TPS-access

Installation Guide

TPS-ACCESS INSTALLATION GUIDE

CONTENTS

ACCI-0381

1. INTRODUCTION

1.1 INTRODUCING TPS-ACCESS

TPS-access is a data enquiry system designed to present access to data by means which do not involve either the syntactical grasp of a program-like language or the semantic accurancy demanded by even a "plain English" approach in the accurate transcription of Keywords and particularly of names given to elements of data accessed by the system.

The underlying idea is that all data is held in Tables divided into columns, in which each "line" is effectively a record containing an element in each column.

Given that data is held in such tables it is a conceptually simple process to scan through the table. By an equally simple extension of the principle the scan may be made selective by indicating the known value of any element (or "field") whose presence in an item indicates that the user wishes to retrieve that item.

The facilities offered to the user in the first release of TPS-access are:

1. To create a table - i.e. to select the elements of data that will constitute its "columns".

   In the first release of the software the elements which form a table are all from a single data record.

   Privacy of data is ensured at this stage. The user does not name the elements he will use but selects them from "menus" displayed to him. This approach, while eliminating possible errors of transaction, also allows the system to offer only those elements accessible to the particular user.

   The system is regarded as being divided into "Subjects" and thence into "Topics". This avoids a user having to be presented with an unlimited menu of elements, as well as preventing attempts to make Tables from totally unrelated elements of data. It also avoids the need to impose absolutely unique naming conventions across the whole of an installation's database, and is the basis for defining the scope of each individual's access to the system, as a number of Topics within a number of Subjects.

2. To request the display of a "blank" table and use it for defining a search for selected data. The user enters "matching" criteria in chosen elements, and a rule adjacent to them (=, not =, >,<, as well as "starting from" and "finishing with" in non-numeric fields). Multiple selection criteria may be entered, forming a single complex search, or several "alternative" searches. Comparisons can be made with entered values, or with the unknown values of other elements.

3. To "edit" the content of the output of a search. The simple approach is to list all matching items in the table. The user may wish for only a count of the "hits", or for totals of chosen elements (with or without the full listing). He may also choose to display results in a different table, in effect using a table with more "columns" than the size of the video screen will allow, and seeing part of it to define his search, and the other part to display his results.

1.2   GLOSSARY

This section provides an explanation of words assigned special meanings within TPS-access.

Dictionary

The Dictionary is an indexed-sequential file which holds all details of the user's TPS-access system. The file is created in batch mode with data from card parameters supplied by the user and records from the serial Base Dictionary supplied with the product.

Element

An Element is a data field which may be included as a "column" within a Table. The Element definition specifies the format in which the data is to be displayed or input, so the Element is always represented as a character type field.

Field

A Field is an item of data within a Standard Record. The Field definition specifies the format in which the data is held in the file. Where the data in a Field is to be displayed, an Element must be associated with the Field. The terminal user is aware only of Elements; Fields are used internally by TPS-access to relate displayed Elements to the physical location and format of the data.

Glossary Record

A Glossary Record gives a description of a component in the system, which is displayed in response to a terminal user's request for information concerning the component. The Glossary Records are held in the Dictionary and specified by the user as part of the set-up parameters. Each Glossary description may consist of up to 5 lines of details for display.

Item

An Item is a selection of Elements taken from a Standard Record which constitute one "row" of a Table.

Physical Record

A Physical Record is a record in the form in which it is held in one of the User's Files to be enquired upon by TPS-access. In the first release of TPS-access these files may be either serial or indexed-sequential, and each Physical Record may be in one of the following formats:

- a flat record : a fixed length record consisting of fixed length fields (or a leading fixed length portion of a variable length record whose variable portion is not used).

- a COBOL variable record : consisting of a fixed length portion and a section which is fixed length but may appear a variable number of times depending on the value of a field in the fixed portion of the record.

Note that there is no restriction on the number of different types of Physical Record which may be held in one file.

Record Type

A Standard Record is a fixed length record obtained from the Physical Record. TPS-access reads Standard Records; each may provide an Item in the results displayed in response to a query. A 'flat' Physical Record produces one Standard Record; a single 'COBOL variable' record produces one or more Standard Records, with each Standard Record consisting of the fixed portion of the Record followed by one occurrence of the variable part.

Subject

A Subject is a logical part of the data (for example, everything to do with Sales might be one Subject, everything to do with Manufacturing another). Each Subject is further divided into Topics.

Table

A Table is a display of data in which each column is a different Element and each row is an Item. (All Elements in a Table are from the same Standard Record).

Topic

A Topic is a subdivision of a Subject. Privacy checking is carried out by Subject/Topic; part of the system set-up procedures define the Subjects and Topics to which each user may have access.

ACCI—0381

- 1-5 -

Work File

The TPS-access Work File is a serial file which holds the
formulation parameters and partial results of a query during
processing. Each terminal signed on to the TPS-access service is
allocated a portion of the file, a "slot", for its own use.

2. INSTALLATION OF FREE-STANDING TPS-ACCESS

This part of the manual will be later issued as an Amendment Set.

3. INSTALLATION OF TPS-ACCESS FOR A TPS USER

3.1 INTRODUCTION

This Section describes the installation of TPS-access at a site which uses the TPS package. The TPS-access software may be included along with the users' applications software in a single TPS program, or a TPS program may be generated with TPS-access facilities only. It should be noted that TPS-access must be used in conjunction with TPS3 software.

Installation of TPS-access involves six processes:

1. Installing the basic TPS-access software.

   This is described in Section 3.2

2. Maintaining the TPS-access Dictionary

   This process is described in Section 3.3. It consists of four elements:

   - allocation of disc files (see Section 3.3.1)
   - batch procedures for Dictionary creation (see Section 3.3.2)
   - batch procedures for Dictionary Maintenance (see Section 3.3.3)
   - file security and recovery considerations (see Section 3.3.4)

3. Maintaining the TPS-access Work File.

   This process is described in Section 3.4. It consists of three elements:

   - allocation of Work File (see Section 3.4.1)
   - initialisation of Work File (see Section 3.4.2)
   - file security and recovery considerations (see Section 3.4.3)

4. Generating a TPS program to include TPS-access

   This process is described in Section 3.5

5. Setting up the System File for use with TPS-access.

   This process is described in Section 3.6. It consists of two elements:

   - System file creation using program #TPSM
   - System file update using program #TPSR

6. Setting up a Format File for use with TPS-access

   This process is described in Section 3.7.

3.2   ISSUE OF TPS-ACCESS SOFTWARE

TPS-access software is issued to TPS users with the rest of their TPS
Software. The issue of TPS software is fully described in Part 1,
Section 2 of the TPS Operating manual.

The files issued specifically for TPS-access are:

TPS-ACCESS :   this is the library file containing the TPS-access
                      subroutines; it is used for consolidation (#XPCK).
                      The generation number is the TPS3 release number.

TPSACCESS-BD :   this is a serial file which holds the TPS-access
                      Base Dictionary records. These define details of
                      text and messages to be displayed on the TPS-
                      access screens: this file contains the English
                      version of the text. The file is used as input to
                      the utility to create a user Dictionary. The
                      generation of the file is the TPS3 release number.

PROGRAM TLIB :   this is the Standard program library which
                      contains all TPS utility programs, including the
                      TPS-access utilities #TPQA and #TPQB.

These files are restored to disc using the standard utility #XPJW.

3.3 MAINTAINING THE TPS-ACCESS DICTIONARY

The TPS-access Dictionary is an indexed-sequential file which holds all details of the user's TPS-access system. The file is created in batch mode and subsequently updated online with Table details.

3.3.1 Allocating the Disc Files

In addition to the TPS-access Dictionary, serial work files have to be allocated for use with the batch Dictionary creation procedures.

All files are allocated with two-block buckets and two-word bucket headers.

The size of the files will depend on the complexity of the TPS-access system : i.e. the number of Subjects, Topics, Standard Records etc. to be recorded. A typical size might be 400 buckets for the serial work files (400 home buckets at 100% packing density for the indexed-sequential Dictionary.) If the file allocated is not large enough, the batch program creating the file will fail. It will then be necessary to reallocate or extend the file and rerun the batch program.

A more accurate estimate of the required file size may be calculated from the sizes of the various records held within the file. The record types and their associated sizes are as follows:

Description records (from Base Dictionary)	150 buckets
Subject	123 words (max)
Topic	9 + 6 words per Table 9 + 4 words per Standard Record
Table	20 + 6 words per Element
Physical record	14 words
Standard record	39 + 13 words per Field
Element	12 + 13 words per Standard Record including the Element
User Name	12 words
Glossary	97 words (maximum)

Note that where records are variable length they may be fragmented to avoid exceeding the maximum Dictionary record size of 247 words. In this case the fixed part of the record is repeated.

The index-sequential Dictionary has a keylength of 24 characters; the Key commences at the 5th character of the record (i.e. immediately following the Word Cou.nt word). The file should be allocated with plenty of first and second level overflow as after its initial creation the file is updated in situ by both the batch procedures and the interactive processes.

Example

The TPS-access Dictionary ACCESS-DICT, generation 0, and two serial work files ACCESS-WORK1 and ACCESS-WORK2, both generation 1, are to be allocated. 400 home buckets are needed to hold the Dictionary records (at 100% packing density).

The following parameters may be used:

```
XPJC1,1,000424,ACCESS-WORK1,1,0,1,2,
XPJC4,A(1,400)*
XPJC1,1,000424,ACCESS-WORK2,1,0,1,2,
XPJC4,A(1,400)*
XPJC1,1,000424,ACCESS-DICT,0,0,2,2,
XPJC2,V,Q,247,24,4,5,2,
XPJC3,75,0,I,1,0,1,
XPJC4,S(6,34,0,95)*
```

3.3.2 Batch Procedures for Dictionary Creation

The batch procedures for Dictionary creation require the use of the following utility programs

- TPQA : this is the TPS-access utility for creation of a serial file of Dictionary records.

- Sort : any standard sort utility may be used for sorting the Dictionary records : e.g. ICL utility XSDC

- File Reorganisation : a program generated by the standard ICL Utility XPJZ is used to create and reorganise the indexed-sequential Directory.

- TPQB : this is the TPS-access utility for Updating the indexed-sequential Dictionary.

Figure 1 below illustrates the procedures in the creation of the Dictionary for TPS-access.

ACCI-0381

1.

Serial Base Dictionary

Dictionary Definition

Allocation Parameters

4.

TPQA

TPQB

Serial Work File

Dictionary Definition Listing

Indexed-Sequential Dictionary

Parameter and Error Listing

2.

Sort

Reorganise

5.

Serial Work File

Serial Dictionary

3.

Reorganise

Reorganise

5.

Indexed-Sequential Dictionary

New Indexed-Sequential Dictionary

ACCI-0381

1. Create file of records for Dictionary

The program TPQA is used to create a serial file of Dictionary records from input parameters on cards and the Base Dictionary supplied with TPS-access.

Full details of the parameters for TPQA are given in Section 4.2 of this manual, and operating instructions for the program in Appendix A.

2. Sort Dictionary records

The file of Dictionary records output by program TPQA is sorted into Key sequence before it is loaded as the indexed-sequential Dictionary. Any sort utility may be used : for example, the standard ICL program XSDC.

Example

Use program XSDC to sort the Dictionary records held in file ACCESS-WORK1, generation 1, into the second Work file ACCESS-WORK2, generation 1. The sort is to use scratch files for its work space.

```
XSDC,KEY01(1,1A,1.0,24)
XSDC,NUM01,
XSDC,INP(ACCESS-WORK1(1))DA,
XSDC,WOR01(SCRATCH FILE)(200),
XSDC,WOR02(SCRATCH FILE)(200),
XSDC,OUT(ACCESS-WORK2(1))DA,
XSDC,END
```

3. Load index-sequential Dictionary

The sorted file of Dictionary records is loaded into the indexed-sequential Dictionary, using a File Reorganisation program generated using the ICL Utility XPJZ. Note that this file may not be used with an online TPS-access program until the utility TPQB has been run.

Example

The Dictionary ACCESS-DICT, generation 0, is to be loaded with the records held in the Work file ACCESS-WORK2, generation 1, using the File Reorganisation program ZJPX. (This Dictionary has been allocated using the parameters given in the example in Section 3.3.1 above).

```
ZJPX1,1,N,0,24,4
ZJPX2,DA,ACCESS-WORK2,1
ZJPX4,DA,ACCESS-DICT,0,0,0,Q,C,75,50,0,1,0,1,
ZJPX5,<<<<<<<<<<<<<<<<<<<<<<<<<<,*
```

- 3-6 -

ACCI-0381

4. Update Dictionary

The program TPQB is used to update the Dictionary with details
from input parameters on cards, and to perform cross-reference
checks on the Dictionary to ensure that the details specified in
the parameters to TPQA are consistent.

Note that the Dictionary may not be used by the online TPS-access
system until a successful cross-reference check has been carried
out on the file.

Full details of the parameters for TPQB are given in Section 4.3
of this manual, and operating instructions for the program in
Appendix A.

5. Reorganise Dictionary

The Program TPQB creates new records in the Dictionary, which may
result in extensive use of overflow. It is therefore recommended
that the Dictionary is reorganised before it is used by the online
program. This is achieved by two runs of a File Reorganisation
program generated by XPJZ, firstly to copy the Dictionary to a
serial Work file, and then to reload the Dictionary as an index-
sequential file. This reload operation is exactly the same as the
initial loading of the file described in point 3 above. Note that
a check may be made on the use of overflow within the Dictionary
by running the Standard Utility XPJH.

Example

The Dictionary ACCESS-DICT, generation 0, is to be reorganised
with the File Reorganisation program ZJPX, using as a work file
ACCESS-WORK2, generation 1.

