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Title:

RC3600 DATA ENTRY
RELEASE 2
USERS GUIDE, PART 1

A/S REGNECENTRALEN

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Abstract:

This manual describes the entering of data from a keystation to a disc and the verification and editing of entered data. The manual also describes a Data Entry key station display screen and keyboard.

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Foreword

The differences between the present second edition and the first edition of RC3600 Data Entry Release 2 Users Guide, Part 1 (November 1976) are due to the changes and extensions of the RC3600 Data Entry System.

It has been possible to mix key stations of different types in one system, e.g. both RC828 and RC825 simultaneously.

The limitation on the number of library items (i.e. jobs, batches, formats etc.) has been removed.

In edit mode the commands FIELD and RECORD have been changed so that fields (records) are identified with their absolute number instead of relative to current field (record).

The use of control keys CHAR⟶ and CHAR⟵ has been extended so that they can be used outside last keyed field, i.e. in edit mode, after FIELD ⟵ etc. This means that the edited fields will be displayed when using the control key FIELD ⟵ and the like.

Some of the system messages have been changed in order to make them more informative, for instans the message 'FORMAT ERROR - UNDEFINED' has been replaced by 'REGISTER NOT INITIALIZED' or 'REGISTER UNDEFINED' depending on the cause of the error.
The system start up message (described in section 3.2 and 10) will be shown after power off/power on.

Designation of supervisor has been changed permitting supervisorprograms to run slower in order to prevent delay of the work on the normal key stations optional.

Although not yet implemented the password system is described in section 15.

CONTENTS PAGE

CONTENTS PAGE

CONTENTS PAGE

CONTENTS PAGE

1 INTRODUCTION

The RC3600 Data Entry System is a software package operation under the RC3600 Disc Operating Multiprogramming System (DOMUS). It is an advanced key-to-disc system, which allows the operators to key data from local or remote key stations under format control. The data is stored on the disc in data batches. Whenever a data batch is completed, it may be dumped on magnetic tape or transmitted for remote processing.

The system offers a great variety of data manipulation possibilities during data entering, including: validity checking, rekeying, editing, skipping, duplication, arithmetic operations, batch accumulating, etc.

This Users Guide describes the creation of data batches, the initial entering of data from a key station to the data batch and subsequent verification and editing of existing data batches. The guide also describes the Data Entry key station.

The guide is arranged as follows:

Section 2

Contains a description of the key station display screen layout and a description of the keyboard including the function of the control keys.

Section 3

Describes the start-up procedure which makes the key stations ready to receive control commands in login mode.

Section 4

Contains a list of control commands and outlines the rules for entering control commands.

Section 5

Defines the concepts of batch, batch status, and job and describes how to create a data batch.

Section 6

Describes how to initiate the key mode (the data entering mode), and how the data entering is performed.

Section 7

Describes the rekey mode (the data verification mode).

Section 8

Describes how to initiate edit mode (the batch search and modification mode), how to perform edit commands in edit-search mode and how to correct fields by keying in edit-key mode.

Section 9

Describes how the key station is places in supervisor mode. A detailed description of the programs available in supervisor mode is found in Users Guide part 2.

Section 10

Describes how work is terminated by placing the key station in stop mode.

Section 11

Contains the rules for allowable values of the batch status when batch operations are initiated. The rules are used to prevent the operators from doing any unreasonable operation.

Section 12

Describes some automatic supervising functions which are contained with the system. These functions comprise among other things: Information about the work being done at the keystations is logged in a disc file, the operators are informed by messages on the console device when the amount of free disc space is diminishing.

Section 13

Contains a complete list of messages from the system in the different modes (except the supervisor mode), both the messages which appear on the display screen and the messages which appear on the operator console device.

Section 14

Describes the procedure for translating the system messages into a local language.

Section 15

Describes the password feature and contains a guide in how to enter passwords into the system.

Appendix 1

Contains the error codes concerning the key station.

Appendix 2 and 3

Contain lists of control commands and edit commands respectively.

Appendix 4

Contains a summarized description of how to initiate and terminate the different system modes.

Appendix 5 and 6

Are used for translation of system messages into local language and contain a list of the messages which may be translated and a listing of the standard format controlling entering of messages in local language.

2. KEY STATION

The RC 3600 Data Entry key station consists of a display unit and a keyboard, which are separated in order to make a pleasant and functional work place for the key operator.

The display unit has two operator controls: an ON/OFF power switch and an intensity regulator. By means of the latter it is possible to regulate the brightness of the displayed characters. The display screen is formatted into 24 lines each of 80 characters, for a total display of 1920 characters.

Please note that same system may support more than one type of the available RC 3600 Data Entry display units (a system generation option).

A cursor - a flashing underline - is used for pointing out a particular character position on the screen, normally the position of the next character to be keyed.

When an alarm condition requiring the operators attention occurs, the operator is signalled by an error message on the message line and by an audible signal.

The keyboard has one operator control: an ON/OFF power switch on the rear side.

2.1 DISPLAY

The display unit is divided into three parts:

* a status line (the top line).
* a message line (the second line).
* a data area (the remaining lines).

An example of the organization of data on the display screen is shown in fig. 2-1.

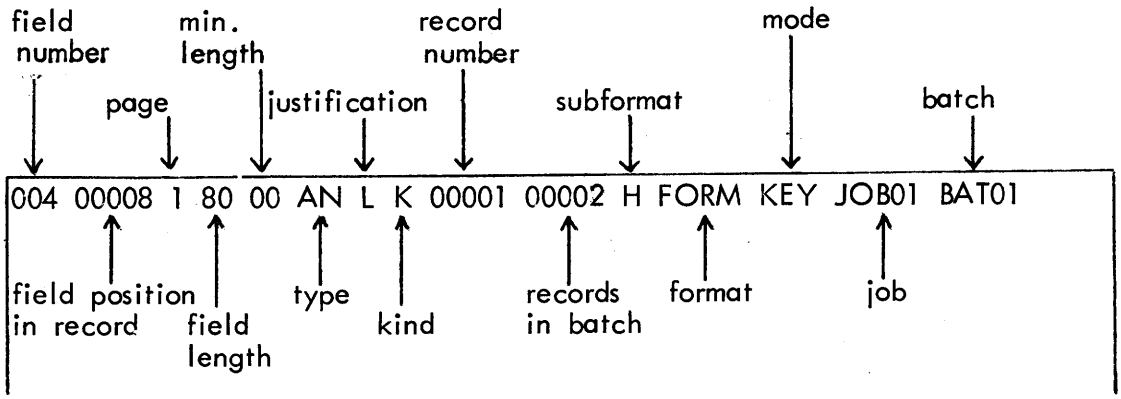
```
004 00008 1 80 00 AN L K 00001 00002 H FORM KEY JOB01 BAT01

FORMAT NAME....:   K2113
SUBFORMAT NAME.:   H
PROTECTION.....:   Y
COMMENT.....:
FORMAT HEAD - DEFINITIONS OF REG_
```

Figure 2-1. Organization of display screen in key mode.

2.1.1 Status Line

In the modes of key, rekey, edit and supervisor the top line of the display screen shows the current status of work being done at the key station. The format of the status line in the supervisor mode is described in Part 2 of this Users Guide.

In the modes of key, rekey and edit the format of the status line is:



FIELD NUMBER

This is the number of the current field. Some times it is also called field index.

FIELD POSITION IN RECORD

This is the number of the first character position in the record of current field. The position of the first field is 1.

PAGE

This is the page number of the record page being displayed.

FIELD LENGTH

Indicates the maximum number of characters which can be keyed into current field.

MIN. LENGTH

Indicates the minimum number of characters which must be keyed into current field.

TYPE

Indicates the type of the characters that may be entered into this field:

N	-	Numeric
SN	-	Signed numeric
SS	-	Overpunched signed numeric
A	-	Alphabetic
AN	-	Alphanumeric

JUSTIFICATION

Indicates the justification of the current field:

L	-	Left
R	-	Right

KIND

Indicates the kind of current field:

K	-	Keyed
N	-	Not keyed
C	-	Constant
D	-	Duplikation
I	-	Increment

RECORD NUMBER

This is the record number currently being keyed. The record number is updated when the current record is released and during record backspace/forward operations.

RECORDS IN BATCH

This is the maximum-value of record number.

OLD RECORD NUMBER

In rekey and edit mode, the old record number is displayed between records in batch and subformat name. The old record number indicates the record number of current record during initial keying of the record.

SUBFORMAT NAME

This is the name of the current subformat.

FORMAT NAME

This is the name of the format.

MODE

Indicates the current mode of the key station:

KEY - Key mode
REKEY - Rekey mode
EDIT - Edit mode

JOBNAME

This is the name of the job.

BATCH NAME

This is the name of the batch being processed.

2.1.2 Message Line

The second line from the top of the screen is used for display of error and other operator messages. All messages from the system are introduced by two asterisks, for example:

** TYPE ERROR

A complete list of messages is found in section 13.

2.1.3 Data Area

The remaining lines of the screen (lines 3 to 24) are used for display of data records, images and commands. The following conventions apply to this part of the screen:

KEY MODE

The data area (except third line) is used to display:

* One page of the data record.
  (The positions of the field are defined in the format).

* One page of the record image. This is used for fill-in-the-blanks keying. (The positions and the contents of the tags are defined in the format).

When data is displayed the cursor indicates the position of the next character to be keyed. Data within fields is displayed as keyed (left-justified within the field). However a field may be specified as 'display yes' in the format. Such a field is also displayed after the field has been entered and the justification and filling have taken place.

A page is that portion of a record being shown at one time. The page number in the status line indicates which page is being displayed.

Images are displayed on the screen with greater brightness to distinguish them from data fields.

The third line of the screen is left blank in the key mode.

REKEY MODE

Records and images are displayed like in the key mode. The third line of the screen is used to display the old value when there is a miscompare of old and new fields.

EDIT MODE

Records and images are displayed like in the key mode. The third line is used for keying edit search commands.

LOGIN MODE

Just one command is displayed on each line. When the last line has been used, the data area is cleared and the next command will appear on the third line.

SUPERVISOR MODE

The use of the data area in the supervisor mode is described in Part 2 of this Users Guide.

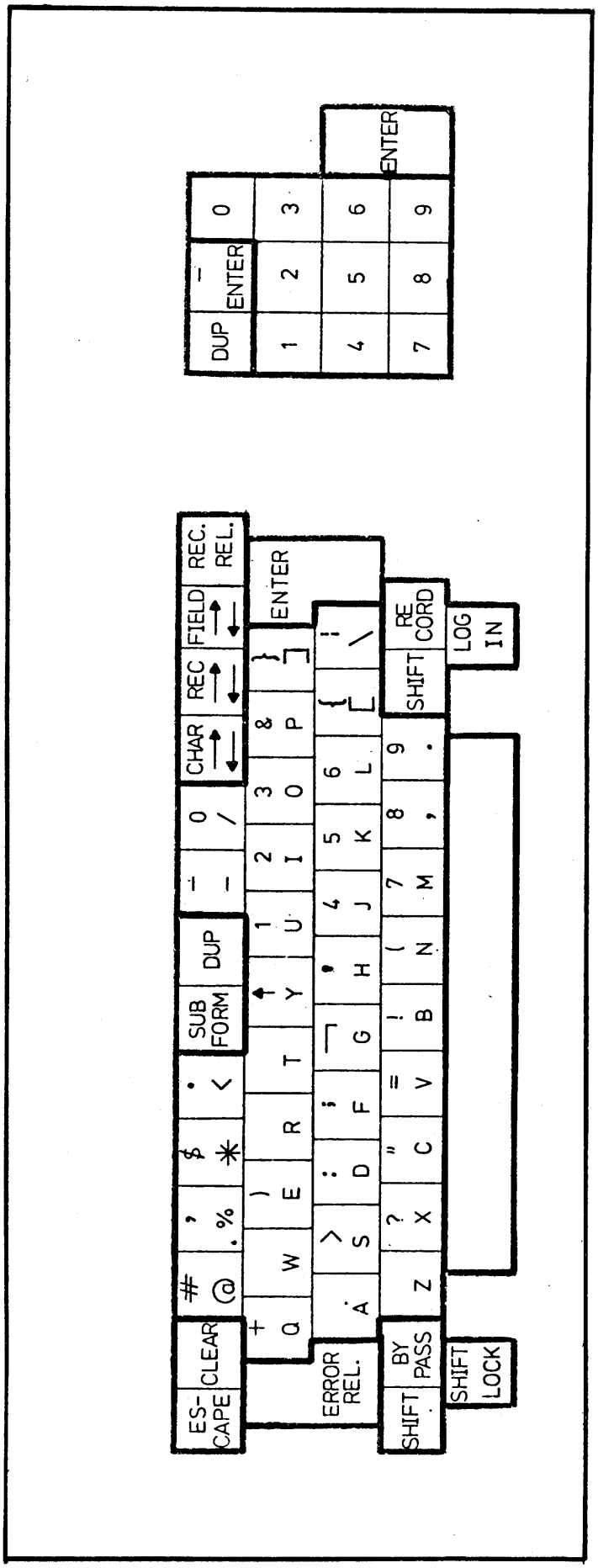


Figure 2-2. Standard keyboard layout.

