TAPE DATA EXTRACTION

USER'S MANUAL

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INTRODUCTION

TAPE DATA EXTRACTION from Flagstaff Engineering is a software package designed to extract data from 1/2" magnetic tape files and transfer the data to an IBM PC file. Data is extracted and transferred field-by-field from tape files with fixed length records.

Tape formats supported are ANSI unlabeled and IBM labeled tape.

Various types of conversions may be performed on fields from the input tape file. Field conversions are specified by the operator and then stored in a control file for use by the conversion program. TDE provides the following types of data manipulation:

Character Fields-
- ASCII-to-EBCDIC conversion
- EBCDIC-to-ASCII conversion
- User specified translation

Numeric fields-
- Input fields may be converted from or to any one of eight different numeric formats.

Field Insertation-
- Literal character strings or numeric fields may be inserted into the output records.

Input record select/reject-
- Input records may be selected or rejected based on comparisons made on input record fields.

ABOUT THIS MANUAL

This manual has been designed to accommodate novice as well as expert users. The contents of this manual are labeled by sections and page nmubers located at the bottom of every page. As shown from the table of contents, these numbers indicate where you are within any given part of this manual. 1-1, for example, would indicate you are located at the first page of the first section of this manual.

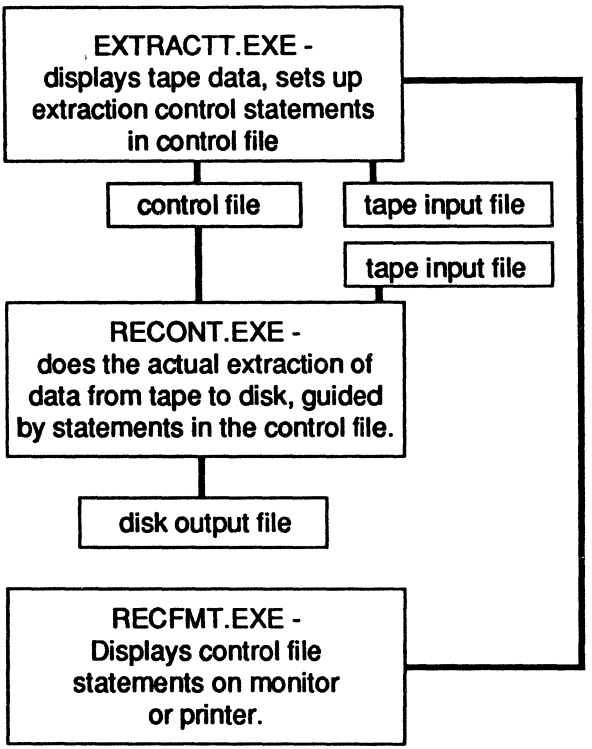
Each numbered section is also cross referenced by page numbers and names of sections in the manual. Please note the bottom of this page. This section of the manual is named "Introduction," section 1, page 1. Users may move freely through this manual by following page numbers or section name and numbers.

Illustrations of example screens, diagrams and schematics have been applied throughout this manual to assist users in better understanding operating processes and procedures.

Should a user find any particular series, set of instructions, processes or aspect of this manual unclear or confusing, please call FLAGSTAFF ENGINEERING's Customer/Technical Support at (602)779--3341 to help clarify and/or assist in successful operations. This service is provided free of charge to registered owners of this software for the duration of its use.

HOW PROGRAMS IN THIS PACKAGE WORK TOGETHER

This package contains several separate programs, plus a "batch file" called TDE.BAT which can be used to run the data extraction programs as a single jobstream. The following figure shows schematically how these various programs are related:



The batch file, TDE.BAT, runs both EXTRACTT and RECONT in sequence for one-of-a-kind conversions. If a standard conversion needs to be run repeatedly, the control statement file created by EXTRACTT can be reused, and only RECONT need be run each time.

SYSTEM REQUIREMENTS

Use of the TAPE DATA EXTRACTION programs require the following minimum system configuration:

1. IBM PC/XT/AT with a minimum of 512K bytes of RAM. All available memory is used as a work buffer during the conversion process, which results in faster conversion times on machines equipped with larger amounts of memory. A fixed disk is highly recommended. TAPE DATA EXTRACTION may be used on diskette-only machines, but normal output file sizes may exceed the capacity of standard diskettes. Multi-volume diskette output is supported, but since read/write times to diskette are much longer that to fixed disk, a substantial loss in speed will occur.