Parameters to copy Dictionary to Work file:

```
ZJPX1,1,N,0,24,4
ZJPX2,DA,ACCESS-DICT,0,
ZJPX4,DA,ACCESS-WORK2,1,0,0,S,C,*
```

Parameters to reload Dictionary:

```
ZJPX1,1,N,0,24,4
ZJPX2,DA,ACCESS-WORK2,1,
ZJPX4,DA,ACCESS-DICT,0,0,0,Q,C,75,50,0,1,0,1,
ZJPX5,<<<<<<<<<<<<<<<<<<<<<<<<<<,*
```

3.3.3 Batch procedures for Dictionary Maintenance

Once the Dictionary has been created using the batch procedures
described above, it may be used within the online TPS-access system

and updated with details of new Tables.

Some batch maintenance of the Dictionary will be required. The procedures necessary will depend on the type of modifications to be made to the Dictionary. These may be:

- add details of new User Names
- allocate existing Standard Records to further Subjects and Topics.
- update Dictionary with new release of Base Dictionary
- reorganise to remove overflow
- alter details of Element, Standard Records, Subjects or Topics.

1. Add Details of new User Names

Details of new User Names may be included in the Dictionary simply by running the program TPQB with details of the new users in the parameters.

Note that if there is a requirement to change the User Name associated with a User Number, or to delete a User Number from the file, it is necessary to recreate the Dictionary using the procedures described in point 5 below.

2. Allocate Standard Records

Standard Records present in the Dictionary may be allocated to existing Subjects and Topics simply by running the program TPQB with the appropriate parameters.

3. Update Dictionary with new Base Dictionary

From time to time a new release of the TPS-access product will be issued. The new issue includes a TPS-access Base Dictionary; the Dictionary must be updated with details from this file before the file is used with the new TPS-access software.

The new Base Dictionary records may be merged into the existing Dictionary using a file Reorganisation program generated by XPJZ. The program is first run to copy the index-sequential Dictionary to a Work File; this Work file and the Base Dictionary are then used to recreate the Dictionary.

Example

Records from the new Base Dictionary, TPSACCESS-BD, generation 5, are to be merged into the Dictionary ACCESS-DICT, generation 0, using program ZJPX. The file ACCESS-WORK2, generation 1, is to be used as a work file.
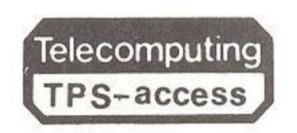
Parameters to copy Dictionary to work file:

```
ZJPX1,1,N,0,24,4,
ZJPX2,DA,ACCESS-DICT,0,
ZJPX4,DA,ACCESS-WORK2,1,0,0,S,C,*
```

Parameters to reload Dictionary:

```
ZJPX1,1,N,0,24,4,
ZJPX2,DA,ACCESS-WORK2,1,
ZJPX3,DA,TPSACCESS-BD,5,
ZJPX4,DA,ACCESS-DICT,0,0,0,Q,C,75,50,0,1,0,1,
ZJPX5,≪≪≪≪≪≪≪≪≪≪≪≪≪≪≪≪≪≪≪≪≪≪≪≪≪,*
```

4. Reorganise Dictionary to remove Overflow

The overflow areas of the Dictionary may be significantly used due to the addition of records by the online system or program TPQB. The amount of overflow used may be analysed using the utility program XPJH. Excessive use of overflow areas results in inefficient access to the data, so the file should be reorganised.

Reorganisation is achieved by two runs of a File Reorganisation program generated by XPJZ: the first copies the Dictionary to a serial work file, and the second reloads the Dictionary as an index-sequential file.

Example

The Dictionary ACCESS-DICT, generation 0, is to be reorganised with program ZJPX, using as a work file ACCESS-WORK2, generation 1.

Parameters to copy Dictionary to Workfile:

```
ZJPX1,1,N,0,24,4,
ZJPX2,DA,ACCESS-DICT,0,
ZJPX4,DA,ACCESS-WORK2,1,0,0,S,C,*
```

Parameters to reload Dictionary:

```
ZJPX1,1,N,0,24,4,
ZJPX2,DA,ACCESS-DICT,1,
ZJPX4,DA,ACCESS-WORK2,0,0,0,Q,C,75,50,0,1,0,1,
ZJPX5,≪≪≪≪≪≪≪≪≪≪≪≪≪≪≪≪≪≪≪≪≪≪≪≪,*
```

5. Alter Element, Standard Record or Subject/Topic Detials

The information set up by program TPQA - details of Elements, Standard Records, Subjects and Topics - may be amended only by recreation of the Dictionary file.

The procedures described in Section 3.3.2 should be followed, with the following minor alteration: the existing Dictionary file may be used as an additional input file to program TPQA; Table records created online are then extracted from this file and carried forward to the new Dictionary.

Note that this recreation procedure could give rise to inconsistencies in the Dictionary if Tables are carried forward for which a referenced Subject, Topic, Standard Record or Element has been omitted from the TPQA input parameters. The Consistency Check function of TPQB checks for missing Subjects and Topics and ensures that the new Dictionary may not be used online until the appropriate Subject and Topic records have been defined. Other inconsistencies in the Dictionary will give rise to the error Message 'FAULT-CONTACT COMPUTER DEPARTMENT' at the terminal. The offending Table record should then be deleted online. Should the error report persist, it is recommended that the Dictionary is recreated.

3.3.4 File Security and Recovery Considerations

The Dictionary file is updated by the online TPS-access software: Table records are added and deleted by interactive procedures. It is therefore prudent that some security cover is provided for the Dictionary itself.

The recommended security is that all updates to the file are recorded on a serial data log file. For automatic file recovery a Reserve file must be available, and the option 'Logfile' specified. This reserve must be an exact copy of the Dictionary file. Whenever the Log file is reset a new Reserve file must be created from the latest version of the Dictionary. These file security and recovery options are specified as parameters when the System File is set up (see Section 3.6).

3.4 MAINTAINING THE TPS-ACCESS WORK FILE

The TPS-access work file is a TPS "slot" file with one slot available for each concurrent user of TPS-access. The file is used to hold the formulation details and to store results during the processing of a query.

3.4.1 Allocating the TPS-access Work File

The TPS-access Work File is allocated as a serial file with two block buckets and two word bucket headers.

In use, the file is divided into "slots", with each terminal accessing its own portion of the file. The size of the file depends, therefore on two factors:

- the number of "slots"
- the size of each slot.

The number of slots in the file is the number of concurrent users of TPS-access (i.e. the maximum number of users who may be signed on at any one time).

Each slot is used during processing to hold the formulation details and also the results of a query. An allowance of 20 buckets per slot should be sufficient to hold formulation details for the most complex of queries (simpler queries might typically require up to 8 buckets). The amount of space allocated for results depends on the volume of data which is expected to be received in response to a query, and on requirements for "paging backwards" to re-examine results already displayed. At least 10 results records (each relating to a single line Item displayed) are held per bucket.

The results area is maintained as a cyclic file, so that when the slot is filled the first results are overwritten. Once results records have been overwritten, it is not possible to page backwards and redisplay them. (A warning is displayed to the terminal user before any overwriting takes place).

The example below illustrates the calculation of Work File size.

Example

The Work File TPSACCESS-WF, generation 0, is used with a TPS-access system which may have up to 25 users signed-on at any time. The queries to be used may have complex formulation details. Allowance should be made for paging backwards through 20 screens of results (note that 16 items are displayed per screen).

The size of the file is calculated as follows:

ACCI-0381

1. Number of slots
   = number of concurrent users
   = 25

2. Size of each slot
   = formulation area + results area

   Formulation area = 20 buckets (for complex queries)

   Results area
   = results records/10 (at least 10 results records per bucket)

   Results records
   = maximum "pages"   x   results records per screen
     to be re-displayed

   =   20 x   16

   =   320

   Results area

     = 320/10

     = 32

   Size of each slot
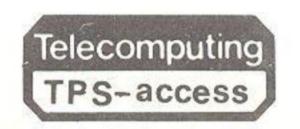
     = 20 + 32

     = 52 buckets

3. File size

     = number of slots x size of each slot

     =   25 x 52

     = 1300 buckets

The file may be allocated using the standard utility #XPJC. The
following parameters could be used:

```
XPJX1,1,C,TPSACCESS-WF,0,0,1,2,
XPJC4,A(1,1300)*
```

3.4.2 Initialising the TPS-access Work File

No user will be allowed to sign-on to the TPS-access service until the Work File has been initialised. The initialisation is achieved by use of the TPS function ZQWF, which is described below.

Identifier : ZQWF

Function : Initialise TPS-access Work File

Format displayed in response to ZQWF:

ZQWF]

> TPS-ACCESS WORKFILE INITIALISATION

> Enter number of concurrent users [   ]

Action at the Terminal:

Enter ZQWF in the first four characters of the screen. On receipt of the above format, enter the number of concurrent users. This should have the same value as was used in the calculation of the Work File size, as described in Section 3.4.1 above.

Action by the System on Receipt of the Request

The System will check for Master or System Status if this has been specified as a requirement for this message type at System Generation time (this is the recommended choice). The above format is displayed.

Action by the System on Receipt of the Completed Screens:

The Work File is initialised by writing a Work File index bucket to the first bucket of the file, and a Header bucket in the first bucket of each slot. The message 'CONFIRMED' will be displayed.

Note that this function should not be invoked whilst users are signed-on to the TPS-access service. If the Work File is inadvertantly reinitialised whilst users are signed-on, any subsequent message received from one of these users will result in the response "SERVICE FAILED - PLEASE SIGN ON."

3.4.3 File Security and Recovery Considerations

The data held in the Work File is current only during the formulation and processing of a single query. Each formulation of a new query clears the previously recorded query from the appropriate Work File slot. Considering this temporary nature of the data held in the file it is not necessary, and indeed is inadvisable for efficiency of processing, to ensure a secure Work File by the maintenance of a Duplicate copy of the file.

To provide automatic recovery in the event of a failure of the Work File, it is recommended that the option to open an Alternative file is used. The Alternative file must be allocated with the same characteristics and size as the main Work File, and must also be initialised. (One way of achieving this is to copy the main Work File into the Alternative using the standard utility #XPJW).

In the event of a failure of the Work File, the alternative Work File is opened. As this new file contains no details of the current activities of TPS-access users, it will be necessary for each user to sign-on again.

If a message is received from a user who signed on prior to the Work File failure, TPS-access responds with the message "SERVICE FAILED - PLEASE SIGN ON".

ACCI-0381

3.5   GENERATING A TPS PROGRAM INCLUDING TPS-ACCESS

3.5.1 Generation Parameters

The Generation forms should be completed as described in the System
Generation Forms Manual.   The following amendments are required to
the standard generation parameters in order to include the TPS-access
product. Note that the parameters for TPS3 must also be included in a
TPS-access program (see TPS3 System Definition Manual).

Form 0.3

This form must be included, incorporating the single macro £TCQA
(which requires no parameters).

Form 1

Include on macro £TCAY one of the following parameters:

ACCESS: to incorporate the TPS-access application routines into
two overlay areas. Where the parameter 'n,m,ACCESS' is
used Application Routines are generated in overlay areas
n and n+1, both commencing from unit number m. It is
recommended that this option is used for efficiency to
avoid excessive overlay swapping during TPS-access
processing. The sizes of the two overlay areas used are
approximately 3200 words and 3300 words.

ACCESS1:   to incorporate the TPS-access application routines into
a single overlay area. This option will provide a more
compact program, but the efficiency of TPS-access
processing will be reduced, causing longer response
times. The size of the overlay area used is
approximately 3300 words.

Form 3

To generate the application routine trains for TPS-access functions,
specify the following parameter in the last section:

ACCESS

Form 5

The size specified for the Message Area should be at least 577 words.

Form 7

The size of the system TCR is as calculated by TPSM. This is likely to be increased in size, as all files used by TPS-access must be defined with browsing capability ("my-next" access), and hence a 24-word browsing pointer area is allocated for each in the system TCR.

The end of the User TCR is used by the TPS-access routines as workspace for holding parameters between message pairs. The use of the user TCR by TPS-access is as follows:

```
Standard workspace: 225 words
Constants area    : as defined on Form 10.2 (see below)
Totals area       : as defined on Form 10.2 (see below)
```

The user TCR must be large enough to hold these three elements concurrently.

Form 9

For each thread the following store cells are required:

Dictionary file buffers - 2 store cells at least 256 words in size are required when the Dictionary is updated. In addition a cell of 256 words is required for the log file if updates to the Dictionary are logged.

User file buffers - 1 store cell of at least the bucket size of the user file is required by File Manager to read the User File.

User record buffers - 2 store cells of at least the maximum record size defined on Form 10.2 (see below) are required for the reading of Physical and Standard Records. The TPS-access software obtains these cells from the first chain which includes cells of an appropriate size. The User record buffers are not used concurrently with the Dictionary file buffers, so the store chains may be defined so that cells are shared for both functions. However, the User file buffers and record buffers may not be shared in this way.

Work area - a cell of minimum size 1150 words (the TPS-access software will obtain this from any chain of the appropriate size).

We recommend that chains are allocated in order of increasing size of cell. This is to ensure that TPS-access does not use a large cell of store where a smaller one would suffice.
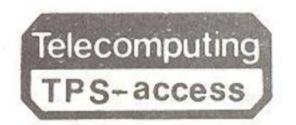
Form 10.2

This form must be included.

1. In Sections 1 and 2 (Macro £TCQB), specify the Logical File Numbers of the TPS-access Dictionary and the TPS-access Work File.

2. In Sections 3 to 6 Macro £TCQC must be completed with the following parameters:

    Maximum record size: the maximum size of a Physical Record or Standard Record, in words (range 2 to 1022).

    Scan check: this defines the maximum number of items which are to be scanned before the partial results of the query are displayed to the user. Judicious use of this parameter avoids the possibility of prolonged queries "swamping" the system.