The layout of the standard keyboard is shown in fig. 2-2.

If the layout of the standard keyboard is not convenient, the RC3600 Data Entry System can be delivered with keyboards having an alternative layout.

Please note that the same system may support keyboards with different layouts (a system generation option).

The keyboard contains control keys, case-shift keys and data keys. The control and shift keys are white in order to differentiate them from data keys, which are grey.

All of the keys except for SHIFT and SHIFT LOCK are repeating. If a key is held depressed for more than 0.6 second, the corresponding character will be transmitted at a rate of 5 times a second.

2.2.1 Shift Keys

The upper/lower case shift-function is operated by the SHIFT and SHIFT LOCK keys. Holding the SHIFT key depressed will cause the upper case value of each succeeding key pressed to be transmitted until the SHIFT key is released. The SHIFT LOCK key, when pressed, switches the keyboard from lower case to upper case and vice versa, and lights up to indicate the upper case condition.

2.2.2 Control Keys

The positions of the control keys can be seen in fig. 2-2. Their functions are described in the following paragraphs.

BYPASS

The BYPASS key allows the operator to pass over a field which is invalid and cannot be corrected, or a field of which the source data on an input sheet is unreadable. The field will be flagged as INVALID, along with the record, for subsequent corrections.

CHAR ←

The CHAR ← key is used for backspacing the cursor one character position in the current field or the current command line. Attempts to backspace beyond the start of the field or the start of the command line has no effect.

CHAR →

The CHAR → key is used for moving the cursor forward one character position in the current field or current command line. Attempts to move beyond the last character keyed, has no effect.

CLEAR

The CLEAR key is used for clearing the current record, by moving the field index which points out the current field to the first field in the record.

DUP

The DUP key may be used in all keying modes if the field is specified as a duplication field (D), a constant field (C), or an increment field (I). When DUP is pressed, the contents of the register specified in the format are used as input to the field (the incremented register contents is used when I is specified). The DUP key is valid only in the first position of a field.

ENTER

The ENTER key is used for terminating a command in the modes of stop, login, supervisor and edit-search. Besides the ENTER key is used in all keying modes to terminate any entered field, except fields of the overpunched signed numeric type which are to be given the negative value (see - ENTER). Immediately after pressing the ENTER key, the field contents is justified and filled as specified in the format.

- ENTER

Used in all keying modes for terminating the entering of an overpunched signed numeric field which is to be given the negative value. After the justification and filling have been performed, the least significant digit

is overpunched to flag the field as negative. When used for terminating fields which have been specified different from special signed numeric the key acts like the ENTER key.

ERROR RELEASE

The ERROR RELEASE key is used for releasing the keyboard after an alarm in any of the keying modes. When an error has been detected, an audiable alarm is given, an error message is displayed, and no further input is accepted. Pressing the ERROR RELEASE key will release the keyboard, so that the field can be keyed again or so that the character(s) causing the error may be corrected. No errors are caused by accidentally pressing the ERROR RELEASE key.

ESCAPE

The ESCAPE key is used in the modes of key and rekey for interrupting the keying. In the edit mode, the ESCAPE key is used to return from edit-key to edit-search mode. See further section 8.

FIELD ←

When the cursor is situated after the first position in a field a press on the FIELD ← key causes the cursor to backspace to the first position in the field. If already in the first position, the field index and the cursor are backspaced to the first position of the previously keyed field, which will be output to the screen in edited format (i.e. as stored in the record, justified and filled with fill characters). Backspacing beyond record start is not allowed. In the modes of stop, login, supervisor, and edit-search the FIELD ← key is used for backspacing the cursor to the first position of the current command.

FIELD →

The FIELD → key positions the field index and the cursor at the next keyed field in the record. The field will be output on the screen in edited format (i.e. as stored in the record, justified and filled with fill characters). Moving beyond the last keyed field is not allowed.

LOGIN

The LOGIN key is used when starting up the keystation, see section 3.2. Accidental depressions of the LOGIN key cause no errors.

RECORD

The RECORD key is used in the rekey mode to insert and delete a record as follows:

1. Key: I
   or: D
2. Press the RECORD key.

If the letter I is keyed, a new record, keyed as in key mode, will be inserted before the current record. If the letter D is keyed, the current record will be deleted.

Further the RECORD key is used in the key, rekey and edit-key modes to clear all records from the current record to the last keyed record in the batch, i.e. the records cleared are the records over which backspacing has been executed using REC ⟵ key. The key is used as follows:

1. Key: C
2. Press the RECORD key.

The RECORD key is only valid in the first position of a record.

REC ⟵

The REC ⟵ key is used for backspacing to the first keyed position of the current record or, if at the first keyed position, to the first keyed position of the previously keyed record. Backspacing beyond the start of the batch is not allowed.

REC ⟶

The REC ⟶ key is used for moving forward to the first keyed position of a record. Moving beyond the last keyed record in the batch is not allowed.

REC REL

In all keying modes, the REC REL key is used to terminate a record without further keying. The current field is terminated as if the ENTER key has been pressed, and the remainder of the keyed fields in the record are checked.

If the REC REL key is pressed before all keyed fields, specified with min. length greater than zero, are completed, an error message is output and the operator must key from the first field, specified with min. length greater than zero.

If the remainder of the record does not contain fields, specified with min. length greater than zero, the record is released to the system for storage.

SUBFORM

The SUBFORM key is used to select a new subformat as follows:

1. Key the subformat name (1 letter or digit).
2. Press the SUBFORM key.

The selection of a protected subformat or of a subformat not in the current format causes an error and the subformat is not changed. Use of the SUBFORM key is valid only in the first manual position of a record and only when records are created, as in the key mode. In any subsequent mode, subformat selection is automatic and use of the SUBFORM key causes an error.

2.2.3 Data Keys

The standard keyboard contains the following data keys:

KEY	MEANING
Δ	Space
!	Exclamation
"	
#	
$	Dollar
%	Percent
&	Ampersant
'	Quotation
(	Left Parenthesis
)	Right Parenthesis
*	Asterisk
+	Plus
,	Comma
-	Minus or hyphen
.	Point
/	Stroke
0 through 9	Digits
:	Colon
;	Semicolon
<	Less than
=	Equal
>	Greater than
?	Question mark
@	Commercial At
A through Z	Letters
[	
\	
]	
↑	
{	
|	Bar
}	
~	

3 WORK INITIATION

3.1 SYSTEM START UP

Before work can be initiated at a key station, the system must be ready. The system start up procedure is described in the Operating Guide.

3.2 KEY STATION START UP

If the key station power switches are left in the 'ON' position before system start up, the message

'RC3600 DATA ENTRY STATION CLOSED
PRESS LOGIN TO CONTINUE'

will appear on the display screen when the system is ready.

If the key station power switches are set in the 'ON' position after system start up, the key station will be ready when above mentioned message appears.

The key station is then in the stop mode and the key operator must perform the following login procedure to initiate work:

1. Press the LOGIN key.
2. Key the initials (2 or 3 characters).
3. Key the user number (6 digits).
4. Press the ENTER key.

Example: HH 212199
If passwords have been entered into the system then the combination of initials and user number must correspond to a combination mentioned in the passwordfile. See also section 15.

If the user identification is accepted by the system, the message:

'STATION LOGGED IN'

will appear on the display screen. The key station is now said to be in login mode and is ready to accept the control commands.

If the user identification is not accepted an error message will appear and the login procedure must be repeated.

4 LOGIN MODE

4.1 CONTROL COMMANDS

The following control commands can be performed when the key station is in login mode:

SET	-	Used for creation of data batches and job (section 5).
KEY	-	Used for initiation of the key mode which is the main data entering mode (section 6).
REKEY	-	Used for initiation of the rekey mode, which is the data verification mode (section 7).
EDIT	-	Used for initiation of the edit mode, which is the batch search and batch modification mode (section 8).
SUPERVISOR	-	Used for initiation of the supervisor mode, where the supervisor functions are performed (section 9).
GOODBYE	-	Used for termination of login mode, places the key station in the stop mode (section 10).

4.2 ENTERING CONTROL COMMANDS

This section describes the general rules for entering control control commands. The syntax for the various commands is described in the above mentioned sections.

The items forming the command must be separated by at least one space, but more spaces are allowed. The command is ended by pressing the ENTER key. The system only checks the first two characters of each command word. The first character in a name (i.e. a batchname, a jobname, or a formatname) must be a letter, the succeeding characters (if any) may be letters or digits.

Before a command is terminated by pressing the ENTER key, the CHAR ⟵ , CHAR ⟶ and FIELD ⟵ keys may be used to position the cursor within the command. Any character passed during the positioning may be corrected.

If other control keys than the above mentioned are depressed, the system outputs an error message on the message line, but afterwards the cursor is positioned at the current position in the command line and the entering of the current command may continue.

5 BATCH DESCRIPTION

5.1 BATCH DEFINITION

A batch is the area on a disc (a disc file), where the processed data are stored. The batch is the output area for the processed document.

The keyed data are stored in the batch as records. These records describe the logical structure of the processed document(s).

A record contains a number of fields. A field is an element in the document that is processed as a single unit.

5.2 JOB DEFINITION

A job is a collection of batches, which can be referred together using the jobname. Physically a job is a named file on the disc. The file contains the names of the batches in the job.

The names of all jobs within the system are collected in the job library, also a file on the disc.

5.3 FLAGS AND STATUS

Each field, record, and batch has certain system flags associated to it. The flags are used for determinating the status of a field, a record, and a batch.

5.3.1 Field Flags

The field flags are named validity flag and skip flag and describes whether the field is:

* VALID or INVALID
* SKIPPED, SKIPPED BY STATEMENT, or NOT SKIPPED.

The field flags and their values are explained in the Data Entry Format Language Guide.

5.3.2 Record Flags

The record flags are named validity flag and rekey flag and defines whether the record is:

* VALID or INVALID
* REKEYED or NOT REKEYED

The record validity flag is INVALID if at least one field in the record in invalid, otherwise the validity flag is VALID.

The record rekey flag is REKEYED if the record is rekeyed, otherwise the rekey flag is not rekeyed.

5.3.3 Batch Flags

The batch flags are named state flag, rekey flag, edit flag, dump flag, transfer flag, save flag, validity flag, sort flag, rekey required flag, and valid required flag.

The values of the state flag and the conditions for their attainment are the following:

BLANK	-	After the batch has been created, but before any keying is initiated.
CLOSED	-	After termination of keying, rekeying or editing.
EDITING	-	During editing.
EDITING ESCAPED	-	After temporary interruption of editing.
KEYING	-	During keying.

KEYING + REKEYING - During concurrent keying and rekeying.

KEYING + REKEYING ESCAPED - After rekeying has been temporarily interrupted, while keying is still taking place.

REKEYING - During rekeying.

REKEYING ESCAPED - After temporary interruption of rekeying.

The rekey flag is REKEYED when every record in the batch is rekeyed, the flag is PARTIAL REKEYED if some but not all of the records are rekeyed, and the flag is NOT REKEYED if none of the records are rekeyed. A batch can be PARTIAL REKEYED if it has been rekeyed, and when additional records have been created in the batch by a keying performed after the initial rekeying.

The edit flag is EDITED, if the batch has been edited and is not opened for keying or rekeying later on, otherwise the flag is NOT EDITED.

The dump flag is DUMPED, if the batch has been dumped in host computer format, otherwise the flag is NOT DUMPED.

The transfer flag is TRANSFERRED, if the batch has been transferred by transmission to a host computer in remote job entry fashion, otherwise the flag is NOT TRANSFERRED.

The save flag is SAVED, if the batch is saved by the supervisor program SAVE, otherwise the flag is NOT SAVED.

The validity flag is INVALID, if at least one record in the batch is flagged as invalid, otherwise the flag is VALID.

The sort flag is SORTED, if the batch has been sorted by the Data Entry Sort Package, otherwise the flag is NOT SORTED.