2. Flagstaff Engineering 1/2" magnetic tape controller card and cable (8820-T).

3. 1/2" 9-track Magnetic tape drive with Pertec/Cipher compatible formatter.

SYSTEM IMPLEMENTATION

Successful use of the TAPE DATA EXTRACTION UTILITY is possible only after the following steps have been performed:

1. Install Flagstaff Engineering tape controller card. Installation instructions are provided in the installation guide furnished with each tape controller card.

2. Install the tape device driver, FLAGIO.SYS, supplied with the tape controller card. Device driver installation instructions are provided in the Tape Drive System Installation Manual supplied with each tape controller card.

3. Run the tape diagnostic and test program supplied with tape controller card to verify operation of tape system.

4. Copy all files and programs from TAPE DATA EXTRACTION distribution diskette onto fixed disk. TAPE DATA EXTRACTION programs may be placed in and run from any DOS subdirectory.

PROGRAM DESCRIPTIONS

TAPE DATA EXTRACTION consists of the following programs and files:

EXTRACTT.EXE
RECONT.EXE
TDE.BAT
RECFMT.EXE
INSUTIL.EXE

EXTRACTT.EXE -
This is a full screen, menu driven editor that allows the user to specify the conversions to be specified for a tape data file. The program stores the conversion parameters in a control statement file on disk or diskette.

RECONT.EXE -
This program performs the actual file conversion and transfer. The program requires a control statement file specifying the field conversions to be performed.

TDE.BAT -
This batch file will execute the programs EXTRACTT.EXE and RECONT.EXE in sequence. This allows the operator to enter the conversion parameters for a tape file, and then automatically perform the conversion on the file without loading another program. TDE.BAT is an ASCII text file, and may be modified or created by any simple text editor.

RECFMT.EXE -
This program will display the conversion parameters contained in a control statement file created by EXTRACTT.

INSUTIL.EXE -
This program is used to set screen display colors for EXTRACTT.EXE.

EXTRACTT.EXE PROGRAM

EXTRACTT allows you to examine tape file records, define fields for data transfer, and creates a control statement file containing conversion commands. The control statement file will be used by the RECONT program at conversion time to guide the tape-to-disk transfer operation.

The name of a control statement file to be created, or an existing control statement file may be indicated when EXTRACTT is run. A maximum of 250 statements may be edited with EXTRACTT. The control statement file name should be entered after the program name to use this option. Entering the following line at the DOS system prompt would cause EXTRACTT to use a control statement file named "CONPARM.DAT":

```
C>extractt conparm.dat
```

In the above example, EXTRACTT would search for a DOS file named CONMPARM.DAT. If the file is found, the control statements in the file will be read into memory for editing or modification. If the control file does not exist, it will be created by the EXTRACTT program.

If a control file name is not given at program load time, the file name will be requested on the first screen of the program.

GENERAL FEATURES

The EXTRACTT program provides the user with a complete set of editing screens that allow the user to create a control statement file that will support most conversion requirements.

EDITING SCREENS

INITIAL - Initial program screen:
specify tape file and record type.

MAIN - Display tape file records and
select editing subscreens.

SELECT - Select or reject records by
field comparison.

MOVE - Move a field from input record
to output record.

NUMERIC - Translate numeric input field to
a numeric output field.

FILL - Fill a field with ASCII, EBCDIC,
or hexadecimal values.

LITERAL - Insert ASCII, EBCDIC, or
hexadecimal values in output records.

FINAL - Specify output file name and
record type and length.

HELP - Numeric field specifiers.

The <ESC> key may be pressed on any screen to return to the next higher level without performing any of the screen functions. If the <ESC> key is pressed on the FINAL screen, no control file will be written.

On each screen the cursor may be moved from field to field using the <TAB> key, or <SHIFT-TAB> to move in reverse. After all screen prompts have been filled in with data, the data is submitted to the program by pressing the <ENTER> key.

SCREEN DESCRIPTION - "INITIAL"

This screen is displayed immediately after program load. The screen is used to specify the tape input file to be converted, the control statement file name that will contain the conversion parameters for the tape file specified, and tape drive address and speed setting.

SCREEN ENTRIES:

INPUT FILE NAME -
Must be entered. The tape file is specified as follows:

> # - this will access a tape file by number as recognized by counting tape (file) marks from the beginning of the tape.
> name - this will access a labeled tape file by file name.