    Size of constants area: this defines the size in words of an area of the user TCR to be used for holding constant values input as part of the formulation of a query. Each constant value is held in the format of the appropriate field within the standard record, commencing on a word boundary. The minimum size of this area is 1 word; if omitted, a constants area of 30 words is allocated. Note that if the constants specified during formulation cannot be held within the constants area, a Minor Logic Error is reported during the processing of the query.

    Size of totals area: this defines the size in words of an area of the user TCR to be used for holding totals maintained during the processing of a query. Totals are requested when the query is formulated; two words must be allocated for each separate total to be maintained concurrently. The minimum size which may be specified for this area is 2 words; if omitted, a totals area of 10 words is allocated. Note that if the totals specified during formulation cannot be held within the totals area, a Minor Logic Error is reported during the processing of the query.

Form 11

On macro £TCDA, define the file types for the TPS-access files as follows:

    Dictionary : INDE
    Work File : SERI

Form 12.0

In the Second Section (macro £TCEF), specify the following parameters:

ACCESS - to generate the facility requests for TPS-access.

Form 23a

To generate the message type entries for TPS-access, include the following parameter on macro £TCMY:

ACCESS

This generates entries for message types ZQWF and ^;? (the latter is used internally by TPS to route messages to the TPS-access service).

Form 24

1. In Section 3 (Macro £TCAM), it is recommended that the parameter Q is included to ensure that Master or System Status is necessary for use of the function ZQWF which is used to initialise the TPS-access Work File.

2. In Section 5 (Macro £TCCM), specify one of the following sets of parameters:

ACCESS,SYS, if System Status (or Master Status) is required for entry into the TPS-access service

ACCESS,, if no authority check is required for the TPS-access service.

3.5.2 The Generation Process

The Generation process is as described in Part 2 of the TPS Operating Manual.

The appropriate TPS Generator, the TPS Compiler and the ICL Consolidator are run to produce a TPS-access object program.

The parameters to these utilities are as described in the Operating Manual.

Note that the following parameters must be included amongst those specified to the consolidator #XPCK:

```
*LIB ED (TPS-ACCESS)    [library of TPS-access software
*LIB ED (TPS-TPS3)      [library of TPS3 Software
```

3.6 SETTING UP THE SYSTEM FILE FOR USE WITH TPS-ACCESS

To create a System File for use with TPS-access programs, both TPSM and TPSR programs must be run, as TPS-access requires use of the personal password system.

3.6.1 TPSM Parameters

TPSM parameters for a program including TPS-access should be specified as described in Part 2 of the System Generation Manual.

Parameters required specifically for TPS-access are detailed below.

1. Section 00 : General details

Item	Parameter	Notes
6	SYSA 2	Authority at the "Transaction Group" level must be specified, as TPS-access uses the personal password system for its privacy mechanisms.
9	SYSR REVE	This is the recommended warm restart option, providing a fast restart and ensuring that updates on the Dictionary are reversed.
16	TCRU nnnn	The size of the user TCR for use by TPS-access may be determined as described above in Section 3.5, Form 7.

2. Section 02 : Dictionary file specification

Item	Parameter	Notes
1	MAIN nnn	nnn is the Logical File Number as defined on Macro £TCQB on Form 10.2.
2	LOGF n	Present if updates to the Dictionary are to be logged (this is the recommended option).
3	TYPE OVERLAY	
5	RESE n	A reserve file should be specified if logging/recovery required (this is the recommended option).
6	MODE (INDE,STAR)	
7	RETE (n,n,n,n,n,n)	Retention as required

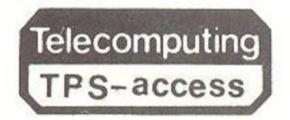| 8	STIN n	Indexes may be held in store for increased efficiency if required.
11	STOR n	The specified store chain must contain cells of at least 256 words in size.
12	ACCE(READ,WRITE,DELETE,SPECIFIC,MYNE,RECORD)	
14	MONI RECO	
17	FALL LOGFILE	Required if reserve specified (this is the recommended option).
21 or	WORK (1,1,1,1) WORK (1,0,1,0)	If a log file specified If no log file specified
26	FILE filename (gen)	

3. Section 02 : Work File file specification

Item	Parameter	Notes
1	MAIN nnn	nnn is the Logical File Number as defined on Macro £TCQB on form 10.2
3	TYPE OVERLAY	
5	RESE n	A reserve file should be specified if recovery of the Work File is required (this is the recommended option).
6	MODE (SLOT,STAR)	
7	RETE (0,0,0,0,0,0)	
11	STOR n	The specified store chain must contain cells of at least 256 words in size.
12	ACCE (READ,WRITE,MYNEXT,RECORD,SPECIFIC)	
17	FALL ALTE	This is the recommended recovery option if a reserve specified.
21	WORK (1,0,1,0)	
26	FILE filename (fgn)	

4. Section 02 : User file specifications

The TPSM parameters for user files to be accessed via TPS-access should be specified in the standard way, but noting the following points:

- it is not necessary for the files to be defined as open at start of day (parameter STAR to Keyword MODE). TPS-access conditionally opens the files required as part of the processing of a query.

- files will be accessed for "browsing" so parameter MYNE must be specified on Keyword ACCE

3.6.2 TPSR Parameters

The program TPSR is used to update the System File with details of Personal Password data. Within the TPS-access system, the Personal Passwords mechanism is used to assign a user access rights in nominated Subjects and Topics.

The standard form of TPSR parameters for TPS application systems is described in Part 3 of the System Generation Manual, and the Standard form for TPS-access Systems in Section 4.4 of this manual.

Where the Personal Password system is to be used only for the TPS-access system, and not for any user applications, the standard form of parameters is used : see Section 4.4.

Where the Personal Password system is to be used for both TPS-access and user applications, the General Details (Section 00) are completed according to the System Generation Manual, Part 3. For the Password Details (Section 01),it is necessary to specify the users' access rights to Subject and Topics in terms of the Keywords USER and SUPE which are described in the System Generation Manual.

Parameters should be specified as follows:

    SUPE (x/A) assigns access rights to Subject x (x in range A-W)
    USER(x/y) assigns access rights to Topic y in Subject x (x,y in
        range A-W).

For details of allocation of alphabetic codes to Subjects and Topics, refer to the parameters for program TPQA described in Section 4.2 of this Manual.

It is important to realise that the same set of access right specifications are used for both TPS-access and the user applications. For example, if the following parameters are specified for a user:

```
TPSR0101 NUMBER 7, PASS AZX 1257
TPSR0102 SUPE (A/AB), USER (A/A-W)
TPSR0103 USER (B/BDE)
```

Then the following application access rights are assigned:

- supervisor rights in transaction groups AA and AB
- user rights in the whole of application A
- user rights in transaction groups BB,BD and BE

and also the following TPS-access rights

- access to Subject A
- access to all Topics in Subject A
- access to Topics B,D,E of Subject B

It may, therefore, be necessary to ensure that letters assigned to
Applications and Subjects are mutually exclusive.

3.7 SETTING UP A FORMAT FILE FOR USE WITH TPS-ACCESS

The Format File for use with TPS-access must be in TPS3 format, created using the TPS3 System Definition procedures. The method for setting up a TPS3 Format File is fully described in the TPS3 System Definition Manual.

The interactive System Definition procedures must be used to add a "short" entry for the TPS format ZQWF into the user System Definition File. This format must be included for a TPS-access program; the function ZQWF is required in order to initialise the TPS-access Work File.

ACCI-0381

4. INPUT PARAMETER FORMATS FOR TPS-ACCESS UTILITIES

4.1 GENERAL DESCRIPTION

4.1.1 The TPS-access Utilities

There are three TPS-access utility programs:

- TPQA, which creates records for the TPS-access Dictionary

- TPQB, which updates the TPS-access Dictionary

- TPSR, which creates Password data on the TPS-access System file.

The circumstances under which these utilities are used is described fully in earlier sections of this manual: in Section 2 for users of free-standing TPS-access, or Section 3 for users of TPS-access with TPS.

Operating instructions for these utilities appear in Appendix A to this manual.

The input parameter files for each of these utilities are in very similar formats. A general description of the structure of the file and the format of input records follows here.

4.1.2 Structure of the Input File

The input file is prepared in card image. Details of its contents are given in the following sections:

    Section 4.2 for program TPQA
    Section 4.3 for program TPQB
    Section 4.4 for program TPSR

The file is divided into Sections; the first Section provides general information and determines the disc files to be used by the program. The remaining Sections each define one section of the user data for the TPS-access Dictionary or System file. Each Section is made up of one or more Specifications defining the various elements. Each Specification is made up of one or more Items, which may be defined by a number of Parameters.

4.1.3 Format of Input Records

A "record" in the file is the contents of one card. Each record may be either a comment record or a parameter record.

A comment record is indicated by the first four characters of the record being spaces. The remainder of the card is then free-format

and may be used to provide comments (for example, as to the significance of the following parameter in Application terms). Comment records are printed out as part of a parameter listing, but are otherwise ignored by the Program. The comment record facility is available with utilities TPQA and TPQB, but not TPSR.

The first four characters of each parameter record are the program identifier, i.e TPQA, TPQB OR TPSR. These are followed (without space or separator) by a two digit Section identifier. The start of a new Section is signified by the appearance of a new Section number in this field in a record.

The Section number is followed (without space or separator) by a two digit sequence number. The cards that make up a particular Specification are numbered consecutively from 01. The start of a new Specification is indicated by the return to the sequence number 01.

Within each Specification, Items are identified by Keywords. Keywords are up to 16 characters in length, but may be entered in an abbreviated form by specification of the leading part of the Keyword; a minimum of four characters must be entered.

For example, the Keyword, DESCRIPTION may be specified as

```
        DESCRIPTION
    or  DESCRIP
    or  DESCR
    or  DESC
but not DES
```

Note that this facility for abbreviation of Keywords is not available with program TPSR.

The first Keyword in a record follows after the eight-character header described above or, optionally, after one or more intervening spaces. Each new Item may be placed in a new card if desired. Where more than one Item is present in a single card, the Items are separated by a comma and, optionally, one or more spaces.

If an Item has a single Parameter, it will follow after a single space. If an Item has more than one Parameter they will be enclosed in parentheses with a space separating the Item from the left hand parenthesis. Parameters within parentheses are separated by commas, but no comma follows the last one.
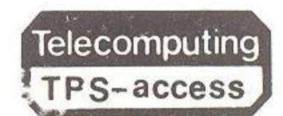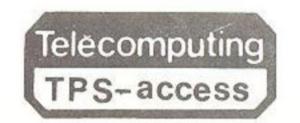
Note that commas are used as parameter terminations, and may not therefore be specified as part of any Parameter value.

The possible formats of Records may therefore be summarised as follows:

xxxxnnmm ITEM, ITEM (PARAM,PARAM),ITEM PARAM

The input file is terminated by a record containing "****" in the first four character positions.

ACCI–0381

– 4-4 –

4.2   PARAMETER RECORD CONTENTS : PROGRAM #TPQA

TPQA is a program to produce a serial file of records for creation of a TPS-access Dictionary from input parameters on cards, a TPS-access Base Dictionary and, optionally, an existing TPS-access Dictionary.

4.2.1 Section 01 : General Details

This Section includes information to specify the mode of operation of the program, and parameters defining the disc files to be used. The Section consists of a single Specification.

Item 1 : Keyword VALIDATE

This Item is optional, and has no parameters. It is specified to indicate that the program is to run in Validate Mode : the input parameters are to be validated and the appropriate line printer listings produced, but no output file of dictionary records is written.

Item 2 : Keyword CREATE

This Item is optional, and has no parameters. It may be specified to indicate that the program is to run in Create Mode, creating an output file of Dictionary records as well as validating the input parameters and producing the appropriate line printer listings.

This Item may be specified only if Item 1 (Keyword VALIDATE) is omitted. If Items 1 and 2 are both omitted, the program will run in Create Mode.

Item 3 : Keyword NOPRINT

This Item is optional, and has no parameters. It is specified to indicate that a line printer listing of the input cards is not to be produced; the error report only is to be printed.
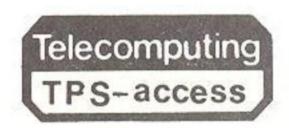
Item 4 : Keyword PRINT

This Item is optional, and has no parameters. It may be specified to indicate that a line printer listing of the input cards is to be produced in addition to the error report.

This Item may be specified only if Item 3 (Keyword NOPRINT) is omitted. If Items 3 and 4 are both omitted, the listing of input cards is printed.

ACCI-0381

#TPQA

Item 5 : Keyword BDICTIONARY

This Item is mandatory if the program is to run in Create Mode, and is not relevant if the program is to run in Validate Mode. This Item defines the input Base Dictionary file.

Format : BDICTIONARY filename(fgn)

filename = name of the Base Dictionary file : up to 12 alpha-numeric, space or minus characters with the first character alphabetic. This will usually be he name of the Base Dictionary as issued : i.e. TPSACCESS-BD

fgn = file generation number, in range 0 to 4095. This may be omitted, in which case the associated parentheses are also omitted. If omitted, the highest generation of the file online is opened.

Item 6 : Keyword CDICTIONARY

This Item is optional if the program is to run in Create Mode, and is not relevant if the program is to run in Validate Mode. This Item is used to define the input Current Dictionary file, which is required if Table records created interactively are to be carried forward to the new Dictionary.

Format : CDICTIONARY filename(fgn)

filename = name of the current Dictionary file : up to 12 alpha-numeric, space or minus characters with the first character alphabetic.

fgn = file generation number, in range 0 to 4095. This may be omitted, in which case the associated parentheses are also omitted. If omitted, the highest geneation of the file online is opened.

Item 7 : Keyword NDICTIONARY

This Item is mandatory if the program is to run in Create Mode and is not relevant if the program is to run in Validate Mode. This Item defines the output file to hold the new Dictionary records.