The rekey required flag is REQUIRED, if the batch must be flagged as rekeyed before it may be dumped in host computer format or transferred to host computer, otherwise the flag is NOT REQUIRED.

The valid required flag is REQUIRED, if the batch must be valid before it may be dumped in host computer format or transferred to host computer, otherwise the flag is NOT REQUIRED.

The batch flags determine the batch status, and are checked before any batch operation. See section 11 about the protection system.

5.4 BATCH AND JOB CREATION

New data batches and jobs are created by the control command SET. The SET command has the following syntax:

1. Key: SET
2. Key the jobname (1 to 5 characters).
3. Key the format name (1 to 5 characters).
4. Key the batch name (1 to 5 characters).
5. If the standard batch size is not wanted, then key the size (integer between 2 and 761).
6. If the batch must be rekeyed before it may be dumped or transferred, then key:

   REKEY
7. If the batch must be valid before it may be dumped or transferred, then key:

   VALID
8. Pres the ENTER key.

Examples:

```
SET   JOB01   FORM   BAT01   50
SET   JOB02   F199   BAT02   REKEY VALID
```

The SET command performs:

* Creates a data batch with the specified name and with either the specified size or the standard size.
* Creates a job, if the job name does not already exist within the system, with the specified name and inserts the job into the job library.
* Checks whether or not the specified format name exists within the system.

* Initializes the batch status to:

State flag	=	BLANK
Rekey flag	=	NOT REKEYED
Edit flag	=	NOT EDITED
Dump flag	=	NOT DUMPED
Transfer flag	=	NOT TRANSFERRED
Save flag	=	NOT SAVED
Validity flag	=	VALID
Sort flag	=	NOT SORTED
Rekey required flag	=	REQUIRED if the REKEY parameter is specified else NOT REQUIRED
Valid required flag	=	REQUIRED if the VALID parameter is specified else NOT REQUIRED

The format name specifies the format which controls all keying, rekeying and editing to this batch.

The size of the batch refers to the number of disc sectors (1 sector = 1 block = 512 characters) which are reserved for the batch. If the batch size is not specified the batch is created with the standard size. The standard size represents the smallest area which can be reserved on the disc. It must be observed that a batch is extended automatically when needed as long as disc space is available.

When specifying the REKEY parameter, the batch is flagged so it must be rekeyed before it can be dumped or transferred.

When specifying the VALID parameter, the batch must be valid before it can be dumped or transferred.

5.5 BATCH AND JOB DELETION

When a batch or a job is not needed any longer within the system, it may be deleted by the supervisor program DELETE. See Users Guide Part 2.

6. KEY MODE

6.1 KEY MODE INITIATION

The key mode is used for creating records in a data batch and is initiated by keying the following command:

1. Key: KEY
2. Key the batch name (1 to 5 characters).
3. If fill-in-the-blanks guidance is wanted, then key:
   IMAGE
4. If keying in an already dumped or transferred batch is wanted, then key:
   RELEASE
5. Press the ENTER key.

Examples:
```
KEY BAT01 IMAGE
KEY BAT02
KEY BAT03 IMAGE RELEASE
```

The KEY command prepares the batch for key mode by performing:

* Checks if the batch name is a batch within the system.
* Checks the batch status in order to determine whether or not keying to the batch is allowed.
* Changes the batch status to one of the following three values: KEYING, KEYING + REKEYING or KEYING + REKEYING ESCAPED.
* Reserves an area in core for the format and loads the format into the core, if it is not already there.
* Reserves areas in core for the record and the registers.

Keying to a batch is allowed only if the state flag in the batch status has one of the following values:

BLANK	-	First time keying to a batch.
CLOSED	-	Reopening keying to a batch.
REKEYING	-	Reopening keying to a batch, which is during rekeying at another key station.
REKEYING ESCAPED	-	Reopening keying to a batch, where the rekeying has been interrupted temporary.

Normally keying is not allowed when the dump flag or the transfer flag shows that the batch has already been dumped or transferred; however when the RELEASE parameter is specified in the KEY command, the protection is suspended by clearing the dump flag and the transfer flag.

A batch can never be opened for keying if it is flagged as sorted.

All keying to the batch will be controlled by the format specified in the batch creation command. Specifying the IMAGE parameter means that the fill-in-the-blanks guide is displayed on the screen while keying. If the format does not contain an image part, specifying the IMAGE parameter has no effect.

When a valid KEY command is entered, the display is cleared and the status line will appear, showing the field index and the first field to be keyed. The key station is now in key mode and the registration may start.

6.2 WORKING CYCLE IN THE KEY MODE

After a key command has been accepted by the system, control is transferred to the first subformat of the format. The subformat defines the type and extent of fields, the output format of fields, validation checks, etc. The processed data from keying a subformat forms a record in the batch.

6.2.1 Keying a Field

While registrating, the operator may either key a field or bypass a field by pressing the BYPASS key. This applies to all fields in the subformat except for those which are programmed as not keyed fields. While the operator keys fields, the subformat controlling the keying, insures that the data meets the specified validity requirements and reports invalid fields to the operator.

The operator keys a field by pressing data keys corresponding to the requested contents of the field. A field is ended by pressing one of the following control keys:

ENTER - Generally used to end a field.

- ENTER - Used if a field is programmed as an overpunched signed numeric field and is to be given the negative value.

REC REL - Used if the following fields in the subformat are to be skipped. Works as ENTER for the current field.

Fields programmed as automatic fields (i.e. constant, duplication or incrementation fields) may be generated by pressing the DUP key. The contents of the specified register is then used as keyed input to the field. If a field has been programmed with zero as minimum length, the operator may skip the field by pressing the ENTER key. A number of fields programmed with zero as minimum length may be skipped by pressing the REC REL key.

A field is first handled by the system when either the field is ended by pressing a control key or the extent of the field has been exceeded by pressing too many data keys. The handling of a field consists of the following:

* Formatting the contents of the field as specified in the field definition.
* Inserting the field into the record.
* Checking the type and the number of keyed characters.
* Executing, if the field has not been skipped, the program statements.

6.2.2 Error Routine

If an error has been detected by the system, an audiable alarm is given and an alarm message is displayed on the message line. The operator must press the ERROR RELEASE key to clear the alarm message and activate the keyboard. The field may then either be corrected or bypassed by pressing the BYPASS key. The cursor may be moved to a character to be corrected by using the CHAR $\longrightarrow$ key. Key depressions other than ERROR RELEASE are ignored when an alarm message is displayed.

6.2.3 Keying a Record

When all fields are keyed in a record and handled by the system, the record is transferred to the disc as a record in the batch.

6.2.4 Subformat Selection

When the batch is created the keying is done in accordance with the current subformat, until a new subformat as selected. The selection is either automatic (programmed in the format) or manual. Manually in the first position of a record, the operator selects a new subformat by performing the following:

1. Key the name of the new subformat (1 character).
2. Press the SUBFORM key.

6.2.5 Positioning in the batch

While keying, the operator has certain possibilities for positioning in the batch by means of control keys.

6.2.5.1 Character Positioning

Pressing the CHAR ⟵ key causes the cursor to backspace one character position in the current field. Attempts to backspace beyond first position in the field has no effect. Pressing the CHAR ⟶ key causes the cursor to be moved forward one character position in the field. Attempts to move beyond the last keyed character in the field has no effect.

6.2.5.2 Field Positioning

When the cursor is situated after the first position in a field, pressing the FIELD⟵ key causes the cursor to backspace to the first position in the field. If already in the first position, the field index and the cursor are backspaced to the first position of the previously keyed field, which will be output on the screen in edited format. Backspacing beyond record start is not allowed. Pressing the FIELD ⟶ key causes the field index and the cursor to be moved forward to the next keyed field in the record and the field will be output on the screen in edited format. Moving beyond the last keyed field is not allowed. If the positioning causes page shift the data area of the display is cleared and the already keyed fields in the new page are displayed before the cursor is moved.

6.2.5.3 Record Positioning

Pressing the REC ⟵ key in the first position of the current record causes the field index to backspace to the first keyed position of the previously keyed record. If not in the first position, the field index and the cursor are backspaced to the first position of the current record and the backspaced fields will be output on the screen in edited format. Pressing the REC ⟶ key causes the field index to move to the first keyed position of a record. After positioning to another record the display is cleared, the already keyed fields in the new record are displayed and the cursor is positioned to the first keyed position. Backspacing beyond the start of the batch and moving beyond the last keyed record in the batch is not allowed.

6.2.6 Corrections

6.2.6.1 Character Corrections

Any character in the current field may be corrected before the field is completely keyed by pressing CHAR ⟵ or CHAR ⟶ until the cursor is under the invalid character and then key the character again.

6.2.6.2 Field Corrections

Any field in the current record may be corrected by pressing FIELD ⟵ or FIELD ⟶ until the cursor is under the first position of the invalid field. Single character(s) may be corrected by moving the cursor to the character in question using the CHAR ⟶ key. Or the whole field may be keyed again. Any field in the batch may be corrected by pressing REC ⟵ or REC ⟶ until the record containing the invalid fields is reached and then perform the above described procedure for field corrections.

6.2.6.3 Record Corrections

If it is the last record in the batch, the current record may be cleared by pressing the CLEAR key. In the first position of a record, all records, from the current to the last record in the batch, may be deleted by performing the following:

1. Key: C
2. Press the RECORD key.

6.3 KEY MODE TERMINATION

The registration is automatically terminated when the END statement in the format is reached. During the key mode, the operator interrupt the keying by pressing the ESCAPE key in the first keyed position of a record.

Registration may be interrupted automatically if a hardware malfunction occurs, a divergence between format and batch is delected, or the key station is cleaned by the supervisor. A message displayed on the message line informs the operator about the reason for closing down work at the key station.

When work is interrupted or terminated the following is performed:

* The state flag and the validity flag in the batch status are updated.
* The format area is released, if no other key station uses the same format.
* The record area and the register area are released.
* The operator statistics are transferred to a record in the account file. See section 12.2 about the account system.

The state flag in the batch status will be assigned one of the following three values:

CLOSED	-	Keying has been performed.
REKEYING	-	Concurrent keying and rekeying has been performed.
REKEYING ESCAPED	-	Concurrent keying and rekeying has been performed earlier, but the rekeying is temporary interrupted.

The validity flag is set accordingly to the number of invalid records in the batch.

The mode of the key station is changed to login, the display is cleared, and the system is ready for a new control command.

7 REKEY MODE

7.1 REKEY MODE INITIATION

The verification of a previously keyed data batch is performed in the rekey mode. Each time a field is keyed a comparison is made between the new field and the field already in the batch. The rekey mode is initiated by entering the following command:

1. Key: REKEY
2. Key the batchname (1 to 5 characters).
3. If fill-in-the-blanks guidance is wanted, then key:
   IMAGE
4. If rekeying an already dumped or transferred batch is wanted, then key:
   RELEASE
5. Press the ENTER key.

Examples:
```
REKEY BAT01
REKEY BAT02 RELEASE
REKEY BAT03 IMAGE RELEASE
```

The REKEY command prepares the specified batch for rekey mode by doing the following:

* Checks if the batch name is a batch within the system.
* Checks the batch status to determine whether or not rekeying to the batch is allowed.
* Changes the state flag in the batch status to one of the following two values: REKEYING or KEYING + REKEYING.
* Creates a work batch, if such does not already exist.
* Reserves an area in core to the format and loads the format to core, if it is not already there.
* Reserves areas in core to the record and to the registers.

Rekeying is allowed only if the state flag in the batch has one of the following values:

CLOSED	-	Start of rekeying to a batch.
KEYING	-	Start of rekeying to a batch, while concurrent keying is performed.
REKEYING ESCAPED	-	Reopening the rekeying, which has been interrupted temporary.
KEYING + REKEYING ESCAPED	-	Reopening the rekeying, which has been interrupted temporary. Concurrent keying is taking place.

Rekeying to a batch which is flagged as sorted is not allowed.

The IMAGE and RELEASE parameters are described under the KEY command (section 6.1).

While rekeying the work batch contains the rekeyed records.

All rekeying to the batch will be controlled by the format specified in the batch creation command.

When a valid REKEY command is entered, the display is cleared and the status line will appear, showing the first field to be rekeyed. The key station is now in the rekey mode and the registration may start.

7.2 WORKING CYCLE IN THE REKEY MODE

Fields not programmed for rekeying as well as fields which have already been rekeyed, are automatically generated by using the field already in the batch (the old field) as keyed input to the field. The field status of the old field determines whether or not the field program is executed. If it is flagged as skipped, the field program is not executed; otherwise the field program is executed in order to update the contents of registers.