RECORD TYPE -
This must be supplied and must be either 'F' (fixed length records) or 'V' (variable length records). The only exception for this prompt is when accessing labeled tape files with fixed length records. The record type and length will be read from the tape label and automatically displayed.

RECORD LENGTH -
Must be entered and must be between 1 and 9999. The only exception is for labeled tapes with fixed length records.

TAPE SPEED HIGH/LOW -
Optional. Default is "L" (usually 25 IPS depending on the tape drive). High speed (100 IPS) may be indicated by entering an "H". High speed may not be supported on your drive.

ADDRESS -
Optional. Default tape drive address is zero (0). May be any number between 0 and 7.

COMMAND FILE NAME -
Required. May be any desired DOS file name. The file name must be fully qualified, including any needed drive letters and

LABELED TAPE NOTES:

When accessing labeled tapes with fixed length records in the input file, only the input file name need be entered. The screen will display the record type and length. At this point the values may be accepted as is, or the values obtained from the tape label may be overridden and then entered.

EXISTING CONTROL STATEMENT FILES:

When accessing an existing control file this screen will be filled in from the control file. Press <ENTER> to accept all entries as is or type over any desired fields, then press <ENTER>.

SCREEN DESCRIPTION - "MAIN"

This screen is displayed after the "INITIAL" screen has been completed.

This screen is the main editing screen for creating conversion control statements that will be written to the control statement file. The screen supports a field "edit" function that allows the operator to define specific fields for conversion.

SCREEN DIVISIONS:

The screen is divided into an upper and lower section. The upper section of the screen is the record display area. The lower section of the screen is the function and edit menu.

UPPER SCREEN:

The first data record from the tape input file will be displayed on the upper half of the screen. The Input file may be scrolled through, record by record. Both forward and reverse scrolling is possible, using <PgDn> (Page down) to scroll forward and <PgUp> (Page up) to reverse scroll through the file.

Data records may be displayed as ASCII or EBCDIC characters. The data display may be toggled between ASCII and EBCDIC by pressing the <F5> key.

Data fields in the input records must be defined for conversion. Several edit functions are provided to accomplish this.

A field is defined by a beginning and ending field position in the record. The beginning and ending field position must be "marked" to indicate a valid field.

FIELD MARKING:

To mark fields for conversion, press the <F9> key to enter edit mode. The cursor will move to the file record displayed at the top of the screen. The cursor may be moved through the data bytes of the record by using the up, down, left, and right arrow (space bar = right arrow) keys. This allows positions in the input record to be selected by pressing the <F1> key to mark the beginning and end of a field to be moved, translated or used for a select/ reject statement. The <F2> key is used to remove a mark that is under the cursor.

To remove all marks press <CTRL-F2>. To return to the bottom of the screen after a field has been marked, press the F9 key again. Use ESC to remove marks and return.

Each marked field requires a control statement for the specific conversion to be performed on that field. Note that the markers for selecting data from the input record MUST be set BEFORE going to the specific routines which create data conversion statements. The statement number of the control statement being created is displayed in the upper left corner of the bottom portion of each of the screens). After a field has been marked, select a conversion for the field by entering the number for the desired type of control statement to be created (1 - 5). The program will display the statement creation screen selected, and wait for input. After all screen entries have been completed, press the <ENTER> key to save the control statement. The program will re-display the "MAIN" screen and display the next statement number to be created.

To edit existing control statements, enter an "E" followed immediately by the statement number to display a specific statement (example: "E5" will display control statement number 5). The statement and the appropriate statement creation screen will be displayed. The next statement occurring before or after the current statement may be displayed by pressing <END> or <HOME>, or the <ESC> key may be used to return to the MAIN menu.

Once a statement has been displayed in edit mode, it may be altered by typing new entries over the existing entries and pressing <ENTER]. The statement may be deleted by pressing ALT-D. The program will then display the next control statement.

Control statements are generally created in the same sequential order as the fields being defined for conversion. New statements are automatically added to the end of the control statement file. Control statements may be inserted rather than added if desired. To insert a new control statement between existing control statements, display the record which follows the record to be inserted. Press the ESC key, then enter an option of "I" followed by the type of statement you wish to insert.

For example to insert a select/reject statement preceding statement number 12, enter "E12" (display statement 12). Press the ESC key, and then enter "I1" (insert statement type 1).