- 4-6 -

ACCI-0381

#TPQA

Format : NDICTIONARY filename(fgn)

filename = name of the output file to hold the new
             Dictionary records : up to 12 alpha-numeric,
             space or minus characters with the first
             character alphabetic.

fgn   = file generation number, in range 0 to 4095.
             This may be omitted, in which case the
             associated parentheses are also omitted. If
             omitted, the highest generation of the file
             online is opened.

Examples

1. The parameter cards are to be validated only, producing a listing
    of the input cards.

        TPQA0101 VALIDATE
    or
        TPQA0101 VALI, PRIN

2. New Dictionary records are to be created in the file HBAC-NEWDIC,
    generation 10. Input files are latest generation of the standard
    issued Base Dictionary, and the current Dictionary HBAC-CURRDIC,
    generation zero. No listing of the input cards is to be produced.

        TPQA0101 NOPRINT
        TPQA0102   BDIC TPSACCESS-BD
        TPQA0103   CDIC HBAC-CURRDIC(0)
        TPQA0104   NDIC HBAC-NEWDIC(10)

#TPQA

4.2.2 Section 02 : System Specification

This Section consists of a single Specification defining details
which are applicable to the whole TPS-access system.

Item 1 : Keyword SYSTEM

This Item is mandatory, and defines the System Name which is
included in the Status Area of each TPS-access screen
displayed.

Format : SYSTEM systemname

systemname = name to be given to the TPS-access system. The
system name may be entirely free-format but the
simplest form will be an upper case string. (A
mixed upper and lower case string looks better
on the screen; to set it up in this way, see
Appendix B).

Example

The TPS-access system is named 'NORTHERN DIVISION INFORMATION SYSTEM'

TPQA0201 SYSTEM NORTHERN DIVISION INFORMATION SYSTEM

4.2.3 Section 03 : Element Specification

This Section consists of a number of Specifications, all of which are of the same type, each defining an Element within the system.

Item 1 : Keyword ELEMENT

This Item is mandatory, and is used to define the name of the Element. This Element name is displayed during the creation of a New Table to identify Elements which may be selected, and is also displayed as the column heading within the Table.

Format : ELEMENT elementname

elementname = name of the element; up to 16 characters. The element name may not include spaces, and may otherwise be entirely free-format,but the simplest form will be an upper case string. (A mixed upper and lower case string looks better on th screen; to set it up in this way, see Appendix B).

Note that the displayable length of the Element name is a factor in determining the number of Elements which may be included in a Table. The size of each column in a Table is the greater of

- element name length
- element picture length + 2

Thus if a long element name is assigned to a short Element the screen area available for display of other data Elements is considerably reduced.

Item 2 : Keyword DESCRIPTION

This Item is optional, and may be used to define a Glossary record for the Element. This gives a brief description which will be displayed in response to a 'Help' request for information about the Element when its name is encountered in a Menu when creating a New Table.

#TPQA

This Item defines details to be displayed on a single line
of the screen; the Item is exceptional in that the Keyword
may be repeated in order to specify up to 5 lines of
description.

Format : DESCRIPTION detail

detail = portion of the description of the Element to be
displayed on a single line of the screen,
commencing in column 11.

The description is entirely free-format, but the
the simplest form will be an upper case string. (A
mixed upper and lower case string looks better on
the screen; to set it up in this way, see Appendix
B).

Item 3 : Keyword PICTURE

This Item is mandatory and is used to specify the
characteristics of an Element for display. (For consistency
with COBOL usage, the abbreviation PIC is accepted).

Format : PICTURE picturetype

picturetype = character string describing the
characteristics and editing requirements for
an Element.

Elements are of three main types:

String elements
Date elements
Numeric elements

String elements:

The Picture definition consists of a string of
'X's each of which represents one character
position with contents from the standard 64-
character set. The Picture may be written more
briefy by the use of a left and right
parenthesis pair, enclosing one or more
numeric digits, and preceded by an 'X'.
e.g. X(5) means the same as XXXXX.

Date elements:

The Picture definition is made up of the following elements:

DD   representing two character positions containing the day portion of the date.

MM   representing two character positions containing the month portion of the date

YY   representing two character positions containing the year portion of the date.

Any of the following four date pictures are valid:

> DDMMYY
> YYMMDD
> MMYY
> YYMM

A separator character may be nominated to appear between day/month and month/year portions of the date. This may be any character except zero. (e.g. DD/MM/YY, YY.MM)

Numeric elements:

The following characters assign characters of storage to the Element. The position of the character within the Element is indicated by the position of the character within the Picture's character string.

Character	Meaning
9	Represents a decimal digit
Z	Represents a character position with contents from the set 0 to 9 and space (provides "zero suppression" facility).
-	Represents a character position with contents from the set space and - .
.	Represents a character position which contains the character . .

#TPQA

The character V represents the position to be
assumed for the decimal or binary point. This
affects the meaning of operations performed on
the Element, but does not cause storage to be
assigned.

The Picture may be written more briefly by the
use of a left and right parenthesis pair,
enclosing one or more numeric digits. The
character immediately preceding the left
parentheses is considered to appear as many
times as indicated by the number in the
parentheses: e.g. 9(6) means 999999

The table below shows the combinations of
fields which are valid and invalid pictures.

Following Character

Preceding
Character

	9	Z	—	.	V
9	X		X	X	X
Z	X	X		X	X
—	X	X		X	X
.	X		X		X
V	X			X	

Notes:

1. X means the combination is valid
   Blank means the combination is invalid.

2. Only one occurrence of . and V may be
   included within the Picture.

3. There may only be one + or — in the Picture
   which must be either the first or the last
   character specified.

Item 4 : Keyword SPECIFICATION

This Item is optional, and may be used to define a second Glossary record for the Element. This gives a brief description which will be displayed in response to a 'Help' request for information about the Element when formulating a query. The description should therefore indicate how the Element is to be entered. Where this Item is omitted, the description specified for the Element (Keyword DESCRIPTION) is instead displayed. This Item defines details to be displayed on a single line of the screen; the Item is exceptional in that the Keyword may be repeated in order to specify up to 5 lines of description.

Format : SPECIFICATION detail

detail = portion of the description of the Element to be displayed on a single line of the screen, commencing in column 11. The description is entirely free-format, but the simplest form will be an upper case string. (A mixed upper and lower case string looks better on the screen; to set it up in this way, see Appendix B).

Examples

1. The six digit Element Customer Account Number (CUSTACCNO) is to be specified with Description:

       CUSTOMER ACCOUNT NUMBER – ALLOCATED WHEN THE ORDER
       IS FIRST ACCEPTED BY THE ACCOUNTS DEPARTMENT

and Specification

       CUSTOMER ACCOUNT NUMBER : IN RANGE 100000 TO 999999
       RANGE 800000 TO 999999 RESERVED FOR OVERSEAS ACCOUNTS.

```
TPQA0301 ELEMENT CUSTACCNO
TPQA0302  DESC CUSTOMER ACCOUNT NUMBER – ALLOCATED WHEN THE ORDER
TPQA0303   DESC IS FIRST ACCEPTED BY THE ACCOUNTS DEPARTMENT
TPQA0304   PICTURE 9(6)
TPQA0305  SPEC CUSTOMER ACCOUNT NUMBER – IN RANGE 100000 TO 999999.
TPQA0306   SPEC RANGE 800000 TO 999999 RESERVED FOR OVERSEAS ACCOUNTS
```

#TPQA

2. The Element Order Date (ORDER-DATE) is to be displayed in format
   dd/mm/yy. The Help Description/Specification is:

       ORDER DATE — THE DATE ON WHICH THE CUSTOMER PLACED
                    THE ORDER (IN THE FORM DD/MM/YY).

       TPQA0301 ELEMENT ORDER-DATE
       TPQA0302   DESC ORDER DATE — THE DATE ON WHICH THE CUSTOMER PLACED
       TPQA0303   DESC   THE ORDER (IN THE FORM DD/MM/YY)
       TPQA0304   PIC DD/MM/YY

3. The Element Order Value (ORDER-VALUE) is a signed numeric field
   with up to 8 digits before the decimal point and three digits
   after the point. To be displayed zero suppressed with a trailing −
   symbol if negative. No description or specification necessary.

       TPQA0301 ELEMENT ORDER-VALUE
       TPQA0302 PICTURE Z(7)9.999−

4. The 40-character string Element Customer Name (CUST-NAME) is to be
   specified with no description or specification.

       TPQA0301 ELEM CUST-NAME, PICT X(40)

4.2.4 Section 04 : Field Specification

This Section consists of a number of Specifications, each defining a Field within the system. Each field is part of a Standard Record and thence a Physical Record; details of both these records are defined as part of the Field Specification.

Each Specifiction may consist of three portions:

    Physical Record details
    Standard Record details
    Field details

Field details are present in all Specifications. On any Specification other than the first the Physical and Standard Record details may be omitted where the Field forms part of the Physical and Standard Records last defined. Similarly the Physical Record details may be omitted when defining second and subsequent Standard Records within a Physical Record.

The Physical Record details consist of Items 1 to 6 below; the Standard Record details Items 7 and 8; and the Field details are defined by Items 9 to 14.

Item 1 : Keyword PRECORD

This Item is mandatory on the first Specificationonly, and is used to define the name of the Physical Record. Where this Item is omitted, the Field is assumed to be part of the Physical Record last defined.

Format : PRECORD recordname

recordname = name of the Physical Record; up to 16 characters from the Standard 64-character set. This name is used internally by TPS-access to identify the Physical Record, but is not included in any TPS-access display.

Item 2 : Keyword KEYLENGTH

This Item is optional, and may be specified only when Item 1 (Keyword PRECORD) is also specified. The Item is used to define the key length for Index-Sequential files. For serial files this Item is omitted.

Format : KEYLENGTH length

length = the length, in characters, of the key on the Index Sequential file; in range 1 to 64.

ACCI-0381

#TPQA

Item 3 : Keyword KEYDISPLACEMENT

This Item is optional : it must be specified when Item 2
(Keyword KEYLENGTH) is specified, and must be omitted
otherwise. The item is used to define the position of the
key within the record for Index-Sequential files.

Format : KEYDISPLACEMENT displacement

displacement = number of characters in the Physical Record
preceding the key for an Index-Sequential
file.

Item 4 : Keyword COBVARIABLE

This Item is optional and may be specified only when Item 1
(Keyword PRECORD) is also specified. The Item is used to
indicate that the Physical Record is in 'COBOL variable'
form: i.e consisting of a fixed part which is always present
followed by a portion of fixed-length which is present a
variable number of times according to the value held in a
field within the fixed part of the record.

A single Physical Record of this type produces one or more
Standard Records, with each Standard Record consisting of
the fixed part of the record followed by one occurrence of
the variable portion.

Format : COBVARIABLE (fixed,variable,displacement)

fixed   = length in characters of the fixed part of the
              Physical Record.

variable   = length in characters of the portion of the
              Physical Record which occurs a variable
              number of times.

displacement = number of characters in the Physical Record
               preceding the field which holds the actual
               number of occurrences of the variable portion
               of the record. The occurrences field must be
               a one-word binary field (i.e. COBOL Picture
               9(6) COMP SYNC RIGHT).

ACCI-0381

Item 5 : Keyword FLATRECORD

This Item is optional and may be specified only when Item 1 (Keyword PRECORD) is also specified. The Item is used to indicate that the Physical Record is a 'flat' record, so that each physical record read from the file produces a single record in Standard Record Form. This Item has no parameters.

This Item may be specified only if Item 4 (Keyword COBVARIABLE) is omitted. If Items 4 and 5 are both omitted, it is assumed that the Physical Record is in 'flat' format.

Item 6 : Keyword SYMBOLIC

This Item is optional : it must be specified when Item 1 (Keyword PRECORD) is specified, and must be omitted otherwise. The Item is used to define the file which holds the Physical Record.

Format : SYMBOLIC lfn

lfn = Logical File Number within the TPS-access system of the file holding the Physical Record.

Item 7 : Keyword SRECORD

This Item is mandatory on any Specification which includes the definition of a Physical Record (i.e. Item 1, Keyword PRECORD present) and is optional otherwise. It is used to define the name of the Standard Record, which is displayed as part of the selection procedures during the creation of a New Table. Where this Item is omitted, the Field is assumed to be part of the Standard Record last defined.

Format : SRECORD recordname

recordname = name of the Standard Record; up to 16 characters. The record name is free-format, but may the simplest form will be an upper case string. (A mixed upper and lower case string looks better on the screen; to set it up in this way, see Appendix B).

ACCI-0381

#TPQA

Item 8 : Keyword DESCRIPTION

This Item is optional and may be specified only when Item 5 (Keyword SRECORD) is specified. The Item is used to define a Glossary record for the Standard Record, giving a brief description which will be displayed in response to a 'Help' request for information about the Standard Record when its name is encountered in a Menu when creating a New Table. This Item defines details to be displayed on a single line of the screen; the item is exceptional in that the Keyword may be repeated in order to specify up to 5 lines of description.

Format : DESCRIPTION detail

detail = portion of the description of the Standard Record to be displayed on a single line of the screen, commencing in column 11. The description is entirely free-format, but the simplest form will be an upper case string. (A mixed upper and lower case string looks better on the screen; to set it up in this way, see Appendix B).

Item 9 : Keyword FIELD

This Item is mandatory, and is used to define the name of the Field.

Format : FIELD fieldname

fieldname = name of the Field; up to 16 characters from the standard 64-character set. This Name is used internally by TPS-access to identify the Field, but it is not included in any TPS-access display.

Item 10 : Keyword DISPLACEMENT

This Item is mandatory and is used to define the position of the Field within the Standard Record. The position is defined as the word/character/bit at which the Field begins.

Format : DISPLACEMENT word.character.bit

word = the word position at which the Field begins. Words within a record are numbered from zero.