The keying routine is breaked when an invalid field which should be automatically generated is encountered. The operator is signalled by an error message, and the invalid field must be rekeyed. The operator must also rekey a field programmed for not rekey if the old field is flagged as skipped by statement and the field is not skipped by statement during the rekey.

7.2.1 Rekeying a Field

When a field is keyed, a comparison is made between the field already in the batch and the new field. If they are not equivalent an error message and the old value are displayed. The operator must then rekey the field a second time.

On completion of the second rekey, there will be three possibilities:

1. The new input is now equivalent to the field already in the batch. The input will be accepted and the old value will survive.
2. The new input is equivalent to the field just keyed. The input will now be accepted and the new value will be inserted in the record.
3. There is still a miscompare of the old and new values. The field must be rekeyed until either 1 or 2 takes place.

7.2.2 Rekeying a Record

After a field has been rekeyed, the field index is set to the next field to be rekeyed. After rekeying the last field in a record, the record is transferred to the disc as a record in the work batch and the next record to be rekeyed is located.

Fields which are not keyed in the rekey mode, are generated automatically. The contents of the field already in the batch is used as keyed input to the field.

7.2.3 Subformat Selection

The subformat selection is automatic in the rekey mode and follows the batch. Therefore the SUBFORM key is invalid in the rekey mode. Only when new records are created by the insert record procedure (section 7.2.6.1), the operator may manually change the subformat.

7.2.4 Positioning in the batch

The function of the control keys for positioning are equivalent with the function in key mode, see section 6.2.5.

7.2.5 Corrections

Character, field and records corrections may be performed as in key mode. In rekey mode, the operator has some additional possibilities, described in the following, for inserting records in a batch and deleting records from a batch.

7.2.5.1 Record Insertion. In the first keyed position of a record, the operator may insert a record in the batch, by performing:

1. Key: I
2. Press the RECORD key.

Having performed the insert procedure, the operator keys the new record like in the key mode. When the record is finished, the system returns to the normal rekeying performance.

The new record is inserted before the current record. Insertion of records at the end of a data batch is accomplished by reopening keying to that batch.

The inserted record is not prepared automatically for rekeying; this can be done either by pressing the REC ⟵ key and then key the record again or later on by starting up a new rekey operation to the batch.

7.2.5.2 Record Deletion. In the first keyed position of a record, the operator may delete the record from the batch, by performing:

1. Key: D
2. Press the RECORD key.

7.3. CONCURRENT KEYING AND REKEYING

Rekeying concurrently with the first time keying of the batch may be carried out; but a gab of 12 records must always exist between the keyer and the rekeyer. The rekeying is interrupted automatically if the rekey operator reaches a point which is less than 12 records from the keyer. The key operator cannot backspace beyond 12 records from the point of rekeying when pressing the REC ⟵ key.

7.4 REKEY MODE TERMINATION

The rekeying is terminated automatically when the last record of the batch is rekeyed. The operator may interrupt the rekeying by pressing the ESCAPE key.

The rekeying may sometimes automatically be interrupted as for key mode, see section 6.3.

Along with the actions described under key mode termination, when work is interrupted or terminated the following is performed:

* The state flag in the batch status will be assigned one of the following values:

  CLOSED - The rekeying is terminated.

  KEYING + REKEYING ESCAPED - The rekeying is interrupted temporarily, while a concurrent keying is continued.

  REKEYING ESCAPED - The rekeying is interrupted temporarily.

* If all the records in the batch are rekeyed, the batch is flagged as REKEYED; otherwise the batch is flagged as PARTIAL REKEYED.

* If the new state flag is CLOSED, the old batch is deleted and the work batch is renamed as batch.

The mode of the keystation is changed to login, the display is cleared and the system is ready for a new control command.

8. EDIT MODE

8.1 EDIT MODE INITIATION

The edit mode is the batch search and modification mode and is initiated by the following command:

1. Key: EDIT
2. Key the batch name (1 to 5 characters).
3. If fill-in-the-blanks guidance is wanted, then key:

   IMAGE
4. If editing to an already dumped or transferred batch is wanted, then key:

   RELEASE
5. Press the ENTER key.

Example: EDIT BAT01 RELEASE

The EDIT command prepares the specified batch for edit mode by doing the following:

* Checks if the batch name is a batch within the system.
* Checks the batch status in order to determine whether or not editing to the batch is allowed.
* Changes the state flag in the batch status to the following value: EDITING.
* Creates a work batch, if such does not already exist.
* Reserves an area in core to the format and loads the format to core, if it is not already there.
* Reserves areas in core to the record and to the registers.

Editing is allowed only if the state flag in the batch has one of the following values:

CLOSED	-	Start of editing to the batch
EDITING ESCAPED	-	Re-opening the editing, which has been interrupted temporarily.

Editing to a batch which is flagged as sorted is not allowed.

The RELEASE and IMAGE parameters are described under the KEY command (section 6.1).

While editing the work batch contains the edited records.

The editing to the batch is controlled by the format specified in the batch creation command.

When a valid EDIT command has been entered, the display is cleared and the status line will appear together with the first record in the batch. The key station is now in edit mode and the editing may start.

8.2 WORKING CYCLE IN THE EDIT MODE.

The edit mode comprises two submodes:

* Edit-search mode, in which the operator can search the batch and make corrections by means of commands.
* Edit-key mode, in which the operator can correct one or more fields or records by means of keying like in key mode.

Having accepted the EDIT command, the system selects edit-search mode, the cursor is positioned at the command line (first line of the data area) and the system is waiting for the operator to enter an edit command.

Work in edit mode may be carried out by specifying batch search commands until the system reaches a field or a record which is to be corrected. The operator may change the mode from edit-search to edit-key by means of the KEY command (section 8.3.10) and then key the fields like in the key mode. When the desired fields are corrected the mode may be changed back to edit-search by pressing the ESCAPE key. Now new edit commands may be entered either to reach new fields to be corrected or to finish the editing.

In the edit mode, the operator also has the possibility to delete or insert a record in the batch.

8.2.1 Edit-search Mode

The edit-search mode comprises commands for batch searching and batch modification. A batch may be searched on the basis of:

RECORD	- Move forward to the specified record number (section 8.3.1).
FIELD	- Move forward to the specified field number (section 8.3.2).
INVALID RECORD	- Move forward to the next invalid record (section 8.3.3).
INVALID FIELD	- Move forward to the next invalid field (section 8.3.4).
STRING	- Move forward to the first field containing the specified character string (section 8.3.5).
LOCAL	- Move forward to the first field containing the specified character string in the specified subformat (section 8.3.6).

While the batch is scanned, fields are generated by using the field value already in the batch (the old field) as keyed input to the field. The field status of the old field determines whether or not the field program is executed. If it is flagged as skipped, the field program is not executed; otherwise the field program is executed in order to update the contents of registers.

A search is terminated if:

* The specified item is reached.
* An error during field program execution has occurred.
* An invalid flagged field is met.
* A field flagged as skipped by statement is met; but the field is not skipped by statement during the editing.

When the search is terminated, the status line shows which field is the current one (the field index) and the page of the record which contains

the current field is displayed. The cursor will remain on the command line, and the system is waiting for the operator to enter the next edit command.

If the search is stopped because of an error and before the specified item is reached, the operator may either correct the current field in edit-key mode or enter the CONTINUE command (section 8.3.9) in order to continue the search. If the CONTINUE command is entered the current field will be flagged as invalid.

If the specified item is not found within the batch, the editing is terminated, see section 8.4.

When the operator wants to terminate edit mode, an END command (section 8.3.8) must be entered.

The edit-search mode comprises one search/correction command, the GLOBAL command (section 8.3.7) which searches through the batch from the current field to the end of the batch. Every time a specified character string is found in a field with a specified field number and in a specified subformat, the character string is replaced under format control by another character string. The GLOBAL command terminates the edit mode.

Edit-search mode also comprises commands for insertion and deletion of records as described in the following sections.

8.2.1.1 Record Insertion. In the first field or the first keyed field of a record, the operator may insert a new record in the batch by entering the INSERT command (section 8.3.11). Having accepted the insert command the system clears the data area of the display and positions the cursor at the first keyed field. Now the operator keys the new record like in key mode. A new subformat may be selected before keying the record by performing the subformat selection procedure, see section 6.2.4. When the record is finished, the system returns to the normal edit-search mode performance. The next record is displayed and the cursor is placed at the command line.

The new record is inserted before the current record. Insertions of records at the end of a data batch is accomplished by re-opening keying to that batch.

8.2.1.2 Record Deletion. In the first field or the first keyed field of a record, the operator may delete a record from the batch, by entering the DELETE command (section 8.3.12). Having deleted the current record, the system displays the next record and the cursor is positioned at the command line.

In the edit mode, the operator is able to delete a record of which all fields are not keyed fields. This is not possible in the rekey mode.

8.2.2 Edit-Key Mode

When the KEY command has been entered the mode is changed to edit-key and the cursor is moved from the command line to the position of the first field to be keyed.

8.2.2.1 Keying a Field. The keying of fields in edit-key mode takes place like in key mode, see section 6.2.1. When a field is keyed it is inserted into the record and replaces the value already there.

8.2.2.2 Keying a Record. After keying the last field in a record, the record is transferred to the disc as a record in the work batch. Then the screen is cleared and the next record to be keyed is displayed.

8.2.2.3 Subformat Selection. The subformat selection is automatic in the edit-key mode and follows the batch. Therefore the SUBFORM key is invalid in edit-key mode.

8.2.2.4 Positioning in the Batch. The function of the control keys for positioning are equivalent with the function in key mode, see section 6.2.5. However, there exist the following differences concerning the FIELD→ and REC→ keys. Both the FIELD→ and the REC→ key may be used beyond the last keyed field in a record. The field value already in the batch is then used as keyed input to the field and the field status determines whether or not the field program is executed. Thus the FIELD→ and the REC→ key may be used for moving forward through the batch in order to find new fields to be corrected.

If a search has moved the field index beyond a desired field, the REC ←key may be used in edit-key mode to backspace the field index.

8.2.2.5 Corrections. Character, field and record corrections may be performed as in key mode, see section 6.2.6.

8.2.2.6 Termination of Edit-Key Mode. Edit mode and thereby edit-key mode is terminated automatically when the end of the batch is reached. The operator may at any position in a record change the mode from edit-key to edit-search by pressing the ESCAPE key provided that the record displayed when the KEY command was entered. The cursor is then moved from the current position in the record to the command line.

8.3 EDIT COMMANDS

8.3.1 Record Number

1. Key: RECORD
2. Key a record number (as digits).
3. Press the ENTER key.

RECORD NUMBER moves forward in the batch to the specified record number and positions the field index at the first field in the record. The command can not be used for moving backwards in the batch.

Example: RECORD 10

8.3.2 Field Number

1. Key: FIELD
2. Key a field number (as digits).
3. Press the ENTER key.

FIELD NUMBER moves the field index forward within the current record to the field number specified. The command can not be used for moving backwards from the field currently pointed out by the field index.

Example: FIELD 3

8.3.3 Invalid Record

1. Key: IRECORD
2. Press the ENTER key.

IRECORD searches the batch for the first record which is flagged as invalid. The field index will be positioned at the first field in the flagged record. If current record is invalid, the command has no effect.

8.3.4 Invalid Field

1. Key: IFIELD
2. Press the ENTER key.

IFIELD searches the batch for the first invalid field. When an invalid field is found, the search stops and the field index is positioned at the field. If current field is invalid, the command has no effect.

8.3.5 String

1. Key: STRING
2. Key the delimiting character.
3. Key the string (1 to 70 characters).
4. Key the delimiting character.
5. Press the ENTER key.

STRING searches the batch for the first field containing the specified character string. The field index is positioned to the field containing the character string.

The delimiter may be any data character on the keyboard, but the two delimiting characters must be identical. The last delimiting character may be omitted if the ENTER key is pressed immediately after the character string.

The character string may contain any keyboard data character except the delimiting character. Be aware that leading spaces after the first delimiting character will be a part of the character string.

Examples:

If a search is wanted for the following string:

JACK AND JILL

then key: STRING 'JACK AND JILL'.

If a search is wanted for the following string:

ONE O'CLOCK

then key: STRING /ONE O'CLOCK/

8.3.6 Local

1. Key: LOCAL
2. Key subformat name (1 character).
3. Key a delimiting character.
4. Key the character string (1 to 60 characters).
5. Key a delimiting character.
6. Press the ENTER key.

