYSIN    DD *
DSN=TSOABC./
VOL=USER01
/*
```

This will produce details of all the data sets of disk USER01, belonging to TSO user TSOABC.

2.

```
//          JOB(your job card)
$CLASS B
//DSUTIL   EXEC DSUTIL
//SYSIN    DD *
ACC=88889999
/*
```

This will produce details of all of the data sets (on all the user disks), belonging to accounting code 88889999.

## NEW DISK UNITS

M. Dowell

Recently a new set of disk units has been added to the AMDAHL 470/V7A central computer system. These disk units are of the type which is called 3350 (by IBM). In fact, the disk drives which have actually been obtained are Storage Technology "plug compatible" disk drives known as STC 8350 disks.

Access times for data on these 3350 disks is less than for the present 3330-model 11 disks (such as USER0A, USER0B). Also, the total capacity of the disks is more than 50% greater than for the 3330-model 11. The 3350 disks do not have user exchangeable disk packs as do the 3330-model 11 disks.

The following table gives a summary of the differences (in capacity) between the 3330-model 11 and the 3350 disks.

	3330-model 11	3350
cylinders/drive	808	555
tracks/cylinder	19	30
track capacity (bytes)	13030	19069
cylinder capacity (bytes)	247,570	572,070
drive capacity (approx.bytes)	200 million	317,5 million

From the table it can be seen that although there are less cylinders on any one 3350 disk the information which may be stored on any one cylinder is more than twice that which may be stored on a 3330-11.

The new 3350 disks will be used for user data sets after the DMS changes which will take place for the 29th June 1981. At this time six 3350 disks will be available for user data sets (USER01, USER02, USER03, USER04, USER05, USER06).

More details of the appropriate record sizes for the 3350 disks is given in a new set of installation notes (DEVT). The following job shows how it is possible to obtain a copy of this new set of installation notes:

```
//          JOB(your job card)
//STEPX    EXEC LIHNO,MEMB=DEVT
```

Obviously with these new disks which have a different tracklength, users should make use of different block sizes for various types of data sets that those that are presently recommended. Details of the use of the new disks with such recommendations are given in the article "DMS Facilities" beginning on page 3 of this Newsletter.

It is necessary for the users to take heed of these recommendations to ensure an efficient use of the available disk space.

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

<u>General</u>	YEAR 1980	YEAR 1981
Number of working days	17 d	18 d
Work hours from 8.00 to 24.00 for	16.00h	16.00h
Duration of scheduled maintenance	16.59h	17.50h
Duration of unexpected maintenance	14.83h	6.84h**
Total maintenance time	31.42h	24.34h
Total exploitation time	265.08h+	277.66h++
CPU time in problem mode	163.82h	360.82h#

Batch Processing

Number of jobs	6011	7016
Number of cards input	908000	462000
Number of lines printed	20342000	24332000
Number of cards punched	134000	20300
CPU Time	142.88h	313.94h#
Number of I/O (Disks)	16533000	25364000
Number of I/O (Magnetic tape)	2745000	3992000

T.S.O.

Number of LOGON's	3289	4280
Number of messages sent by terminals	230000	294670
Number of messages received by terminals	1467000	1920580
CPU time	19.64h	40.50h#
Number of I/O (Disk)	3008000	4582000
Connect time	2412.48h	3099.31

ADABAS

Total time service is available	-	140.84h
CPU time	-	3.73h#
Number of I/O (Disk)	-	743300

IMS

Total time service is available	94.15h	120.71h
CPU time	1.30h	2.65h#
Number of I/O (Disk)	229000	434300

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

\*\* Covering all the configuration.

+ Including 24.50hrs overtime.

++ Including 18.00hrs overtime.