ACCI-0381

character = the character position at which the field begins. This may be defined either within the specified word, with characters within a word numbered 0,1,2 and 3; or as the displacement in characters from the start of the record. In the second case the word parameter is omitted, and the character displacement, numbered from zero, is preceded by a full stop. Where the word position is specified and a field is aligned on a word boundary (i.e. character position 0) this parameter may be omitted. If omitted the preceding and following full stops and the bit parameter must also be omitted.

bit = the bit position at which the Field begins, defined within the specified character. The bits within a character are numbered 0 to 5. For a field aligned on a character boundary (i.e. bit position 0) this parameter may be omitted. If omitted the preceding full stop must also be omitted.

Item 11 : Keyword PICTURE

This Item is mandatory and is used to specify the characteristics of the Field. (For consistency with COBOL usage the abbreviation PIC is accepted).

Format : PICTURE picturetype

picturetype = character string describing the characteristics of the Field.

Fields are one of four main types:

    String fields
    Date fields
    Numeric fields
    Binary fields

String fields:

The Picture definition consists of a string of 'X's each of which represents one character position with contents from the standard 64-character set. The picture may be written more briefly by the use of a left and right parenthesis pair, enclosing one or more numeric digits, and preceded by an 'X'. e.g. X(5) means the same as XXXXX.

- 4-19 -

#TPQA

Date fields

The Picture definition is made up of the following elements:

DD representing two character positions containing the day portion of the date.

MM representing two character positions containing the month portion of the date.

YY representing two character positions containingthe year portion of the date.

Any of the following date pictures are valid:

    DDMMYY
    YYMMDD
    MMYY
    YYMM

Numeric fields

The following characters assign characters of storage to the Field. The position of the character within the Field is indicated by the position of the character within the Picture's character string.

Character   Meaning

9   represents a decimal digit

S   indicates that the field has a signed nueric value.

V   represents the position to be assumed for the decimal point (this affects the meaning of operations performed on the field, but does not cause storage to be assigned).

If S is specified this must be the first character of the Picture. A single occurrence of V may be included. Otherwise the Picture consists of 9's. The Picture may be written more briefly by the use of a left and right parenthesis pair, enclosing one or more numeric digits, and preceded by a '9'. e.g. 9(5) means the same as 99999.

ACCI-0381

For a signed numeric field, the sign may be held either as a separate character, or by a special coding ("overpunching") of the leftmost numeric character. To specify that the sign is to be held as an additional character, preceding those in the field, the Picture character string must be followed by a space and the legend 'DISPLAY-3'. In this case the sign character is + or space for positive value and - for negative values. Where 'DISPLAY-3' is not specified, if a field is negative the numbers 1 to 9 in the left most character position appear as J to R respectively and a leading zero appears as - .
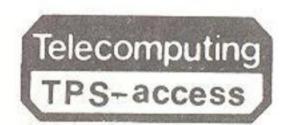
Binary Fields

Binary Fields fall into three groups:

- word fields
- binary date fields
- bit fields

Word fields may be one or two words in length: up to six decimal digits may be held in a single binary word, and up to twelve decimal digits as a two-word binary field.

The Picture consists of a character string composed of the characters '9', 'S', 'V' (and left and right parenthesis pairs if required) as dscribed above for numeric fields, followed by a space and the legend 'CSR' (for Computational Synchronised Right as in COBOL usage).

A binary date field is a single word binary field which holds a date as the number of days since 1900. This is specified as for a Standard binary Word field (e.g. 9(6) CSR) followed by a space and the legend 'DAYS'.

ACCI-0381

#TPQA

The Picture of a bit field is defined using the characters 'l' which represents a binary degit and 'S' which indicates that the field has a signed numeric value. If 'S' is specified this must be the first character of the Picture; it occupies a single bit position. The Picture may be written more briefly by the use of a left and right parenthesis pair, enclosing one or more numeric digits and preceded by a 'l'. e.g. 1(5) means the same as 11111.

Item 12 : Keyword KEYTYPE

This Item is optional and is used to indicate that the Field forms part of the key of a record in an Index-Sequential file.

Format : KEYTYPE keytype

keytype =   an indicator of the position of this Field within the key. The key type may have the following values:

1 - this Field is the first part of the key (or the whole key)

2 - this field is the second part of the key

3 - this field is the third part of the key

The Fields defined as keytypes 1,2 and 3 must consecutively form the leading part of the key. It is not necessary to define the complete key.

Item 13 : Keyword RECORDTYPE

This Item is optional and is used to indicate that this field contains a fixed value, which serves to identify the Standard Record in cases format Standard Records of different formats are included in a single file.

Format : RECORDTYPE identifier

identifier =   value in the field which identifies the Standard Record. The value specified must be a character string of the appropriate length.

Item 14 : Keyword ELEMENT

This Item is mandatory when Item 13 (Keyword RECORDTYPE) is not specified, and optional when Item 13 is present. This item is used to define the Element that the field maps on to for display purposes.

Format : ELEMENT elementname

elementname = name of the element; up to 16 characters. The element name specified must be defined in Section 3 (Item 1, Keyword ELEMENT). The Dictionary update program (#TPQB) is subsequently run to check that all Elements referenced have been defined.

#TPQA

Example

The Standard Record 'Contractors' is formed from the Physical Record
'CONTRACT-REC', which is a 'flat' record held in the Index-Sequential
file Logical File Number 3, with a 12 character key commencing at the
9th character of the record.

The Standard Record is described as follows:

"THIS STANDARD RECORD GIVES DETAILS OF EACH CONTRACTOR
WHO MAY UNDERTAKE BUILDING WORK FOR THE COUNCIL. THE
CONTRACTOR MAY BE EITHER AN INDIVIDUAL OR A COMPANY.
THIS INCLUDES ELEMENTS CON-DATE AND CONTRACTOR."

The following Fields are to be included in the Standard Record:

Field : CONTRACT-DATE
  This is a binary date field held, which starts in the fifth
  character of the record. Element Name : CON-DATE.

Field : CONTRACTOR-NO
  This is a six digit numeric field which forms the leading
  part of the key, and commences in the 9th character of the
  record. Element Name : CONTRACTOR

Field : CONTRACT-NO
  This is a six-character string field which forms the minor
  part of the key and follows the CONTRACTOR-NO. This standard
  record is identified by a value of zero in this field. The
  field is never displayed so has no associated Element.

```
TPQA0401 PRECORD CONTRACT-REC
TPQA0402    KEYLENGTH 12, KEYDISPLACEMENT 8
TPQA0403    FLATRECORD
TPQA0404    SYMBOLIC 3
TPQA0405 SRECORD C]ONTRACTORS
TPQA0406    DESC THIS STANDARD RECORD GIVES DETAILS OF EACH CONTRACTOR
TPQA0407    DESC WHO MAY UNDERTAKE BUILDING WORK FOR THE COUNCIL. THE
TPQA0408    DESC CONTRACTOR MAY BE EITHER AN INDIVIDUAL OR A COMPANY.
TPQA0409    DESC THIS INCLUDES ELEMENTS CON-DATE AND CONTRACTOR.
TPQA0410 FIELD CONTRACT-DATE
TPQA0411    DISPLACEMENT 1
TPQA0412    PICTURE 9(6) CSR DAYS
TPQA0413    ELEMENT CON-DATE
TPQA0401 FIELD CONTRACTOR-NO
TPQA0402    DISP 2, PIC 9(6)
TPQA0403    KEYTYPE 1
TPQA0404    ELEMENT CONTRACTOR
TPQA0401 FIELD CONTRACT-NO
TPQA0402    DISP .14, PIC X(6), KEYT 2
TPQA0403    RECORDTYPE 000000
```
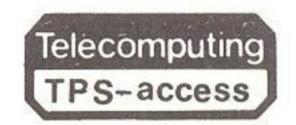
4.2.5 Section 05 : Subject and Topic Specification

This Section consists of a number of Specifications, all of which are of the same type, each defining a Topic within the System. Each Topic is a subdivision of a Subject; details of the Subject are also defined as part of the Topic specification.

Each Specification may consist of two portions:

    Subject details
    Topic details

Topic details are present in all Specifications. On any Specification other than the first the Subject details may be omitted where the Topic forms part of the Subject last defined.

The Subject details consist of Item 1 to 3 below, and the Topic details Items 4 to 6.
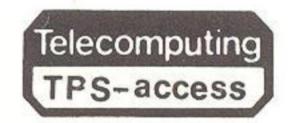
Item 1 : Keyword SUBJECT

This Item is mandatory in the first Specification only, and is used to define the name of the Subject. This subject name is included in the Status Area of every TPS-access screen displayed following selection of the Subject from the Subject Menu. Where this Item is omitted, the Topic is assumed to be part of the Subject last defined.

Format : SUBJECT subjectname

subjectname = name of the subject; up to 16 characters. The subject name may not include spaces and may otherwise be entirely free-format, but the simplest form will be an upper case string. (A mixed upper and lower case string looks better on the screen; to set it up in this way, see Appenix B).

Item 2 : Keyword : SDESCRIPTION

This Item is optional and may be specified only when Item 1 (Keyword SUBJECT) is present. The Item is used to define a Glossary record for the Subject. This gives a brief description which will be displayed in response to a 'Help' request for information about the Subject. This Item defines details to be displayed on a single line of the screen; the Item is exceptional in that the Keyword may be repeated in order to specify up to 5 lines of description.

ACCI-0381

#TPQA

Format : SDESCRIPTION detail

detail = portion of the description of the subject to be
displayed on a single line of the screen,
commencing in column 11. The description is
entirely free-format, but the simplest form will be
an upper case string. (A mixed upper and lower case
string looks better on the screen; to set it up in
this way, see Appendix B).

Item 3 : Keyword SCODE

This Item is optional : it must be specified when Item 1
(Keyword SUBJECT) is present, and must be omitted otherwise.
The Item is used to define the Code which is to identify the
Subject when defining the users' access rights to the
System.

Format : SCODE subjectcode

subjectcode = alphabetic code assigned to the subject; in
range A to W. Different codes must be assigned
to each Subject.

Item 4 : Keyword TOPIC

This Item is mandatory and is used to define the name of the
Topic. This topic name is included in the Status Area of
every TPS-access screen displayed following selection of the
Topic from the Topic Menu.

Format : TOPIC topicname

topicname =   name of the Topic; up to 16 characters. The
topic name may not include spaces and may
otherwsie be entirely free-format, but the
simplest form will be an upper case string. (A
mixed upper and lower case string looks better
on the screen; to set it up in this way, see
Appendex B).

Item 5 : Keyword TDESCRIPTION

This Item is optional and may be used to define a Glossary record for the Topic. This gives a brief description which will be displayed in response to a 'Help' request for information about the Topic. This Item defines details to be displayed on a single line of the screen; the Item is exceptional in that the Keyword may be repeated in order to specify up to 5 lines of description.

Format : TDESCRIPTION detail

detail =   portion of the description of the Topic to be displayed on a single line of the screen, commencing in column 11. The description is entirely free-format, but the simplest form will be an upper case string. (A mixed upper and lower case string looks better on the screen; to set it up in this way, see Appendix B).

Item 6 : Keyword TCODE

This Item is mandatory, and is used to define the Code which is to identify the Topic when defining the users' access rights to the system.
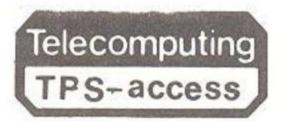
Format : TCODE topiccode

topiccode =   alphabetic code assigned to the Topic; in range A to W. Different codes must be assigned to each Topic within a single Subject.

Example

The Subject 'CONSTRUCTION', with Subject Code B, includes two Topics, INVOICING and CONTRACTORS, with Topic Codes C and K respectively.
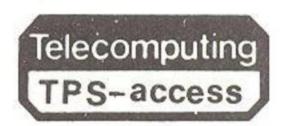
The descriptions of the Subject/Topics are as follows:

CONSTRUCTION:

   "THE CONSTRUCTION DEPARTMENT IS CONCERNED WITH THE
   INSPECTION OF NEW BUILDINGS AND BUILDING IMPROVEMENTS
   WITH A VIEW TO LEVYING THE APPROPRIATE TAXES."

INVOICING:

   "THE INVOICING SECTION ARE CONCERNED WITH THE CHARGING
   OF THE APPROPRIATE BUILDING AND PLUMBING FEES TO THE
   CONTRACTOR."

#TPQA

CONTRACTORS:

"THIS ALLOWS INSPECTION OF THE INFORMATION RECORDED FOR
EACH CONTRACTOR LICENCED BY THE COUNCIL."

```
TPQA0501 SUBJECT CONSTRUCTION
TPQA0502    DESC THE CONSTRUCTION DEPARTMENT IS CONCERNED WITH THE
TPQA0503    DESC INSPECTION OF NEW BUILDINGS AND BUILDING IMPROVEMENTS
TPQA0504    DESC WITH A VIEW TO LEVYING THE APPROPRIATE TAXES.
TPQA0505    SCODE B
TPQA0506 TOPIC INVOICING
TPQA0507    DESC THE INVOICING SECTION ARE CONCERNED WITH THE CHARGING
TPQA0508    DESC OF THE APPROPRIATE BUILDING AND PLUMBING FEES TO THE
TPQA0509    DESC CONTRACTOR.
TPQA0510    TCODE C
TPQA0501 TOPIC CONTRACTORS
TPQA0502    DESC THIS ALLOWS INSPECTION OF THE INFORMATION RECORDED FOR
TPQA0503    DESC EACH CONTRACTOR LICENCED BY THE COUNCIL.
TPQA0504    TCODE K
```

4.3 PARAMETER RECORD CONTENTS : PROGRAM #TPQB

TPQB is a program to update a TPS-access Dictionary with details from input parameters on cards, and to perform consistency checks on the contents of the Dictionary.

4.3.1 Section 01 : General Details

This section includes information to specify the functions to be performed by the program, and parameters defining the disc files to be used. The Section consists of a single Specification.