CONTROL STATEMENT FILE SEQUENCES:

In general, all select/reject control statements should be entered first. If the remaining statements are created in the same sequential order in which they are to appear in the output record, the program will keep track of the next available output record location. The program will pre-fill the beginning and ending field position specifiers for the statement creation screens being used.

After all field conversion specifications have been defined for output records, enter option "6" to exit the editing functions. The program will display the "FINAL" screen.

SCREEN DESCRIPTION - "FILL"

This screen is used to create fields in the output record that will be filled with a specific character. The fill character may be specified as ASCII, EBCDIC, or hexadecimal.

SCREEN ENTRIES:

FILL CHARACTER -
Entry is required. This is the character to fill the output field with. If it is being specified in hex then it must be two valid hexadecimal digits.

ASCII/EBCDIC/HEX -
This entry indicates the character type. The entry defaults to ASCII. If specified, the character type must be one of the following:

A ASCII character
E EBCDIC character
X hexadecimal value.

BEGINNING LOCATION -
Must be specified. This entry specifies the beginning byte position in the output record that will be filled. The program will pre-fill this entry with the next available output position.

ENDING LOCATION -
Must be specified. This entry specifies the ending byte position in the output record that will be filled.

SCREEN DESCRIPTION - "INSERT"

This screen is used to create a literal field in the output record . The character string may be specified as ASCII, EBCDIC, or hexadecimal.

SCREEN ENTRIES:

ASCII/EBCDIC/HEX -
This indicates the character type. The entry defaults to ASCII. If specified, the character type must be one of the following:

A ASCII character
E EBCDIC character
X hexadecimal value.

BEGINNING LOCATION IN OUTPUT -
This entry must be specified. The program will pre-fill this entry with the next available output position.

DATA -
One or more characters must be entered. If the string type is 'A' or 'E', the string must begin and end with a delimiter character which does not appear in the actual string. For example, the entry /HELLO/ indicates the string "HELLO" with slashes used as delimiters.

If a Hexadecimal string type is specified, the data must be entered as a series of two hex digit bytes separated by single spaces.

SCREEN DESCRIPTION - "MOVE"

This screen is for moving a field from the input record to the output record and optionally translating it. Note below that the user may optionally supply the translate table.

INPUT LOCATION START -
Entry must be specified. This will be filled in with the location of the first marker position if the markers are set before this routine is entered.

LENGTH -
Entry must be specified. This will be calculated from the positions of the first and second markers if the markers are set before this routine is entered.

ASCII/EBCDIC -
This defaults to no translation. If specified, the translation type must be one of the following:

A ASCII to EBCDIC translation
E EBCDIC to ASCII translation

OUTPUT LOCATION START -
This entry indicates the starting position in the output record where the data is to be moved to. The program will pre-fill this with the next available output record position.

NAME -
This entry may be used to assign a descriptive name or comment to the field being moved. The name entered will be displayed if the command statement is later edited. The field name will also be displayed by the program RECFMT. The name entered is stored in the control statement being created, and will not appear in the actual output file.

SCREEN DESCRIPTION - "SELECT"

This screen is used to specify parameters for selecting or rejecting records from the input file. Note that if more than one of these statements is generated. The ORDER in which they are specified is important. Once a SELECT condition is true, the record is accepted without looking at any following select/reject statements. Once a REJECT condition is true, the record is rejected without looking at any following select/reject statements. Records which are not specifically selected or rejected are processed.

Any record which is neither selected or rejected will be processed if at least one reject statement has been entered. If there are one or more select statements and no reject statements, all records not specifically selected will be rejected.

SELECT/REJECT -
An entry is required.

- S - select record.
- R - reject record.

Records will be selected or rejected when the specified screen conditions are true.

COMPARE -
Indicates type of compare operation for selection or rejection of records. Entries must be one of the following:

- EQ - equal
- NE - not equal
- GT - greater than
- LT - less than
- GE - greater than or equal
- LE - less than or equal

In these comparisons, the record data (first operand) is compared to a data constant (second operand).

FIELD -
Specifies the type of field to compare.
Valid entries are: A/E/X/Z/L/T/C/G/P/B/R.

- A - ASCII text (assumed if no entry)
- E - EBCDIC text
- X - hexadecimal data is supplied.