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

AMDAHL 470/V7A  
equivalent time in hours

33001	Reactor Safety	387.70
33002	Plutonium Fuel and Actinide Research	-
33003	Safety of Nuclear Materials	0.59
33004	Fissile Materials Control and Management	8.22
33005	Super-SARA Test Programme SSTP	38.36
33011	Solar Energy	13.64
33012	Hydrogen Production, Energy Storage and Transport	-
33013	Thermonuclear Fusion Technology	39.60
33014	High Temperature Materials	6.88
33021	Protection of the Environment	35.25
33022	Remote Sensing from Space	0.79
33041	Informatics	34.46
33043	Support to the Community - Bureau of References	2.34
33044	Training and Education	-
33046	Provision of Scientific and Technical Services	9.08
1.20.1	General Administration - JRC	61.47
1.20.2	General Services - Administration - Ispra	
1.20.3	General Services - Technical - Ispra	1.49
1.30.0	Central Workshop Ispra	2.16
1.40.2	ESSOR	1.82
	<b>TOTAL</b>	<b>643.85</b>
1.94.0	Services to External Users	15.95
	<b>TOTAL</b>	<b>659.80</b>

**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	2074	1635	988	1092	569	95	140	26	3	14
Elapsed time	80	136	161	252	182	46	93	37	1	7
CPU time	10.9	18.9	46.6	67.6	91.7	15.7	47.3	10.6	0.2	2.6
"Equiv" time	27	53	82	118	108	21	54	19	0.3	4
"Turn" time	0.5	1.2	2.2	3.2	4.1	3.1	3.4	10.1	3.0	9.5
I/O (disk)	1518	4678	4667	6925	2118	689	855	1146	29	175
I/O tape	1634	327	957	756	196	2	76	2	3	-

**NOTE.**

All times are in hours.

"Equiv" means equivalent.

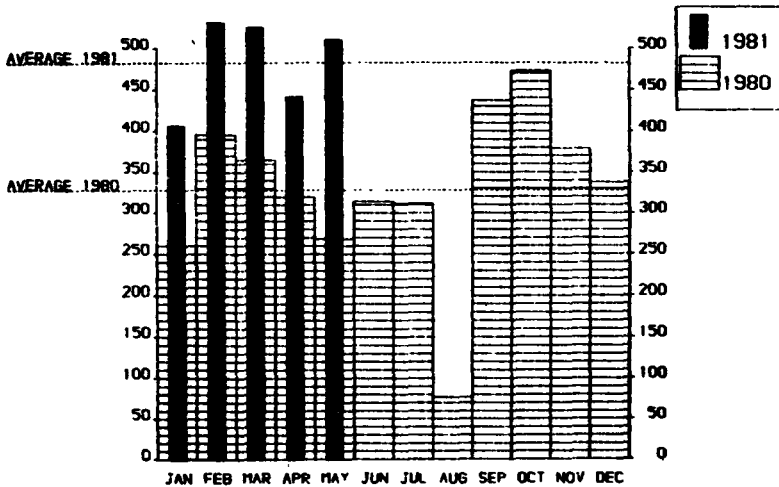
"Turn" means turn around.

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	20	34	49	64	80	93	99	100	100	100
%year 1981	36	51	64	75	86	94	98	100	100	100

**HISTOGRAM OF TOTAL EQUIVALENT TIME(HRS)**



Projected total for 1981 = 5791 hours(using average)

Total for 1980 was = 3936 hours



## REFERENCES TO THE PERSONNEL/FUNCTIONS OF THE COMPUTING CENTRE

<u>Manager of the Computing Centre</u>		J. Pire	
Responsible for User Registration	Ms. G. Ramsb		
<u>Operations Sector</u>			
Responsible for the Computer Room		A. Binda-Rossetti	
Substituted in case of absence by:			
Responsible for Peripherals		G. Nocera	
<u>Systems Software Sector</u>			
Responsible for the sector		D. König	
Substituted in case of absence by:		P.A. Moinil	
Responsible for TSO Registration		C. Daolio	
			Room Tel.
<u>Informatics Support Sector</u>			
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
<u>Advisory Service /List of Consultants(See Note 1)</u>			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 responsibility. 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.

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Indicate with a (✓) 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 .....

.....

.....

TELEPHONE .....