Item 1 : Keyword CROSSREFERENCE

This Item is optional, and has no parameters. It is used to indicate that a cross-reference check is to be performed on the Dictionary. This cross-reference reads all Standard Record definitions from the Dictionary, and checks that the Element records associated with each Field in the Standard Record are present in the Dictionary; the Element Record is updated with details of Field names associated with it. Details of missing Elements are printed in the error report; this function is thus providing additional validation of the parameters specified to the Dictionary creation program #TPQA.

A new Dictionary may not be used online in a TPS-access system until a successful cross-reference has been performed on the file.

Item 2 : Keyword CONSISTENCYCHECK

This Item is optional, and has no parameters. It is used to indicate that a consistency check is to be performed on the Dictionary. This consistency check reads all Table records from the Dictionary, and checks that the Subject and Topic referenced by the Table are present in the Dictionary. Note that these records must have been present when the Table was created, but in recreating the Dictionary the Table record may have been retained from the current Dictionary, but the Subject or Topic not redefined on the input parameters to the program #TPQA. An error report is produced of missing entries.

This function is automatically performed if Item 1 (Keyword CROSSREFERENCE) is specified.

ACCI-0381

#TPQB

Item 3 : Keyword VALIDATE

This Item is optional, and has no parameters. It is used to
indicate that the program is to run in Validate mode : the
input parameters defining Dictionary content are to be
validated and the appropriate line printer listings
produced, but the Dictionary file is not to be updated with
the input details.

Item 4 : Keyword UPDATE

This Item is optional, and has no parameters. It may be used
to indicate that the program is to run in Update mode,
updating the Dictionary with the details input as well as
validating the input parameters and producing the
appropriate line printer listings.

This Item may be specified only if Item 3 (Keyword VALIDATE)
is omitted. If Items 3 and 4 are both omitted, the program
will run in Update mode.

Item 5 : Keyword NOPRINT

This Item is optional, and has no parameters. It is used to
indicate that a line printer listing of the input cards is
not to be produced; the error report only is to be printed.

Item 6 : Keyword PRINT

This Item is optional, and has no parameters. It may be used
to indicate that a line printer listing of the input cards
is to be produced in addition to the error report.

This Item may be specified only if Item 5 (Keyword NOPRINT)
is omitted. If Items 5 and 6 are both omitted, the listing
of input cards is printed.

Item 7 : Keyword NDICTIONARY

This Item is mandatory, and is used to define the Dictionary
file to be updated.

Format : NDICTIONARY filename(fgn)

filename = name of the Dictionary file: up to 12 alpha-
           numeric, space or minus characters with the first
           character alphabetic.

fgn =   file generation number, in range 0 to 4095. This may be omitted, in which case the associated parentheses are also omitted. If omitted, the highest generation of the file online is opened.

Examples

1. A cross-reference check is to be performed on the Dictionary file HBAC-DICT, generation 5, and it is to be updated with details from the input parameters. The input cards are to be listed.

      TPQB0101 CROS, NDIC HBAC-DICT(5)

or

      TPQB0101 CROSSREFERENCE, UPDATE, PRINT
      TPQB0102   NDICTIONARY HBAC-DICT(5)

2. A consistency check is to be performed on the highest generation of Dictionary file ACCESSDICT. The input parameter cards are to be validated only; no listing of them is required.
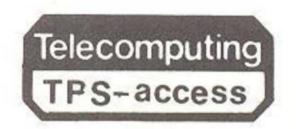
      TPQB0101 CONS, VALI, NOPR, NDIC ACCESSDICT

or

      TPQB0101 CONSISTENCYCHECK
      TPQB0102   VALIDATE
      TPQB0103   NOPRINT
      TPQB0104   NDICTIONARY ACCESSDICT

#TPQB

4.3.2 Section 02 : Standard Record Allocation Specification

This Section consists of a number of Specifications, all of which are of the same type, each defining a Standard Record and a Subject and Topic to which it is to be allocated.

Item 1 : Keyword SRECORD

This Item is mandatory on the first specification only, and is used to define the name of the Standard Record. Where this Item is omitted, the Subject and Topic details apply to the Standard Record last named.

Format : SRECORD recordname

recordname = name of the Standard Record; up to 16 characters. The name specified must be present in the Dictionary (set up by Dictionary create program : see #TPQA parameters, Section 4, Item 7, Keyword SRECORD).

Item 2 : Keyword SUBJECT

This Item is optional and is used to define the name of a Subject in which the Standard Record is to be available.

.Format : SUBJECT subjectname

subjectname = name of the Subject; up to 16 characters. The name specified must be present in the Dictionary (set up by the Dictionary create program : see #TPQA parameters, Section 5, Item 1, Keyword SUBJECT).

Item 3 : Keyword TOPIC

This Item is mandatory if Item 2 (Keyword SUBJECT) is specified and must be omitted otherwise. It is used to define the name of a Topic within the subject defined in Item 2 in which the Standard Record is to be available.

Format : TOPIC topicname

topicname = name of the Topic; up to 16 characters. The name specified must be present in the Dictionary (set up by the Dictionary create program #TPQA : see Section 5, Item 4, Keyword TOPIC).

ACCI-0381

Item 4 : Keyword CODE

This Item is optional, and is used to define a Subject/Topic
in which the Standard Record is to be available in terms of
the Subject and Topic codes.

This Item must be specified if Item 2 (Keyword SUBJECT) is
omitted.

Format : CODE code

code =   two character alphabetic code, with each character
in the range A to W. The first character gives the
Subject code, the second the Topic code. The
Subject/Topic code combination must be present in
the Dictionary (set up by the Dictionary create
program : see #TPQA parameters, Section 5, Items 3
and 6, Keywords SCODE and TCODE).

Example

The Standard Record 'BUILDING FEES' is to be available in the
following Subjects/Topics.

Subject	Topic	Code
CONSTRUCTION	INVOICING	AC
ACCOUNTS	CONSTRUCTION	CB
	PAYMENTS	CC

```
TPQB0201 SRECORD BUILDING FEES
TPQB0202    SUBJECT CONSTRUCTION
TPQB0203    TOPIC INVOICING
TPQB0201    SUBJECT ACCOUNTS
TPQB0202    TOPIC CONSTRUCTION
TPQB0201    SUBJECT ACCOUNTS
TPQB0202    TOPIC PAYMENTS
```

or

```
TPQB0201 SREC BUILDING FEES, CODE AC
TPQB0201    CODE CB
TPQB0201    CODE CC
```

- 4-33 -

#TPQB

4.3.3 Section 03 : User Name Specification

This Section consists of a number of Specifications, all of which are of the same type, each defining a User Number and associated User Name.

Item 1 : Keyword USERNO

This Item is mandatory and defines a User Number.

Format : USERNO number

number =   number assigned to the user for privacy checks, in range 1 to 9999. This user number should also be specified in the Password Data (see #TPSR parameters, Section 01, Item 1, Keyword NUMBER).

Item 2 : Keyword NAME

This Item is mandatory and defines the name to be assigned to the User Number. This name is displayed in the Status Area of each TPS-access screen following the entry of the User Number and its associated password.

Format : NAME username

username = name of the User; up to 24 characters. The User Name is free-format, but the simplest form will be an upper case string. (A mixed upper and lower case string looks better on the screen; to set it

Example

The following user numbers and user names are to be included in the Dictionary:
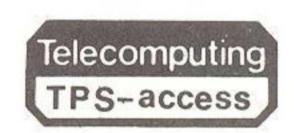
User Number	User Name
7	JAMES SMITH
23	SUSAN MCDONNELL
1397	JANICE SKINNER

```
TPQB0301 USERNO 1, NAME JAMES SMITH
TPQB0301 USERNO 23
TPQB0302   NAME SUSAN MCDONNELL
TPQB0301 USER 1397, NAME JANICE SKINNER
```

ACCI-0381

4.4   PARAMETER RECORD CONTENTS : PROGRAM #TPSR

#TPSR is the TPS-access program to set up and maintain Password data on the System file.

4.4.1 Section 00 : General Details

This Section includes information to specify the mode of operation of the program, and parameters defining the disc files to be used. The Section consists of a single Specification.

Item 1 : Keyword SERV

This Item is mandatory and is used to indicate that Password data for TPS-access is to be defined by the Section 01 Specifications following.

Format : SERV ACCESS

Item 2 : Keyword PFILE

This Item is mandatory and is used to define the Password file to be created or updated with the information input on the parameter cards.

Format : PFILE filename(fgn)

filename =   name of the Password file to be created or updated : up to 12 alpha-numeric, space or minus characters, with the first character alphabetic.
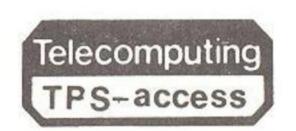
fgn =   file generation number, in range 0 to 4095. This may be omitted, in which case the associated parentheses are also omitted. If omitted, the highest generation of the file online is opened.

Item 3 : Keyword SFILE

This Item is mandatory if the Password data is to be copied to the System File (Item 5, Keyword COPY specified), and is not relevant otherwise. It is used to define the System file which is to be updated with the Password data.

Format : SFILE filename(fgn)

filename =   name of the System file to be updated : up to 12 alpha-numeric, space or minus characters with the first character alphabetic.

ACCI-0381

#TPSR

fgn =   file generation number, in range 0 to 4095. This
                    may be omitted, in which case the associated
                    parentheses are also omitted. If omitted, the
                    highest generation online is opened.

Item 4 : Keyword CLEAR

This Item is optional, and has no parameters. It may be
specified to indicate that the program is to run in Create
mode, initialising the Password file by zeroising the
appropriate buckets before updating the file with the
details input on the parameter cards. If this Item is
omitted, the details input are added into the existing
Password file.

Item 5 : Keyword COPY

This Item is optional, and has no parameters. It may be
specified to indicate that the System file is to be updated
with all the password data from the Password file. If this
Item is omitted, the System file is not updated.

Item 6 : Keyword USERMAX

This Item is mandatory if Item 4 (Keyword CLEAR) is present,
and is optional otherwise. It is used to specify the maximum
user number to be allocated : this determines the size of
the Password file and the number of buckets required on the
System file to hold Password data. Where the Password file
is to be updated, this Item must be present if user numbers
greater than the previously specified maximum are to be
defined.

Format : USERMAX maximum

maximum =   maximum user number to be specified in Section
             01 Parameters : in range 1 to 9999.

Item 7 : Keyword ERRORLIMIT

This Item is optional and is used to specify the number of
abortive tries which may be made to input a password before
the terminal is closed by the TPS-access system. If the Item
is omitted when Item 4 (Keyword CLEAR) is present, there is
no limit on the number of attempts which may be made to
input a password.

Format : ERRORLIMIT current/cumulative

ACCI-0381

current =   number of abortive tries to input a password which may be made in one series of attemps before the terminal is closed by the TPS-access system: in range 0 to 1000. If specified as zero, there is no limit to the number of attempts which may be made to input a password.

cumulative = number of abortive tries to input a password which may be made during one session before the terminal is closed by the TPS-access system : in range 0 to 1000. If specified as zero, there is no limit to the number of attempts which may be made to input a password.
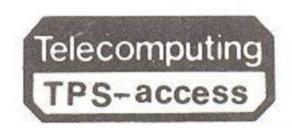
Examples

1. Password data is to be created in generation 5 of the Password file TPSACCESS-PF, and copied to the System file TPSACCESS-SF, generation 5. The maximum user number to be specified is 127. Five retries may be made in one series of attempts or session before the terminal is closed.

    ```
    TPSR0001 SERV ACCESS
    TPSR0002    PFILE TPSACCESS-PF(5)
    TPSR0003    SFILE TPSACCESS-SF(5)
    TPSR0004    CLEAR, COPY
    TPSR0005    USERMAX 127
    TPSR0006    ERRORLIMIT 5/5
    ```

2. The highest generation of the Password file HZA-PASSWORD is to be updated with Password data. The System file is not to be updated. The maximum user number, and number of retries remain unaltered.

    ```
    TPSR0001 SERV ACCESS
    TPSR0002 PFILE HZA-PASSWORD
    ```

#TPSR

4.4.2 Section 01 : User Password Specification

This section consists of a number of Specifications, all of which are of the same type, each defining the password and access rights for a User Number.

Item 1 : Keyword NUMBER

This Item is mandatory and is used to specify the number allocated to a User. The User Number, with associated user name, should also be defined in the parameters to the Dictionary Update Program (see #TPQB parameters, Section 03).

Format : NUMBER usernumber

usernumber = the number allocated to the user : in range 1 to 9999.

Item 2 : Keyword PASS

This Item is mandatory, and is used to define the Password associated with the User Number.
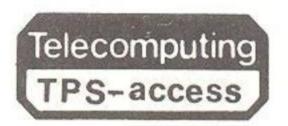
Format : PASS password

password = password associated with the user number : up to 12 characters. For security reasons this password is "garbled" before it is written to the Password file.

Item 3 : Keyword SUBJ

This Item is optional and is used to define the Subjects to which the user has access on entry of the valid password. If the Item is omitted, the user may not access any subject.

Format : SUBJ (subjects)

subjects = a character string of subject codes indicating the subjects for which access rights are to be assigned : each code is alphabetic in the range A to W. The subject code list may be written more briefly by use of a hyphen to indicate a range : e.g. A-E is equivalent to ABCDE. For details of the allocation of codes to subjects, see #TPQA Parameters, Section 05, Item 3, Keyword SCODE.

Item 4 : Keyword TOPI

This Item is optional and is used to define the Topics within a Subject to which the user has access on entry of the valid password. This Item is exceptional in that the Keyword is repeated for each Subject to which the user has access. If the Item is omitted, the user may not access any Topic.