LOCAL searches for the specified string in subformats of the specified name only. The field index is positioned at the field containing the character string. See further under the STRING command 8.3.5.

Example: LOCAL F 'COMPUTE'

8.3.7 Global

1. Key: GLOBAL
2. Key subformat name (1 character).
3. Key field number (as digits).
4. Key a delimiting character.
5. Key the old character string (1 to 25 characters).
6. Key a delimiting character.
7. Key a delimiting character.
8. Key the new character string (1 to 25 characters).
9. Key a delimiting character.
10. Press the ENTER key.

The GLOBAL command searches through the batch from the current field to the end of the batch. Every time the old character string is found in a field with the specified field number and in the specified subformat, the new character string is inserted in place of the old character string. If the old string is found more than once in a field only the first appearance of the string is changed. When the search is finished the editing is terminated. It is not necessary to surround old and new string with equivalent delimiting characters.

The length of the old and the new string must be equivalent. The insertion is made under format control, so that the type of the new characters is checked.

Examples:
```
GLOBAL  H  1  'F1417'  'F1418'
GLOBAL  1  16 '76..'   '1976'
GLOBAL  A  3  ','  /'/
```

8.3.8 End

1. Key: END
2. Press the ENTER key.

END terminates the editing.

8.3.9 Continue

1. Key: CONTINUE
2. Press the ENTER key.

CONTINUE continues a search when the command has been interrupted by an error.

If an error is found during the search , the search stops and the record containing the invalid field is displayed. If the operator does not want to correct the invalid field the previously keyed command may be continued by means of this command.

8.3.10 Key

1. Key: KEY
2. Press the ENTER key.

The KEY command changes the mode from edit-search to edit-key, so that it is possible to correct one or more fields by keying like in the key mode. The cursor is moved from the command line to the position of the current field.

8.3.11 Insert

1. Key: INSERT
2. Press the ENTER key.

INSERT makes it possible for the operator to insert a record in the batch by keying the record, see section 8.2.1.1.

8.3.12 Delete

1. Key: DELETE
2. Press the ENTER key.

DELETE deletes the current record from the batch, see section 8.2.1.2.

8.4 EDIT MODE TERMINATION

The edit mode is terminated when the end of the batch is reached.

The editing may sometimes automatically be interrupted as for key mode, see section 6.3.

Along with the actions described under key mode termination, when edit mode is interrupted or terminated the following is performed:

* The state flag in the batch status will be assigned one of the following values:

  CLOSED - The editing is terminated.
  EDITING ESCAPED - The editing is interrupted automatically.

* If the editing is terminated, the batch is flagged as EDITED.

* If the new state flag is CLOSED, the old batch is deleted and the work batch is renamed as batch.

The mode of the key station is changed to login, the display is cleared and the system is ready for new control commands.

9 SUPERVISOR MODE

If no supervisor exists, any key station in login mode can designate itself as supervisor provided that the user identification given in the login procedure allows entering supervisor mode.

The following control command is used:

1. Key: SUPERVISOR
2. If the supervisor programs are to be slowed down then key:
   SLOW
3. Press the ENTER key.

The command changes the mode from login to supervisor, the display is cleared and the supervisor state is output.

If the optional parameter SLOW is supplied then some supervisor programs (e.g. DELETE and SURVEY), if activated, will run in the socalled slow-mode meaning that they will enter regular delays to prevent the work on other key stations from being slowed down during supervisor program execution. The length of the delays is a function of a system generation parameter and the number of active key stations.

For operating the supervisor, please consult part 2 of this Users Guide.

If another key station is already the supervisor, the message **SUPERVISOR EXISTS will appear on the screen and the key station will remain in login mode. If the user identification used in the login procedure does not allow supervisor mode, then the message ** NOT USER will appear.

10 WORK TERMINATION

If no work is being done at the key station this may be closed by the following control command:

1. Key: GOODBYE
2. Press the ENTER key.

The GOODBYE command closes the key station by changing the mode to stop mode. The message

'RC3600 DATA ENTRY STATION CLOSED
PRESS LOGIN TO CONTINUE'

is displayed on the screen and the operator must perform the login procedure to reopen the key station.

11 PROTECTION SYSTEM

Before any batch operation, the batch status is checked in order to prevent the operator from doing any unreasonable operation, e.g. delete a batch which neither has been dumped nor saved or dump a batch which already has been dumped.

However, the operator may suspend the protection by specifying a release parameter to some batch operating programs.

The flags (being the batch status) are explained in section 5.3.

The following contains rules for batch status and allowable operations:

* Keying is the initial registration of the batch.
* Keying and rekeying of a batch may be carried out simultaneously.
* Editing cannot be performed simultaneously with keying or rekeying at the same batch.
* Keying, rekeying or editing cannot be performed when the batch has already been dumped or transferred. If desired, the RELEASE parameter in the KEY, REKEY or EDIT command may be used to suspend the protection.
* Keying, rekeying or editing can never be performed when the batch has been sorted.
* If a batch already has been dumped or transferred it cannot be dumped or transferred a second time. If desired, the DUMPOK parameter in the dump or transfer command may be used to suspend the protection.
* A batch specified as 'rekey required' in the batch creation command cannot be dumped or transferred unless the batch is rekeyed. If desired, the RELEASE parameter in the dump or transfer command may be used to suspend the protection.
* A batch specified as 'valid required' in the batch creation command cannot be dumped or transferred unless the batch is valid. If desired, the protection may be suspended by specifying the RELEASE parameter in the dump or transfer command.

* A batch cannot be deleted unless the batch either has been dumped, transferred or saved. If desired, the protection may be suspended by specifying the RELEASE parameter in the delete command.

The supervisor programs and their syntax are described in Part 2 of this Users Guide. The supervisor program SURVEY may be used to examine the batch status of a batch.

12 AUTOMATIC SYSTEM SUPERVISION

12.1 LOG SYSTEM

The system automatically generates an operator log in a disc file which is named the log file. The log indicates the work which has been performed at the key stations by storing a copy of the entered commands, a copy of the receipts from the system and the operator statistics as records in the log file.

The following kinds of commands are stored:

* Supervisor commands.
* Initials and user number from the login procedure.
* Control commands in login mode.

The following kinds of receipts are stored:

* Receipts given in supervisor mode on the message line.
* Receipts given when the login procedure has been performed.
* Receipts given when a control command cannot be performed due to an error.
* Receipts given when keying, rekeying or editing is finished.

Please note that the messages mentioned in section 13.5 are not stored in the log.

The operator statistics describes what has been performed during keying, rekeying or editing and contains:

* Name of the job containing the batch.
* Name of the format used.
* Name of batch.
* Name of the mode being performed.
* Keying time (no. of minutes).
* Number of keystrokes.
* Number of records (including invalid) produced.
* Number of errors during registration.
* Number of invalid records produced.

Besides the copy of a command, a receipt or the operator statistics each record in the log file contains:

* The date for creation of the record.
* The time of day for creation of the record.
* The key station number.
* The initials of the key station operator.

The system comprises supervisor programs for processing the log file. The log file may be dumped on magnetic tape by the supervisor program DUMPSTAT. The LISTLOG program prints the operator log from a magnetic tape created by DUMPSTAT. Both DUMPSTAT and LISTLOG are described in Users Guide part 2.

When the system is installed with NEW catalog, the log file is created on the disc as an area of 300 disc sectors. The system supervises the file and writes an alarm message on the operator console device when 50 sectors are left. The message will be repeated every 2 minutes.

When the log file is full, the system stops writing records in the file and an alarm message also on the console device (repeated every 15 seconds) informs the operators that the file is full.

Besides the dumping to tape, the DUMPSTAT program clears the log file. The supervising operator must activate the DUMPSTAT program regularly in order to clear the log file.

12.2 ACCOUNT SYSTEM

The operator statistics are not only stored in the log file but also in another system file on disc - named the account file. The system comprises supervisor programs which process the account file in order to make print-outs of accumulated operator statistics.

Each record in the account file contains the following information:

* The date for creation of the record.
* The time of day for creation of the record.

* The key station number.
* The initials of the key station operator.
* Name of the job containing the batch.
* Name of the format used.
* Name of the batch.
* Name of the mode being performed.
* Keying time (minutes).
* Number of keystrokes.
* Number of records (including invalid) produced.
* Number of errors during registration.
* Number of invalid records produced.

The supervisor program DUMPSTAT dumps the contents of the account file to magnetic tape. The LISTACCOUNT program accumulates the statistics from a magnetic tape created by DUMPSTAT and prints the accumulated statistics on the basis of job names and/or operator initials. Both DUMPSTAT and LISTACCOUNT are described in Users Guide part 2.

When the system is installed with NEW catalog, the account file is created on the disc as an area of 95 disc sectors. The system supervises the file and writes an alarm message on the operator console device when 15 sectors are left. The message will be repeated every 2 minutes.

When the account file is full, the system stops writing in the file and an alarm message also on the console device (repeated every 15 seconds) informs the operators that the file is full.

Besides the dumping to tape, the DUMPSTAT program clears the account file. The supervising operator must activate the DUMPSTAT program regularly in order to clear the account file.

12.3 DISC SPACE SUPERVISION

The amount of free disc space is supervised automatically by the system. The message ** DISC ALMOST FULL will appear on the operator console device when 300 sectors are left. The message will be repeated every 2 minutes. When 150 sectors are left, the message is changed to ** DISC FULL and is now repeated every 15 seconds.

As soon as the messages begin to appear, the supervisor ought to start deleting batches no longer used because the work at a key station is interrupted if a batch needs extension and free disc sectors are not available.

12.4 CHECKPOINT AND RESTART

Every 15 seconds the current status of work being done at the key stations (named a checkpoint) is stored on the disc.

If the system is stopped (e.g. in case of system break-down) while some key stations are active(i.e. keying, rekeying or editing), the latest checkpoint is used to close down the active batches when the system is restarted. The operations which were abrupted by the system break-down may be continued when the system is ready again.

13.1 STOP MODE

MESSAGE	MEANING	REPAIR
NOT INIT	The initials are not 2 or 3 characters.	Perform the login procedure again.
NOT USER	The keyed number is not a user number. Or user identification can not be accepted as it is not mentioned in the passwordfile. Or the user identification in the passwordfile contains an illegal supervisor digit (i.e. not 0 or 1).	Perform the login procedure again. Or correct the passwordfile.
STATION LOGGED IN	The login procedure has been accepted.	

13.2 LOGIN MODE

MESSAGE	MEANING	REPAIR
BATCH DUMPED OR TRANSFERRED	Keying, rekeying or editing cannot be performed because the batch already has been dumped or transferred.	Specify the RELEASE parameter in the KEY, REKEY or EDIT command if desired.
BATCH END	Keying cannot be performed because the END statement is executed.	In edit mode the last record of the batch may be deleted or records may be inserted into the batch.
BATCH ERROR	A serious inconsistence is found between the batch and the format which controls the keying, rekeying or editing. The registration is closed down.	Check that the format in control is unchanged from a previous registration - also the size and number of registers must be unchanged. Otherwise the message is due to a software error.
BATCH EXISTS	The batch name already exists within the system.	Delete the existing batch or create the batch with another name.
BATCH IN USE	The job specifies that the batch is being used by another key station or by a supervisor program.	Wait until the other key station has finished the work on the batch or until the supervisor program finishes. If the batch is not in use it is necessary to reload the system as a supervisor program has not cleared the reservation of the batch. If this does not help, the job specification may be cleared by program RESCUE.
BATCH NOT IN JOB	The batch does not exist in the job.	Fatal system error, please contact RC.
BATCH SIZE	The specified batch size is not in the range of 2 and 761.	Re-enter the SET command with a correct batch size.
BATCH SORTED	Key, rekeying or editing cannot be performed because the batch has been sorted.	