Format : TOPI (subject/topics)

subject =   single character code of the subject in which access rights are to be assigned : alphabetic, in range A to W. For details of the allocation of codes to subjects, see #TPQA Parameters, Section 05, Item 3, Keyword SCODE.

topics =   a character string of Topic codes indicating the Topics within the Subject for which access rights are to be assigned : each code is alphabetic in the range A to W. The topic code list may be written more briefly by use of a hyphen to indicate a range : e.g. A-E is equivalent to ABCDE. For details of the allocation of codes to Topics, see #TPQA parameters, Section 05, Item 6, Keyword TCODE.
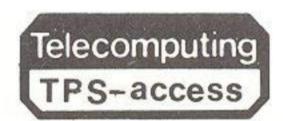
Item 5 : Keyword PEND

This Item is mandatory in the last Section 01 Specification, and must not be specified otherwise. It has no parameters, and is used to indicate the end of the input file.

Example

Password data for three users is to be set up as follows:

User Number	Password	Subject Access	Topic Access
1	XYZPASS123	A	A,B,C,D,P,R
		D	C,Q,
7	145AZ36	B	L to R, W
		C	A to M
		D	P
24	PASS1275	A	A

ACCI-0381

#TPSR

```
TPSR0101 NUMBER 1, PASS XYZPASS123
TPSR0102    SUBJ (AD)
TPSR0103    TOPI (A/A-DPR), TOPI (D/CQ)
TPSR0101 NUMBER 1, PASS 145AZ36
TPSR0102    SUBJ (B-D)
TPSR0103    TOPI (B/L-RW)
TPSR0104    TOPI (C/A-M)
TPSR0105    TOPI (D/P)
TPSR0101 NUMBER 24, PASS PASS1275
TPSR0102    SUBJ (A), TOPI (A/A)
TPSR0103 PEND
```

ACCI-0381

- A-1 -

APPENDIX A : OPERATING INSTRUCTIONS FOR TPS-ACCESS UTILITIES

This Appendix details the Operating Instructions for the three TPS-access utility programs:

- TPQA, which creates records for the TPS-access Dictionary

- TPQB, which updates the TPS-access Dictionary

- TPSR, which creates Password data on the TPS System File.

The circumstances under which these programs are used is described fully in earlier sections of this manual: in Section 2 for users of free-standing TPS-access, or Section 3 for users of TPS-access with TPS.

ACCI-0381

- A-2 -

ACCI-0381

ACCI-0381

1.   **#TPQA: TPS-ACCESS DICTIONARY CREATION**

    TITLE: TPS-access Program to produce a serial file of records for Creation of a TPS-access Dictionary from input parameters on cards, a TPS-access Base Dictionary and, optionally, an existing TPS-access Dictionary.

    HARDWARE REQUIREMENT: 28K words of store
One card reader
One line printer
One or more direct access storage units

    DESCRIPTION

    GENERAL: The program accepts parameters from cards, which determine the disc files to be used by the program, and define the contents of the user dictionary records. Definitions of the Elements, Physical and Standard Records, Subjects and Topics to be used by TPS-access are supplied. From these parameters a serial output file of dictionary records is created, and the records from the issued Base Dictionary appended to it. Optionally, Table records from an existing TPS-access Dictionary may be appended to the output file.
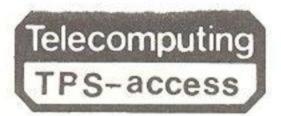
                      A report of validation errors is produced on the line printer. Optionally, a listing of the input parameters is also printed.

                      The program may operate in one of two modes:
- Validate Mode, in which the input parameters are validated and the line printer listing produced, but no output file created

- Create Mode, in which the output file of Dictionary records is produced in addition to the Validate Mode functions.

    INPUT: Input to the program consists of parameters on cards, a direct access Base Dictionary and, optionally, a direct access Dictionary. The input parameters are fully described in Section 4.2 of this Manual.
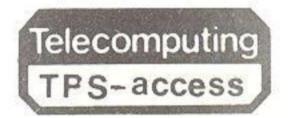
ACCI-0381

#TPQA

The Base Dictionary is a serial file of basic
dictionary records issued with the TPS-access
software.

An index-sequential TPS-access Dictionary file
may be input to the program so that Tables
created online are carried forward to the new
Dictionary.

OUTPUT:

Output consists of a serial direct access file
containing TPS-access Dictionary records, and
a line printer report. The report provides a
listing of the parameters input, together with
details of any errors detected.

LINE PRINTER OUTPUT

REPORT OF INPUT PARAMETERS

A single line printer report is produced. This gives details of all input parameters in error and, optionally, a listing of all input.

The report is headed

   "TPQA/nn   TPS-ACCESS DICTIONARY CREATION"

followed by the date and time   (nn is the version number).

Beneath a further heading

   "DEFINITION   ERROR MESSAGE   KEYWORD IN ERROR"

the input cards are listed, with details of any errors which are detected in the parameters.

The error messages fall into two categories:

- significant errors which cause the run of the program to be terminated

- non-significant errors following which the program will continue

Details of the error messages are given below.

LINE PRINTER ERROR MESSAGES - NON-SIGNIFICANT

The run of the program continues following the reporting of any of these messages. Note that if any error other than 'PARAMETER TOO LONG' is reported, the mode of operation of the program reverts to Validation only. To create a valid output file of Dictionary records, it is necessary to correct the cards and re-run TPQA.

CARD IDENTIFIER INVALID
   The first four characters of the input card are not TPQA or spaces.

CARD OUT OF SEQUENCE
   The sequence numbers (characters 7 and 8 of card) are not ascending within a Section, or the section numbers are not in the correct order.

CARD TYPE INVALID
   The Section Number (characters 5 and 6 of card) is incorrect.

DUPLICATE KEYWORD
   The Keyword has been repeated within a Specification.

#TPQA

INCONSISTENT DATA
    An invalid combination of Keywords or parameters has been
    specified.

KEYWORD INVALID
    The Keyword specified is not valid.

KEYWORD NOT APPLICABLE
    The Keyword specified is not valid within the current Section or an
    invalid combination of Keywords has been specified.

MANDATORY KEYWORD MISS
    A mandatory Keyword is missing from the Specification.

PARAMETER INVALID
    The specified parameter is not valid for the Keyword.

PARAMETER TOO LONG
    The specified parameter is too long. The parameter is truncated to
    the maximum valid size.

PARAMETERS MISSING
    The required parameters have not been specified for the Keyword.

SEQ NO INVALID
    The Sequence Number (characters 7 and 8 of card) is not numeric.

LINE PRINTER MESSAGES - SIGNIFICANT

The run of the program is terminated following the reporting of any
of these messages.

FILE NOT IN SYSTEM
    The specified file cannot be opened as it is not online.
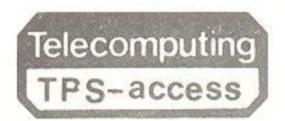
FILENAME INVALID
    The filename or file generation number parameter is invalid.

INSUFF. STORE TO OPEN -
    The specified file cannot be opened as there is insufficient
    executive store available.

INTEGRITY CODE FAILURE
    The specified file cannot be opened owing to an integrity code
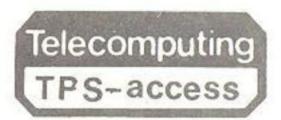   failure.

RECORD MISSING FROM –
   The file specified as the Base Dictionary does not contain any
   records.

RUN ABANDONED
   The run is to be abandoned owing to the detection of a significant
   error. This may be any of the above errors, or a "non-significant"
   error occurring in the Section 1 parameters (e.g. mandatory file
   definition Keyword missing for a Create run).

ACCI-0381

#TPQA

OPERATING

EXECUTIVE PRIORITY
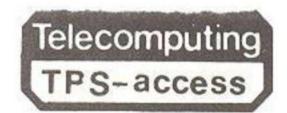
The program as supplied has an executive priority of 50.

USE OF PERIPHERALS

CR0	Parameters	The card reader is used throughout the run.
LP0	Report	The line printer is used throughout the run.
DA1	Current Dictionary	The unit is used throughout the run.
DA6	Base Dictionary	The unit is used throughout the run.
DA7	New Dictionary	The unit is used throughout the run.

RUNNING UNDER EXECUTIVE ALONE

Operating Instructions

Narrative	Console Message
1. Load #TPQA	
2. Load the required storage units	
3. Load the input parameters into the card reader.	
4. To activate the program input	GO #TPQA 21
5. After a successful run the program will halt with the message	#TPQA : HALTED:-OK

ACCI-0381

#TPQA

Exception conditions

The program may terminate with any of the following messages during the course of a run:

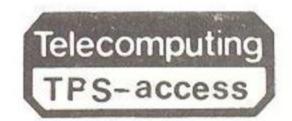| Message	Explanation
ER	A significant error has been detected and reported on the line printer.
** LOGIC ERROR #nnnn	The TPS routines have detected an error which has caused a Logic Error. The significance of the Logic Error codes are given in Appendix B to the TPS Operating Manual.
DA ERROR x f ABANDON	Direct Access Housekeeping has detected an error on file f (f - 1 for current Dictionary, 6 for Base Dictionary, 7 for New Dictionary). x is a code defining the error as follows:

A - Illegal Macro
B - No overflow record corresponding to tag
F - Unclearable parity error
I - File not open
N - File number has already been used by this program.
P - File number has already been used by an SDFAB instruction.
T - An attempt has been made to open a random or indexed-sequential file at end-of-file
X - The buffer size allocated in either the SSDEF or SDFAB instruction is too small
Y - Decimal coded opening mode is outside the legal limits
Z - The following miscellaneous errors:
    1. Illegal record length (zero, or larger than bucket size)
    2. Too many levels of index
    3. Unidentifiable reply to a PERI instruction.
    4. Second level overflow indicator set (in bit 9 of bucket header) but no second leve overflow area allocated on this file. .

ACCI—0381

- A-10 -

ACCI-0381

2. #TPQB: TPS-ACCESS DICTIONARY UPDATE

TITLE:
TPS-access Program to update a TPS-access Dictionary with details from input parameters on cards, and to perform consistency checks on the contents of the Dictionary.

HARDWARE REQUIREMENT:
23K words of store
One card reader
One line printer
One or more direct access storage units.
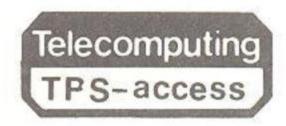
DESCRIPTION:

GENERAL:
The program accepts parameters from cards, which determine the disc file to be used and the functions to be performed, and define records to update the Dictionary file. Details are supplied of the allocation of Standard Records to Subjects/Topics, and User Numbers and Names. The Dictionary is updated in situ with these parameters.

A report of validation errors is produced on the line printer. Optionally, a listing of the input parameters is also printed.

The program may perform one or more of the following functions:

- Cross-reference : this performs a check on the Fields and Elements specified during the Dictionary creation.

- Consistency Check : this checks for the existence of Table records with no corresponding Subject/Topic records.

- Validation : this validates the input cards but does not update the Dictionary file.

- Update : this validates the input cards and updates the Dictionary file with the details supplied.
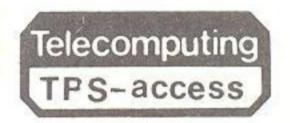
ACCI-0381

#TPQB

INPUT

Input to the program consists of parameters on cards and a direct access Dictionary file. The input Parameters are fully described in Section 4.3 of this manual.

The index-sequential Dictionary file is allocated and created by the procedures described in Section 2 for users of free-standing TPS-access, or Section 3 for users of TPS-access with TPS.

OUTPUT

Output consists of the updated Dictionary File, and a line printer report. The report provides a listing of the parameters input, together with details of any errors detected.

LINE PRINTER OUTPUT

REPORT OF INPUT PARAMETERS

A single line printer report is produced, headed

"TPQB/nn   TPS-ACCESS DICTIONARY UPDATE"

followed by the date and time (nn is the version number).

The report is then divided into 4 sections, each of which commences on a new page.

1. Allocation report

    This gives details of all input parameters in error and, optionally, a listing of all input.

    Beneath a subheading

    "ALLOCATION   ERROR MESSAGE   KEYWORD IN ERROR"

    the input cards are listed, with details of any errors which are detected in the parameters.

    The error messages fall into two categories:

    - significant errors which cause the run of the program to be terminated.

    - non-significant errors following which the program will continue

    Details of the error messages are given below.

2. Cross-reference report

    This details errors detected during the cross-reference check.
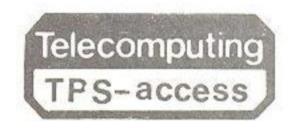
    Beneath a subheading

    "CROSS-REFERENCE   ERROR MESSAGE   KEYWORD IN ERROR"

    details are given of Element names recorded with Fields for which no Dictionary record is present. Details of the error messages are given below.

3. Consistency check report

    This details errors detected during consistency checking.

ACCI-0381

#TPQB

Beneath a subheading

"CONSISTENCY CHECK   ERROR MESSAGE   KEYWORD IN ERROR"

details are given of Tables which reference Subjects, Topics or
Standard Records for which no Dictionary record is present. Details
of the error messages are given below.

4. Summary

The final page summarises the results of the run

Beneath a subheading

"SUMMARY"

the following lines are printed

```
ALLOCATION xxxxxxx
CROSS-REFERENCE xxxxxxx
CONSISTENCY CHECK xxxxxxx
```

xxxxxxx has the value 'O.K.' if no errors have been reported, or
'INVALID' if non-significant errors are reported. (For significant
errors the run of the program is terminated immediately).

LINE PRINTER ERROR MESSAGES - NON-SIGNIFICANT

The run of the program continues following the reporting of any of
these messages:

CARD IDENTIFIER INVALID
    The first four characters of the input card are not TPQB or spaces.
    The card is ignored.

CARD OUT OF SEQUENCE
    The sequence numbers (characters 7 and 8 of card) are not
    ascending within a Section, or the Section numbers are not in the
    correct order. The card is ignored.