MESSAGE	MEANING	REPAIR
BATCH STATUS	The value of the state flag in the specified batch prevents keying, rekeying or editing to the batch. For KEY commands the state must be BLANK, CLOSED, REKEYING or REKEYING ESCAPED. For REKEY commands it must be CLOSED, KEYING, KEYING + REKEYING ESCAPED or REKEYING ESCAPED. For EDIT commands it must be CLOSED or EDITING ESCAPED.	Dependent on the value of the state flag and the control command entered one of the following actions may repair the situation. If the state flag is ESCAPED, then finish the rekeying or editing. If the state flag is BLANK, enter a KEY command. If the state is keying, rekeying or editing and no key station is using the batch, then execute the supervisor program RESCUE.
CHAR LOST	One or more characters are lost by the system.	Re-enter the command.
CONTROL KEY NOT ALLOWED	The control key just pressed has no function in this mode.	The message is a warning, so the input may continue.
CURSOR OUTSIDE SCREEN	Keying, rekeying or editing is closed down because the format (or image) is prepared for a larger screen.	Repair the format or image (line and/or position). Or use a key station with a larger screen.
DISC ERROR, FILE: <Name> STATUS: <Code>	A hardware or software malfunction has occured during a disc operation. Consult User's Guide Part 2 , appendix 2 for the meaning of the codes. <Name> is the name of the discfile accessed when the error occured (e.g. a batchname).	Dependent on the value of the code it may be necessary to 1) Re-load the system 2) Install the system with catalog NEW 3) Repair the disc device.
ENTRY EXISTS	The batch name in a SET command or the work batchname created by a REKEY or EDIT command already exists as an entry on the disc.	See repair for BATCH EXISTS.
FORMAT CATALOG FULL	The format catalog in core is full due to fatal system error.	Re-load the system.
FORMAT IN USE	The format is reserved by another system function (a supervisor program).	Wait for the supervisor program to finish. If no supervisor program is running it is necessary to reload the system in order to clear the reservation.
FORMATLIBRARY IN USE	The formatlibrary is reserved by another system function (a supervisor program).	See repair for FORMAT IN USE.
FORMAT NOT FOUND	There is no format by the specified name in the format library.	Re-enter the SET command with another format name. Install the format into the system.
JOB IN USE	The job is reserved by another system function (a supervisor program).	See repair for FORMAT IN USE.

MESSAGE	MEANING	REPAIR
JOB IN USE - NOT CLEARED	The job is reserved by a supervisor program; but the desired function has to be executed.	See repair for FORMAT IN USE. Afterwards the batch must be rescued in order to clear the batch reservation in the job.
JOB LIBRARY IN USE	The job library is reserved by another system function (a supervisor program).	See repair for FORMAT IN USE.
KEYER REACHED	Rekeying is closed down owing to the key operator is reached.	Wait for the keyer to finish, then continue rekeying.
KEY STATION ERROR	Keying, rekeying or edition is closed down owing to a keyboard/display hardware malfunction.	
LENGTH	The command given contains more than 80 characters.	Enter a shorter command.
NO AREA	The required disc area is not available (SET command). Or system used core area is not available (All control commands).	Delete some areas on the disc or wait for some operations which reserve areas in core to finish.
NO BATCH FILE	No disc file with the specified batch name exists.	Create the specified batch or enter the KEY, REKEY or EDIT command with a proper batch name.
NO FORMAT AREA	No area is available in the core for the specified format.	Wait for some operations which reserve areas in core to finish.
NO FORMAT ENTRY	The disc file containing the format is no longer in the system. Inconsistency caused by wrong use of the supervisor program DELETE.	Translate the format once more or load the format from a save tape.
NO FORMAT LIBRARY	The format library is no longer in the system (system inconsistency).	Save all jobs and install the system again with catalog NEW.
NO JOB FILE	The job is no longer in the system (system inconsistency), and the batch is lost.	
NO JOB LIBRARY	The job library is no longer in the system (system inconsistency).	Save all batches and formats, and install the system with catalog NEW.
NO RECORD AREA	No area is available in the core for the format record.	See repair NO FORMAT AREA.
NO WORK BATCH FILE	The work batch file does not exist (system inconsistency).	Use the supervisor program RESCUE to change the batch status.

MESSAGE	MEANING	REPAIR
NOT BATCH	The specified name is not a batch.	Enter the KEY, REKEY or EDIT command with a proper batch name.
NOT BATCH NAME	The specified batch name is not a name, i.e. 1 to 5 characters where the first must be a letter, the rest letters or digits.	See repair for NOT BATCH.
NOT COMMAND	The command given is not a control command.	Consult the command descriptions in this manual.
NOT FORMAT NAME	The specified format name is not a name, see NOT BATCH NAME.	Enter the SET command with a proper format name.
NOT JOB	The specified job name is not a job.	Enter the SET command with a proper job name.
NOT JOB NAME	The specified job name is not a name, see NOT BATCH NAME.	See repair for NOT JOB.
NOT USER	The user identification given in the login procedure does not allow the user to enter supervisor mode.	Close down the key station with the GOODBYE command. Perform the login procedure with user identification allowing supervisor mode, and give the SUPERVISOR command once more.
OK	Keying, rekeying or editing has correctly been performed and closed down.	
PARAMETER ERROR	The command entered is not valid.	Consult the command descriptions in this manual.
SOURCE BATCH NOT REMOVED	During termination of rekeying or editing the source batch has not been removed.	Re-enter the REKEY or EDIT command in order to terminate rekeying or editing.
STATION CLEANED BY SUPERVISOR	Keying, rekeying or editing is closed down by the supervisor function CLEAN.	
SUPERVISOR EXISTS	Another key station is already the supervisor.	Wait until the other key station has made a stop command.
WORK BATCH IN USE	The work batch is reserved by another process (i.e. a supervisor program).	See repair for BATCH IN USE.

13.3 KEY, REKEY AND EDIT MODES

MESSAGE	MEANING	REPAIR
ALLOW	The field value is not in the list or table specified in the ALLOW statement.	Key a proper value or bypass the field by pressing the BYPASS key.
CHAR LOST	One or more fields are lost by the system.	Re-enter the fields.

MESSAGE	MEANING	REPAIR
COMPARE FAILURE	The old field value and the new field value are not equivalent. The old value of the field is displayed on the third line, beneath the message.	See section 7.2.1.
DISALLOW	The field value is in the list or table specified in the DISALLOW statement.	See repair for ALLOW.
DUP NOT ALLOWED	Use the DUP key is not allowed (conflict with field kind).	Enter a value into the field.
DUP REGISTER ERROR - UNDEFINED	Use of the DUP key is not allowed as the register to be used is not yet initialized.	Key the field.
END STATEMENT ERROR	The END-statement has been encountered during insertion of a record in rekey or edit mode.	If possible, key something which avoids the END-statement from being executed. If the statement occurs in a not-keyed field the record will be flagged and next record is moved to.
ESCAPE NOT ALLOWED	Use of the ESCAPE key is not allowed either because current field is not the first keyed field in the record or because the current record is not the last record in the batch or because the control key is not valid in the current state of work.	Consult section 2.2.2, 6.3 and 7.4. In edit-key mode, use REC ⟶ to move to the record at which the mode was entered (section 8.2.2.6).
FIELDBACK NOT ALLOWED	Use of the FIELD ⟵ key is not allowed in the first keyed position of a record.	
FIELDFORWARD NOT ALLOWED	Use of the FIELD ⟶ key is not allowed beyond the last keyed field.	
INVALID FIELD	A search is stopped in the edit mode because an invalid field is reached. A field programmed for not rekeying is invalid.	In edit mode, the invalid field must be corrected or the search may be continued by a CONTINUE command. In rekey mode, the invalid field must be rekeyed.
LENGTH	Too many characters have been keyed into the field.	
LIMIT	The field value is outside the range of numbers specified in the LIMIT statement.	See repair for ALLOW.
NAME LENGTH	The subformat name specified in a LOCAL or GLOBAL command is not a single character.	Enter a valid EDIT command.

MESSAGE	MEANING	REPAIR
NO CONTINUE	The CONTINUE command is not allowed as first entered command in the edit mode.	Enter a valid EDIT command.
NO SUBFORMAT	The subformat specified in the subformat selection procedure does not exist in the format.	
NOT COMMAND	The entered command is not an EDIT command.	Enter a valid EDIT command.
NOT ENOUGH CHARACTERS	Too few characters have been keyed in the field.	Key the field once more with sufficient number of character, or BYPASS the field.
NOT NUMBER	No record or field number is specified or the specified number is not a number (for RECORD, FIELD and GLOBAL commands).	Enter a valid EDIT command.
RECORD BACKSPACE NOT ALLOWED	Use of the REC⟵ is not allowed in the first keyed record in the batch.	
RECORD FORWARD NOT ALLOWED	Use of the REC⟶ key is not allowed in the last keyed record in a batch.	Consult section 2.2.2.
RECORD NOT ALLOWED	Use of the RECORD key is not allowed or the RECORD key does not follow a C, D or I.	Consult section 2.2.2 for the correct use of the RECORD key.
REKEYER REACHED - RECORD BACK	Pressing the REC⟵ key is not allowed, because the rekeyer is reached.	
SKIP BY STATEMENT FIELD	A search is stopped in the edit mode, because a field has status SKIP BY STATEMENT and is not skipped by statement in the edit mode. A field programmed for not rekeying has status SKIP BY STATEMENT and is not skipped in rekey mode.	In edit mode, the field must be keyed or the search may be continued by a CONTINUE command (the field is flagged as invalid). In rekey mode, the field must be rekeyed.
STRING LENGTH	The string specified in a STRING, LOCAL or GLOBAL command is invalid.	Enter a valid EDIT COMMAND.
SUBFORMAT CHANGE NOT ALLOWED	Use of the SUBFORMAT key is not allowed either because mode is rekeying or editing or because the current record is not the last record in the batch or because SUBFORM is not pressed in the first keyed field of a record.	Consult section 2.2.2.
SUBFORMAT IS PROTECTED	Subformat change to the specified subformat is not allowed, because the subformat is protected.	

MESSAGE	MEANING	REPAIR
THIS FIELD MUST BE KEYED	A record cannot be released to the system by pressing the REC REL key because a field has been programmed with min. length greater than zero.	Key the field.
TYPE ERROR	The wrong type of characters have been keyed in the field.	Key the field once more without the illegal characters, or press the BYPASS key.
WRONG USE OF CONTROL KEY	The ESCAPE, DUP, FIELD ⟶, REC ⟶, REC ⟵, or BYPASS key is not pressed in the first position of a field, or the SUBFORM or RECORD key is not pressed in second position.	Consult section 2.2.2.

13.4 ERROR MESSAGES WHEN DEBUGGING NEW FORMAT PROGRAMS.

MESSAGE	MEANING	REPAIR
DUP REGISTER ERROR - LENGTH	The length of a register specified in the register column of the field description unequals the length of the field.	Check the field description and the DEFINE statement defining the register to see what is to be corrected. See also Format Language Guide section 3.3.2 and 4.4.2.
DUP REGISTER ERROR -TYPE	The contents of a register specified in the register column of the field description does not correspond to the type of the field when the DUP key is activated.	Examine the format program to see why the register is not of acceptable type. For numeric fields, please note that the register must not contain different fill characters from what is specified in the field description.
DUP REGISTER ERROR - UNDEFINED	A register occurs in the register column in the field description without being defined or the DUP key is activated when the register has not been initialized.	Key the field. If this does not help, then correct the format program (e.g. DEFINE the register).
FORMAT ERROR - LENGTH	The storing of a numeric value in a COMPUTE or SEARCH statement is not possible because the extent of the destination operand is too small.	Find the invalid statement and increase the extent of the register or field in question.
FORMAT ERROR - TYPE	The function assigned to a field does not correspond with the field type. Or a comparison is made between a numeric and non numeric operand. Or the function assigned to a register by using subscript does not correspond to the register type.	Consult section 3.3 in the Format Language Guide which describes the operands and their corresponding types.
FORMAT ERROR - UNKNOWN	The format is specifying an unknown operator, or is using disctables in a system, which does not include the facility.	Re-translate the format, if it does not help, contact RC.

MESSAGE	MEANING	REPAIR
NO SUBFORMAT	The subformat specified in a SELECT statement does not exist in the format.	Correct the format and re-translate it.
REGISTER AREA	The reserved register area is too small (software error).	Please inform RC.
REGISTER MULTIPLE DEFINED	Redefinition of a register to a different length is not allowed.	Examine the DEFINE statements in the field program in order to find and correct the invalid statement.
REGISTER NOT INITIALIZED	An uninitialized register is used as source operand in a program statement.	Examine the field program to determine how the register should be assigned a value. See Format Language Guide sections 3.3.2. and 4.6.
REGISTER SUBSCRIPT ERROR	A subscript used on a register is too large.	Examine the statement which defined the register to see the length of it and correct the subscript pointing beyond the register.
REGISTER UNDEFINED	A register is referred in a statement without being defined.	Every register referred in a program statement must be defined with a DEFINE statement.
SKIP OR DUP TOO FAR	The number of fields in a SKIP or DUP statement exceeds the number of succeeding fields in the subformat. Or a field which requires keyed input occurs before the number of fields in a DUP statement.	Correct the number of fields in the statement.
STACK	The interpretation of a field program has stopped because resources are too small.	Simplify the field program, e.g. by splitting up complicated expressions into a number of expressions. If it does not help, please contact RC in order to change the system option defining the size of the run-time stack.
STACK ERROR	Stack error during field program interpretation.	Please inform RC.

13.5 MESSAGES ON OPERATOR CONSOLE DEVICE (TTY).

MESSAGE	MEANING	REPAIR
ACCOUNT FILE ALMOST FULL	The account file is almost full. The message is repeated every 2 minutes.	Dump or clear the account file by the supervisor program DUMPSTAT.
ACCOUNT FILE ERROR <Code>	A hardware or software malfunction has occured during account file disc operations. Consult User's Guide Part 2, Appendix 2 for the meaning of the codes.	Check the status of the account file (file name: ACCO) by means of supervisor programs, e.g. SYSTEM CAT. If the error persists all batches and formats must be saved and the disc must be reinitialized (NEW).
ACCOUNT FILE FULL	The account file is full. Operator statistics are no longer output to the file. The message is repeated every 15 seconds.	Dump or clear the account file by the supervisor program DUMPSTAT.

MESSAGE	MEANING	REPAIR
CHECKPOINT ERROR <Code>	A hardware or software malfunction has occurred during disc operations to one of the checkpoint files. Consult User's Guide Part 2, appendix 2 for the meaning of the codes.	Check the status of the checkpoint files (file names: CHF10 and CHF11) by means of supervisor programs, e.g. SYSTEM CAT. If the error persists all batches and formats must be saved and the disc must be reinitialized (NEW).
DISC ALMOST FULL	Message from the disc supervision process DSP00. The message will appear when 300 sectors are left on the disc and is repeated every 2 minutes.	Delete some areas on the disc.
DISC ERROR <Code>, SPOOL CLOSED	A discerror has occurred during printing from the spoolfile. <Code> is described in the User's Guide Part 2, appendix 2. Printing from spoolfile is stopped.	Try to restart printing from spoolfile by the supervisor command SPOOL START. Check the status of the spoolfile (file name XSPFX). Check whether printouts can still be produced in the spoolfile. If the error persists all batches and formats must be saved and the disc must be reinitialized (NEW).
DISC FULL	Message from the disc supervision process DSP00. The message will appear when 150 sectors are left on the disc and is repeated every 15 seconds.	Delete some areas on the disc.
FPA ERROR	Message from the interprocessor communication module XCOMX, which has detected a hardware malfunction concerning the connection between the two processors in a processor expansion system.	The connection between the two processors is lost. Restart the system. Call for a technician, if the error persists.
KEY STATION <number> ERROR <code>	A hardware malfunction has occurred on the telemultiplexer concerning the specified key station (by number). The error codes are described in Appendix 1.	Check the power switches and cabels on the key station in question.
LOG FILE ALMOST FULL	The log file is almost full. The message is repeated every 2 minutes.	Dump or clear the log file by means of the supervisor program DUMPSTAT.
LOG FILE ERROR <Code>	A hardware or software malfunction has occurred during disc operation to the log file. Consult Appendix 2 in User's Guide Part 2 for the meaning of the error.	Check the status of the log file (file name: LOGF) by means of supervisor programs, e.g. SYSTEM CAT. If the error persists all batches and formats must be saved and the disc must be reinitialized (NEW).
LOG FILE FULL	The log file is full. The control and supervisor commands are no longer stored in the log file. The message is repeated every 15 seconds.	Dump or clear the log file by means of the supervisor program DUMPSTAT.

MESSAGE	MEANING	REPAIR
SPOOL DEVICE ERROR <Code>, SPOOL CLOSED	An error has occurred during printing from the spoolfile, and printing is stopped. <Code> is described in appendix 4,5 or 6 in part 2 of the User's Guide depending on currently used hardcopy device. The code 001000 means that hardcopy device is reserved by another system function. Printouts can still be generated in the spoolfile.	Try to continue the printing by entering the supervisor command SPOOL START - if desired. For further information please consult section 7.4 in the User's Guide Part 2.
SYSTEM ERROR CATW MISSING	Fatal system error. Please inform RC.	Re-load the system.
SYSTEM ERROR UNIT MISSING	Fatal system error. Please inform RC.	Re-load the system.

14 MESSAGES IN LOCAL LANGUAGE

With respect to key operators which are not English spoken, the system offers the possibility of translating the messages described in section 13 (except console device messages) into a local language.

Appendix 5 contains a list of the system messages and for each message a corresponding number. Numbers with no corresponding message are marked UNUSED and not used by the system. Please note that the maximum number of characters in a message is 35. The system messages are stored in a disc file (name: ALARM), and the file is accessed whenever the system wants to display a message for the operator.

The contents of the message file may be changed to local language by doing the following:

* Having initialized the system with NEW catalog, a batch (SYSB1) containing messages in English is available in the system. The batch is keyed under control of the standard format ERMES (see appendix 6), also available in the system. Each record keyed under control of ERMES contains two fields: message number and message.
* The operator may edit the batch (command: EDIT SYSB1 or EDIT SYSB1 IMAGE) and replace the English messages by local ones.
* Having performed the editing, the new messages are installed by calling the supervisor program NEWMESSAGES.
* Save the system batch (SYSB1) which now contains the new system messages.

Future system initializations with catalog NEW or UPD must be followed by:

* Delete system batch (SYSB1).
* Load the edited system batch from savetape.
* Install the new messages by calling the supervisor program NEWMESSAGES.

15 ENTERING OF PASSWORDS (not yet available)

Passwords are used by the system to check whether the user identification entered in the login procedure (section 3.2) corresponds to a legal user identification stored on disc in the password file. The system furthermore offers the possibility of preventing key stations using certain user identifications from entering supervisor mode.

If no passwordfile is present then any initial and user number will be accepted in the login procedure provided that they conform to the format described in section 3.2. And any key station in login mode is allowed to enter supervisor mode at times when no other key station is supervisor.

No passwordfile is present upon system installation.

The passwordfile is a table each entry containing a user identification as a combination of initials and user numbers the latter extended with a digit indicating if the combination allows entering to supervisor mode.

To enter a passwordfile, proceed as follows:

Use the standard format TABLE (see Format Language Guide sections 2.3.2 and 5.3) to create a batch and use supervisor program TRANSLATE to translate the batch into a table. The table will then be used by the system as passwordfile.

The table must conform to the following demands:

1. Table name must be PASSW.
2. Type must be D (double entired core-table).
3. A-type must be AN.
4. A-lgth must be 3, corresponding to initials.
5. F-type must be N.
6. F-lgth must be 7, corresponding to user number extended with 'supervisor digit'.

Each table entry contains a user-identification:

Argument: Contains initials (3 characters).

Function: Contains user number (6 digits) and 'supervisor digit' (one digit/the right most) where 0 = not allowed as supervisor, 1 = allowed as supervisor).

The batch and table PASSW should be saved using supervisor program SAVE. PASSW may then be reinstalled after future system installations.

Example:

initials	user number + 'supervisor digit'
POL	1000230
POL	1000240
AKN	3002010
AKN	1000230
AKN	7230001

The only user identification of above mentioned to allow entering to supervisor mode is AKN 723000.

To change the contents of the passwordfile, proceed as follows:

1. Perform the login procedure with a user identification allowing supervisor mode.
2. Correct the batch in KEY, REKEY, or EDIT mode.
3. Enter supervisor mode.
4. Delete table PASSW by using the DELETE program.
5. Create a new passwordfile by translating the batch by using the TRANSLATE program.

Notice:

Do not create a passwordfile, which only contains zeroes as supervisor digits, since this prevents everybody from being supervisor. If this is done errorously, only a system initialization with NEW can change that situation.

APPENDIX 1

KEY STATION ERROR CODES

RC3682 Asyncronous Multiplexer:

Code	Meaning
100000	The line is disconnected. This message will appear after the system has been power restarted.
040000	The key station is not ready. Will appear when power is switched off the key station (data set not ready).
020000	Not used by the Date Entry Sys tem (calling indicator).
010000	Not used by the Data Entry System (carrier off).
001000	The line does not exist.
000200	Not used by the Data Entry System (carrier on).
000040	Parity error.
000020	Break received on the line. Due to either a hardware malfunction or because the power has been switched off the key station.
000002	Hardware malfunction (timeout).

A combination of error codes may appear.

RC3683 Asyncronous Multiplexer

Code	Meaning
100000	The line is disconnected. Will appear after the system has been power restarted.
040000	The key station is not ready (data set not ready). Will appear when power is switched off the key station.
020000	Not used by the Data Entry System (calling indicator).
010000	Not used by the Data Entry System (carrier off).
001000	The line does not exist on a hardware malfunction (illegal command).
000200	Hardware malfunction (input buffer overflow).
000100	Hardware malfunction (data late).
000040	Parity error.
000020	Break received on the line. Due to either hardware function or because the power has been switched off the key station.
000002	Hardware malfunction (time out).

A combination of error codes may appear.

APPENDIX 2

LOGIN COMMAND LIST

EDIT command syntax:

```
EDIT    batchname    [IMAGE]    [RELEASE]
```

GOODBYE command syntax:

```
GOODBYE
```

KEY command syntax:

```
KEY     batchname    [IMAGE]    [RELEASE]
```

REKEY command syntax:

```
REKEY   batchname    [IMAGE]    [RELEASE]
```

SET command syntax:

```
SET     jobname    formatname    batchname    [ size ]    [REKEY]    [VALID]
```

SUPERVISOR command syntax:

```
SUPERVISOR    [SLOW]
```

The notation used is described in section 3.4 of Data Entry Format Language Guide.

APPENDIX 3

EDIT COMMAND LIST

CONTINUE command syntax:

```
CONTINUE
```

END command syntax:

```
END
```

DELETE command syntax:

```
DELETE
```

FIELD command syntax:

```
FIELD      number
```

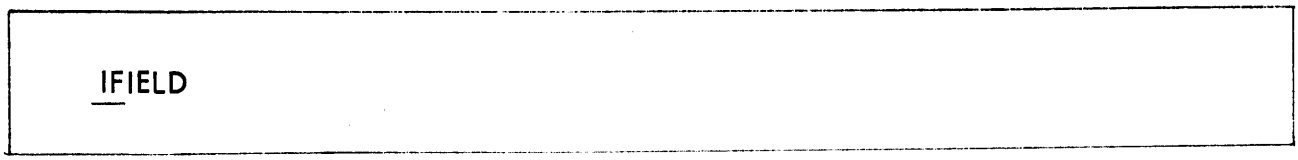
GLOBAL command syntax:

```
GLOBAL    subformat  name  number  delimiter1  characterstring  delimiter1
                                   delimiter2  characterstring  delimiter2
```

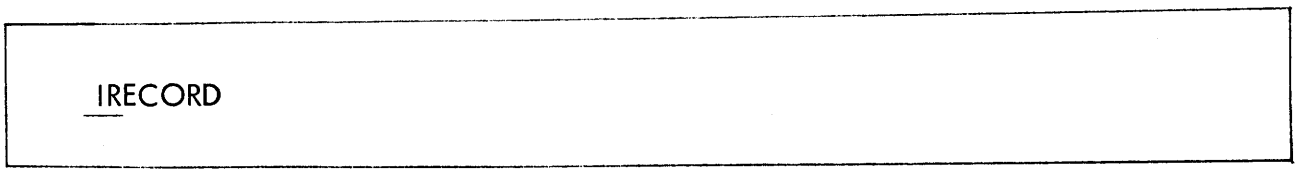
INSERT command syntax:

```
INSERT
```

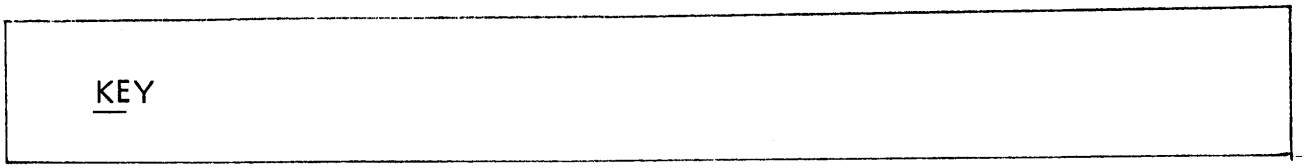
INVALID FIELD command syntax:



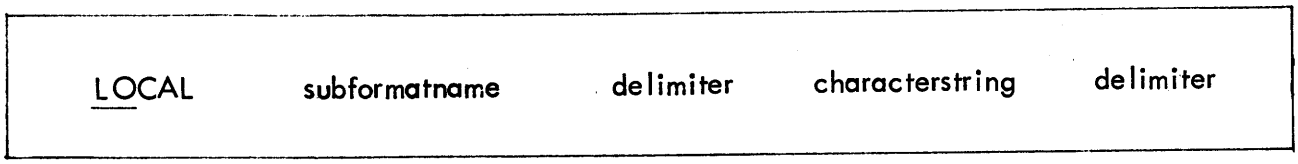
INVALID RECORD command syntax:



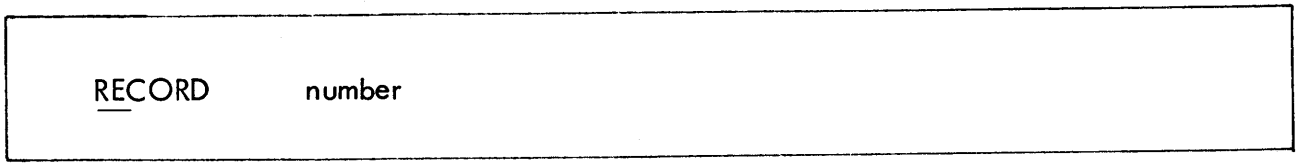
KEY command syntax:



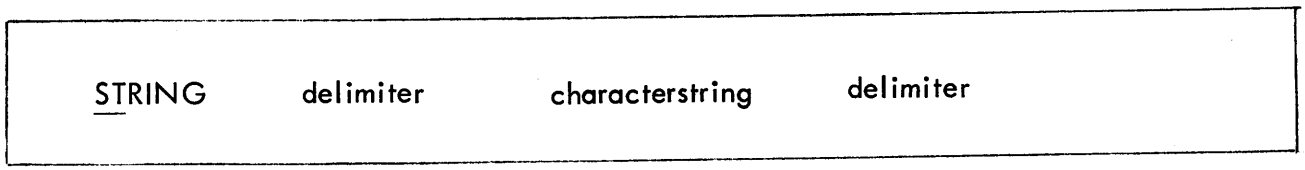
LOCAL command syntax:



RECORD command syntax:



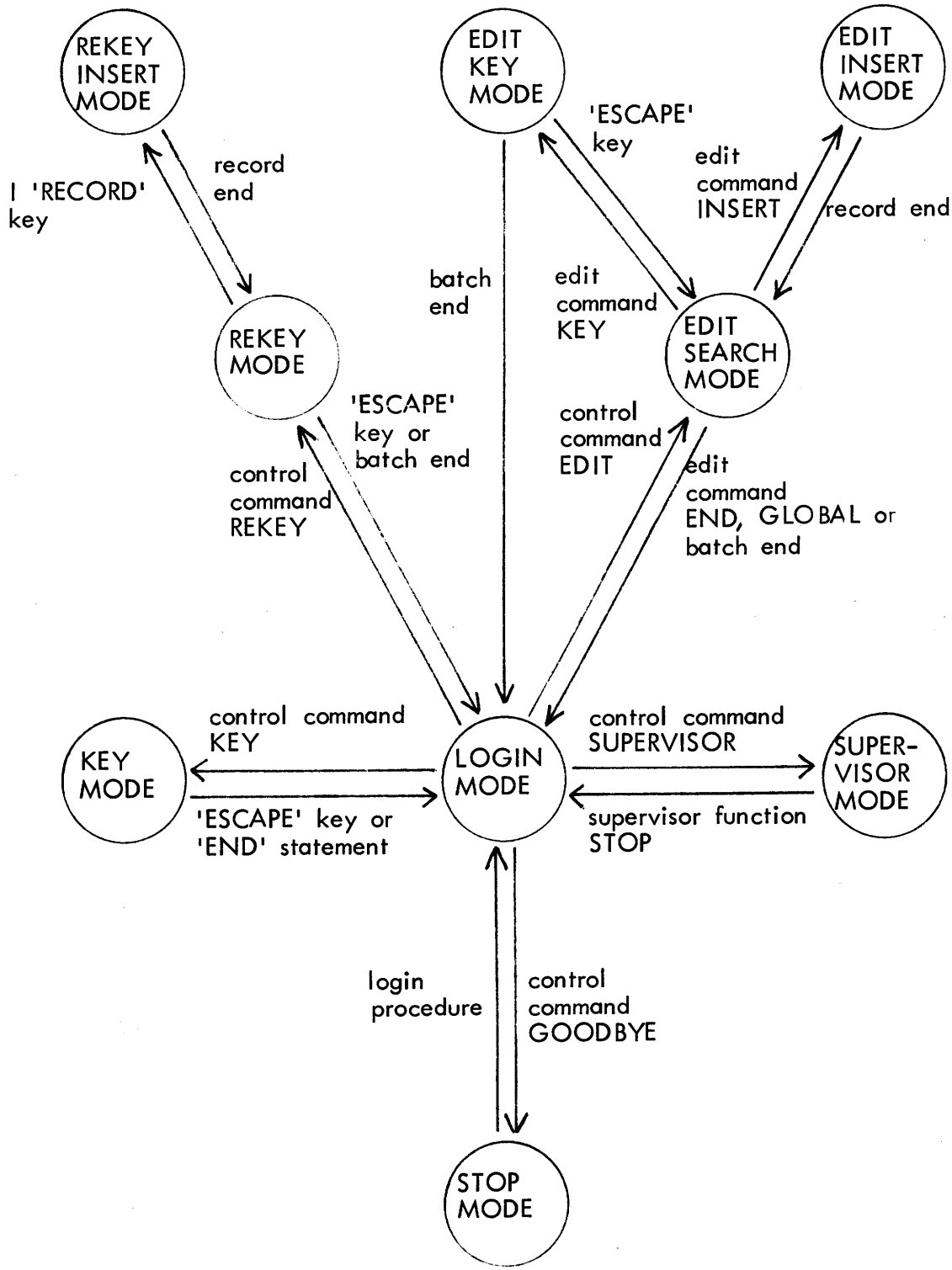
STRING command syntax:



The notation used is described in section 3.4 of Data Entry Format Language Guide.

APPENDIX 4

SYSTEM MODES



APPENDIX 5

LIST OF MESSAGES AND CORRESPONDING NUMBERS.

```
THE MESSAGES USED IN THE DATA-ENTRY SYSTEM ARE:

MESS. NO.          TEXT

      001  ** NOT INIT
      002  ** NOT USER
      003  ** NOT COMMAND
      004  ** NOT JOB NAME
      005  ** NOT BATCH NAME
      006  ** BATCH EXISTS
      007  ** BATCH SIZE
      008  ** NO AREA
      009  ** ENTRY EXISTS
      010  ** CURSOR OUTSIDE SCREEN
      011  ** FORMAT ERROR - UNKNOWN
      012  ** NOT BATCH
      013  ** NO BATCH FILE
      014  ** NO JOB FILE
      015  ** BATCH STATUS
      016  ** NOT FORMAT NAME
      017  ** NO RECORD AREA
      018  ** FORMAT NOT FOUND
      019  ** NO FORMAT AREA
      020  ** FORMAT CATALOG FULL
      021  ** KEY STATION ERROR
      022  ** SUPERVISOR EXISTS
      023  ** NO FORMAT LIBRARY
      024  ** NO FORMAT ENTRY
      025  ** BATCH IN USE
      026  ** NO JOB LIBRARY
      027  ** BATCH DUMPED OR TRANSFERRED
      028  ** BATCH SORTED
      029  ** BATCH NOT IN JOB
      030  ** PARAMETER ERROR
      031  ** NO WORK BATCH FILE
      032  ** OK
      033  UNUSED
      034  ** STATION CLEARED BY SUPERVISOR
      035  ** KEYER REACHED
      036  ** NO CONTINUE
      037  ** NOT NUMBER
      038  ** STRING LENGTH
      039  ** NAME LENGTH
      040  ** NOT JOB
      041  ** STATION LOGGED IN
      042  RC3600 DATA ENTRY STATION CLOSED
      043  PRESS LOGIN TO CONTINUE
      044  ** CONTROL KEY NOT ALLOWED
      045  ** SOURCE BATCH NOT REMOVED
      046  ** BATCH END
      047  ** JOB IN USE - NOT CLEARED
      048  ** JOB IN USE
      049  ** JOB LIBRARY IN USE
      050  UNUSED
      051  ** WORK BATCH IN USE
      052  ** FORMAT LIBRARY IN USE
      053  ** FORMAT IN USE
      054  ** CHAR LOST
      055  ** BATCH ERROR
 056 - 084  UNUSED
      085  ** STACK ERROR
      086  ** STACK
      087  ** FORMAT ERROR - LENGTH
      088  ** FORMAT ERROR - TYPE
      089  ** REGISTER UNDEFINED
      090  ** REGISTER MULTIPLE DEFINED
      091  ** NO SUBFORMAT
      092  ** SKIP OR DUP TOO FAR
      093  ** REGISTER AREA
      094  ** LIMIT
      095  ** ALLOW
      096  ** DISALLOW
      097  ** REGISTER SUBSCRIPT ERROR
      098  ** REGISTER NOT INITIALIZED
      099  ** FIELDBACK NOT ALLOWED
      100  ** FIELDFORWARD NOT ALLOWED
      101  ** DUP NOT ALLOWED
      102  UNUSED
      103  ** RECORD NOT ALLOWED
      104  ** COMPARE FAILURE
      105  ** SKIP BY STATEMENT FIELD
      106  ** NOT ENOUGH CHARACTERS
      107  ** TYPE ERROR
      108  ** INVALID FIELD
      109  ** THIS FIELD MUST BE KEYED
      110  ** WRONG USE OF CONTROL KEY
      111  ** RECORD FORWARD NOT ALLOWED
      112  ** REKEYER REACHED - RECORD BACK
      113  ** RECORD BACKSPACE NOT ALLOWED
      114  ** ESCAPE NOT ALLOWED
      115  ** SUBFORMAT CHANGE NOT ALLOWED
      116  ** SUBFORMAT IS PROTECTED
      117  ** LENGTH
      118  ** END STATEMENT ERROR
 119 - 120  UNUSED
      121  ** DUP REGISTER ERROR - LENGTH
      122  ** DUP REGISTER ERROR - TYPE
      123  ** DUP REGISTER ERROR - UNDEFINED
 124 - 126  UNUSED

END LIST
```

APPENDIX 6

STANDARD FORMAT ERMES.

```
LIST:  FORMAT-SOURCE TEXT  (SYSB2):

           REC  FNAME S P COMMENT
           0001 ERMES A Y STANDARD FORMAT ERMES - ENTERING NEW ERROR MESSAGES

  S FLD LIN REC  NAME  P LN PS LG ML TY OUT J F R D K RG PROGRAM STATEMENTS

  A 001 001 0002               0                        DEFINE X01 3, COMPUTE X01= 0,
  A 001 002 0003                                        SELECT SUBFORMAT B,
  A 001 003 0004                                        END SUBFORMAT,


           REC  FNAME S P COMMENT
           0005 ERMES B   SUBFORM B - CONTROLLING ONE ERROR MESSAGE

  S FLD LIN REC  NAME  P LN PS LG ML TY OUT J F R D K RG PROGRAM STATEMENTS

  B 001 001 0006 NO    1  2 20  3  1 N    1   0   .  I  1 IF (NO <= X01) OR (NO > 126) THEN
  B 001 002 0007                                             ALARM 'ILLEGAL ERROR MESSAGE NO',
  B 001 003 0008
  B 002 001 0009 MESS  1  3 20 35  1 AN   2 L              END SUBFORMAT,


           REC  FNAME S P COMMENT
           0010 ERMES E   SUBFORM E - END OF FORMAT

  S FLD LIN REC  NAME  P LN PS LG ML TY OUT J F R D K RG PROGRAM STATEMENTS

  E 001 001 0011               0                        END,

END LIST



LIST:  IMAGE-SOURCE TEXT  (SYSB3):

    REC  FNAME S COMMENT
    0001 ERMES B IMAGE TO FORMAT: ERMES

  S REC  P LN PS TEXT

  B 0002 1  2  1 ERROR MESSAGE NO:
  B 0003 1  3  1 ERROR MESSAGE...:

END LIST


TRANS FORMAT WITH IMAGE SYSB2 SYSB3

SIZE OF IMAGE : 00082 BYTES

SIZE OF ERMES : 00178 BYTES
```

APPENDIX 7

INDEX

The references are pointing out page numbers.

Figures