CARD TYPE INVALID
    The Section Number (characters 5 and 6 of card) is incorrect. The
    card is ignored.

DUPLICATE KEYWORD
    The Keyword has been repeated within a Specification. The second
    Keyword definition is ignored.

INCONSISTENT DATA
An invalid combination of Keywords or parameters has been specified. The reported Keyword is ignored.

KEYWORD INVALID
The Keyword specified is not valid. The Keyword is ignored.

KEYWORD NOT APPLICABLE
The Keyword specified is not valid within the current Section or an invalid combination of Keywords has been specified. The reported Keyword is ignored.

MANDATORY KEYWORD MISS
A mandatory Keyword is missing from the Specification. The entire Specification is ignored.

PARAMETER INVALID
The specified parameter is not valid for the Keyword. The Keyword is ignored.

PARAMETER TOO LONG
The specified parameter is too long. The parameter is truncated to the maximum valid size.

PARAMETERS MISSING
The required parameters have not been specified for the Keyword. The Keyword is ignored.
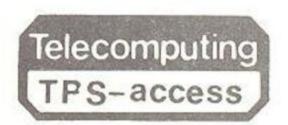
PICTURES INCOMPATIBLE
The cross-reference check has detected that the pictures defined for a Field and its associated Element are not compatible. The cross-reference is reported as invalid; this has the effect that the Dictionary may not be used by the online TPS-access. The Dictionary must be recreated.

RECORD MISSING FOR -
During the Cross-reference check or consistency check a reference has been found in the Dictionary for which there is no Corresponding Dictionary record. The cross-reference is reported as invalid; this has the effect that the Dictionary may not be used by the online TPS-access. The Dictionary must be recreated.

SEQ NO INVALID
The Sequence Number (characters 7 and 8) of card is not numeric. The card is ignored.

- A-15 -

ACCI-0381

#TPQB

LINE PRINTER MESSAGES - SIGNIFICANT

The run of the program is terminated following the reporting of any of these messages.

FILE NOT IN SYSTEM
  The specified file cannot be opened as it is not online.

FILENAME INVALID
  The filename or file generation number parameter is invalid.

INSUFF. STORE TO OPEN -
  The specified file cannot be opened as there is insufficient executive store available.

INTEGRITY CODE FAILURE
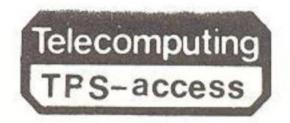 The specified file cannot be opened owing to an integrity code failure.

RECORD MISSING FROM -
  The file defined as the Dictionary does not contain certain mandatory records. The Dictionary must be recreated.

RUN ABANDONED
  The run is to be abandoned owing to the detection of a significant error. This may be any of the above errors, or a "non-significant" error occurring in the Section 1 parameters (e.g. mandatory file definition Keyword missing).

ACCI-0381

OPERATING

EXECUTIVE PRIORITY

The program as supplied has an executive priority of 50.

USE OF PERIPHERALS

CRO	Parameters	The card reader is used throughout the run.
LPO	Report	The line printer is used throughout the run.
DA1	Current Dictionary	The unit is used throughout the run.

RUNNING UNDER EXECUTIVE ALONE

Operating Instructions

Narrative	Console message
1. Load #TPQB	
2. Load the required storage units	
3. Load the input parameters into the card reader.	
4. To activate the program, input	GO #TPQB 21
5. After a successful run the program will halt with the message	#TPQB : HALTED:-OK

ACCI-0381

#TPQB

Exception conditons

The program may terminate with any of the following messages during the course of a run:

Message	Explanation
ER	A significant error has been detected and reported on the line printer
** LOGIC ERROR #nnnn	The TPS routines have detected an error which has caused a Logic Error. The significance of the Logic Error codes are given in Appendix B to the TPS Operating Manual.
DA ERROR x 1 ABANDON	Direct Access Housekeeping has detected an error on the Dictionary File. x is a code defining the error as follows:

A - Illegal Macro
B - No overflow record corresponding to tag
F - Unclearable parity error
I - File not open
N - File number has already been used by this program
P - File number has already been used by an SDFAB instruction
T - An attempt has been made to open a random or indexed-sequential file at end-of-file.
X - The buffer size allocated in either the SSDEF or the SDFAB instruction is too small
Y - Decimal coded opening mode is outside the legal limits
Z - The following miscellaneous errors:
    1. Illegal record length (zero, or larger than bucket size)
    2. Too many levels of index
    3. Unidentifiable reply to a PERI instruction
    4. Second level overflow indicator set (in bit 9 of bucket header) but no second level overflow area allocated on this file.

ACCI-0381

OPERATING

EXECUTIVE PRIORITY

The program as supplied has an executive priority of 50.

USE OF PERIPHERALS

CR0   Parameters   The card reader is used throughout the run.

LP0   Report   The line printer is used throughout the run.

DA1   Current Dictionary The unit is used throughout the run.

RUNNING UNDER EXECUTIVE ALONE

Operating Instructions

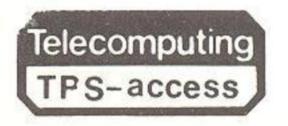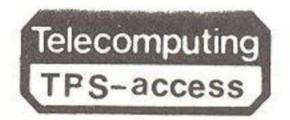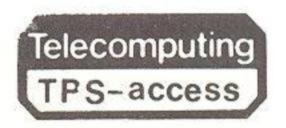Narrative   Console message

1. Load #TPQB

2. Load the required storage units

3. Load the input parameters into
    the card reader.

4. To activate the program, input   GO #TPQB 21

5. After a successful run the
    program will halt with the
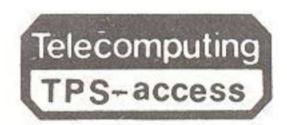   message   #TPQB : HALTED:-OK

ACCI-0381

#TPQB

Exception conditons

The program may terminate with any of the following messages during the course of a run:

Message	Explanation
ER	A significant error has been detected and reported on the line printer
** LOGIC ERROR #nnnn	The TPS routines have detected an error which has caused a Logic Error. The significance of the Logic Error codes are given in Appendix B to the TPS Operating Manual.
DA ERROR x 1 ABANDON	Direct Access Housekeeping has detected an error on the Dictionary File. x is a code defining the error as follows:

A - Illegal Macro
B - No overflow record corresponding to tag
F - Unclearable parity error
I - File not open
N - File number has already been used by this program
P - File number has already been used by an SDFAB instruction
T - An attempt has been made to open a random or indexed-sequential file at end-of-file.
X - The buffer size allocated in either the SSDEF or the SDFAB instruction is too small
Y - Decimal coded opening mode is outside the legal limits
Z - The following miscellaneous errors:
   1. Illegal record length (zero, or larger than bucket size)
   2. Too many levels of index
   3. Unidentifiable reply to a PERI instruction
   4. Second level overflow indicator set (in bit 9 of bucket header) but no second level overflow area allocated on this file.

ACCI-0381

3. **#TPSR: SET UP PASSWORD DATA ON SYSTEM FILE**

    TITLE   TPS-access program to set up and maintain
                                              Password Data on the TPS-access System File.

    HARDWARE REQUIREMENT: 2K words of store
                                                One card reader
                                              One line printer
                                              One or more direct access storage units.

    DESCRIPTION:

    GENERAL: The program accepts parameters from cards
which determine the disc files to be used and
the modein which the program is to operate,
and define user password details to update the
Password File and System File.

The program may operate in one of the
following four modes:

1. Create a Password File and copy Password
details to the System file.

2. Create a Password file only

3. Update the Password file and copy Password
details to the System file.

4. Update the Password file only.
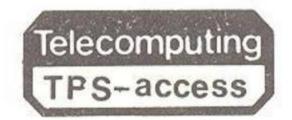
    INPUT   Input to the program consists of parameters on
cards, and for certain modes of operation a
direct access Password file and System file
which are to be updated.

The input parameters are fully described in
Section 4.4 of this Manual.

The direct access Password file is input for
modes of operation 3 and 4. The file is
allocated as described in earlier sections of
this manual: in Section 2 for users of free-
standing TPS-access, or Section 3 for users of
TPS-access within a TPS system. The Password
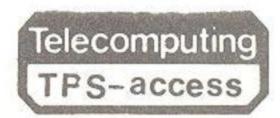file is created by an earlier run of #TPSR.

ACCI-0381

#TPSR

The System file is input for modes of operation 1 and 3. The file is set up as described in earlier Sections of this Manual : in Section 2 for users of free-standing TPS-access, or Section 3 for users of TPS-access within a TPS system.

OUTPUT

Output consists of a Password file (either created or updated in situ) and, optionally, an updated System file. A line printer report is produced if an error is detected in the input parameters.

LINE PRINTER OUTPUT

Where an error is detected in the input parameters, the offending card is printed with an arrow on the line below indicating the keyword or character in error, if applicable. The program then halts with an explanatory message.

ACCI-0381

OPERATING

EXECUTIVE PRIORITY

The program as supplied has an executive priority of 50

USE OF PERIPHERALS

CR0	Parameters	The card reader is used throughout the run.
DA0	Password File	The unit is used throughout the run
DA1	System File	The unit is used throughout the run for modes of operation 1 and 3.
LP0	Error report	The line printer is used only if an error is detected in the input parameters.

RUNNING UNDER EXECUTIVE ALONE

Operating Instructions

Narrative   Console Message

1. Load #TPSR

2. Load the required storage units

3. Load the input parameters into card reader

4. To activate the program, input   GO #TPSR 21

5. After a successful run the program will halt with the followingmessage   #TPSR : HALTED:-OK

Exception Conditions

The program may terminate with any of the following error codes during the course of a run:

Code	Explanation
CR	Card reader not available. Make the reader available and resume the program by typing GO #TPSR
En	The program cannot extend the file to determine its length. n indicates the executive reply.

ACCI-0381

#TPSR

fn	A file cannot be opened by executive. The file and the reason for not opening it are indicated as follows:

f = S : System file

P : Password file

n = 1 : File not in system

2 : Integrity Code Failure

3 : Insufficient executive main store available

4 : Purge date not exceeded.

Rn	A Read Transfer error has occurred. n gives the executive reply word.
Wn	A Write Transfer error has occurred. n gives the executive reply word.

The program may also halt with one of the following explanatory messages (the card in error is printed on the line printer):

FILE NAME TOO LONG
   The specified file name parameter is longer than 12 characters.

INVALID FGN
   The file generation parameter is incorrect

INVALID KEYWORD
   The parameter is not a valid keyword

INVALID KEYWORD COMBINATION
   The specified combination of Keywords is not valid

INVALID PARAMETER
   The parameter indicated is incorrect

INVALID SECTION NUMBER
   The Section Number (characters 5 and 6 of card) is incorrect.

INVALID SEQUENCE NUMBER
   The Sequence Number (characters 7 and 8 of card) is incorrect.

INVALID SERVICE
   The Service parameter is not 'ACCESS'.

ACCI-0381

INVALID SUBJECT CODE
   The subject code specified is not in the range A to W.

INVALID TOPIC CODE
   The Topic Code specified is not in the range A to W.

KEYWORD ALREADY SPECIFIED
   The Keyword has been repeated within a Specification.

NO SYSTEM FILE SPECIFIED
   The parameters request the copying of Password Data to the System
   File, but no System File is specified.

PARAMETER CARD NOT FOR TPSR
   The first four characters of the input card are not TPSR.

PARAMETER MISSING
   The required parameters have not been specified for the keyword.

PASSWORD FILE CORRUPT
   The file specified is not a valid Password File.

PASSWORD FILE NOT SPECIFIED
   The Password File is not defined among the parameters.

PASSWORD FILE TOO SMALL
   The Password File is not large enough to hold all the specified
   password details.

PASSWORD TOO LONG
   The specified password parameter is longer than 12 characters.
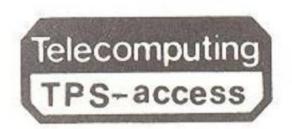
SERVICE CODE ALREADY SPECIFIED
   The Service Keyword has been duplicated

SYSTEM FILE CORRUPT OR NOT TPS
   The file specified is not a valid TPS System File.

SYSTEM FILE TOO SMALL
   The Specified System file is not large enough to hold the password
   details.

USER NUMBER NOT SPECIFIED
   The User Number Keyword has not been specified.

ACCI-0381

APPENDIX B   PRODUCING UPPER AND LOWER CASE DESCRIPTIVE DISPLAYS

Descriptive display details may be defined in card parameters for any of the following:

System name (see TPQA, Section 02, Item 1)
Element name (see TPQA, Section 03, Item 1)
Element description (see TPQA, Section 03, Item 2)
Element specification (see TPQA, Section 03, Item 4)
Standard Record name (see TPQA, Section 04, Item 7)
Standard Record description (see TPQA, Section 04, Item 8)
Subject name (see TPQA, Section 05, Item 1)
Subject description (see TPQA, Section 05, Item 2)
Topic name (see TPQA, Section 05, Item 4)
Topic description (see TPQA, Section 05, Item 5)
User name (see TPQB, Section 03, Item 2)

The simplest form for entry of descriptive display parameters to programs #TPQA and #TPQB will be an upper case string.

A mixed upper and lower case string looks better on the screen; this must be specified in the correct form for output transmission:

i.e. - $ indicates alpha shift ("upper case")

-] indicates beta shift ("lower case")

- to include any of the characters $,],^, or < in the display the appropriate character pair must be specified as follows:

$ - ^T
] - ^U
^ - ^V
< - ^W

Note that the descriptive display commences in upper case unless otherwise indicated in the parameters. Where a descriptive display definition is spread over several cards, the description on cards after the first will commence in the case (upper or lower) last specified on the previous card.

Example

The TPS-access system is named 'Northern Division Information System'.

TPQA parameters are:

TPQA0201 SYSTEM N]ORTHERN $D]IVISION $I]NFORMATION $S]YSTEM