The remaining indicators are numeric field specifiers. See the Help Screen description, page 2-17 for the list of numeric field types supported.

COMPARE DATA -
One or more bytes must be entered in the format specified above. If the string type is 'A' or 'E' then this must be a string of characters beginning and ending with a delimiter character. The delimiter character must not appear within the string. Hexadecimal character must be entered as two hex digits per byte, with one space between each byte and the next. If a numeric compare is specified, enter the value to be compared to using a leading minus (-) if required.

BEGINNING POSITION IN INPUT RECORD -
Must be specified. The program will fill this in from the position of the first marker if it was set prior to entering this routine.

NUMERIC FIELD LENGTH -
Entry must be specified for numeric compares. This will be filled in from the field markers if the markers are set before this routine is entered.

NUMERIC FIELD TRANSLATION -
This entry specifies a text translation of the input numeric field before it is evaluated. This is not normally necessary, but is NEVER VALID for packed decimal or binary fields. If entry is specified, the indicator must be either:

A for ASCII to EBCDIC translation.
E for EBCDIC to ASCII translation.

SCREEN DESCRIPTION - "NUMERIC"

This screen is for specifying conversion of a numeric field from input to output. To see a list of the types of numeric fields supported, press F10 to toggle between the numeric field help screen and displaying the data record.

INPUT TYPE OF FIELD -
Must be one of the eight (8) valid numeric field types. See field type description.

INPUT BEGINNING POSITION -
This is pre-filled with the position of the first marker if the marker was set before entering this screen.

INPUT FIELD LENGTH -
This entry is pre-filled by the program, based on the position of the first and second markers if they were set before entering this screen.

INPUT TRANSLATION -
This entry is optional and not normally required. If specified it causes a CHARACTER translation to be performed on the input field before numeric evaluation. If the input is specified as packed decimal or binary, no translation is valid. Valid indicators are:

E translate from EBCDIC to ASCII
A translate from ASCII TO EBCDIC.

OUTPUT TYPE OF FIELD -
Must be one of the eight (8) valid numeric field types. See field type description.

OUTPUT BEGINNING POSITION -
This is pre-filled by the program with the next available output record position.

OUTPUT FIELD LENGTH -
The length specified must be sufficient to contain the converted values and varies depending on the type of field specified. If <ENTER> is pressed without entering this field, the program will calculate the required field length based on the type and length

of the input field and the type of output field specified. The calculated value will be displayed and may be accepted by pressing <ENTER> again, or the value may be changed before pressing <ENTER>.

OUTPUT TRANSLATION -
This is optional and not normally needed. If specified, a CHARACTER translation will be performed on the output field after it has been generated by the numeric conversion. Translation is never valid for packed decimal or binary output fields. Valid indicators are:

E translate from EBCDIC to ASCII
A translate from ASCII TO EBCDIC.

Once a numeric field conversion statement has been generated, the program will return to this screen. The entries on the screen will be pre-filled to convert the next sequential bytes of the input record in the same length and type as the previous command statement. This is done because numeric fields often occur in several sets in a record. To accept the pre-filled entries, press <ENTER] to generate the next statement. The entries may be modified on the screen to generate a command statement with new parameters, or the <ESC> key may be pressed to return to the main menu.

NAME -
This entry may be used to assign a descriptive name or comment to the field being converted. The name entered will be displayed if the command statement is later edited. The field name will also be displayed by the program RECFMT. The name entered is stored in the control statement being created, and will not appear in the actual output file.

SCREEN DESCRIPTION - "FINAL"

This screen is entered when option six (6) is chosen from the main screen.

OUTPUT DATA FILE -
Specifies the output DOS file to be generated by the conversion.

RECORD TYPE -
This entry is required and must be one of the following:

F for fixed length records.
V for variable length records.

If 'V' is specified, the program adds a carriage return and line feed (hexadecimal 0D 0A) to the end of each output record.

RECORD LENGTH -
This entry is required. The program pre-fills this field with the highest output record location previously specified by any of the conversion statements generated.

SKIP -
This entry is optional. Enter the number of records to skip before starting to process the file.

PROCESS -
This entry is optional. Enter the maximum number of records to process from the input file.

SPEED -
This entry is optional. Specify 'L' or 'H' to force the tape drive to low or high speed.

ADDRESS -
This entry is optional. For tape input files only. Specify a tape unit address from 0 to 7. If not entered it defaults to address 0.

ASCII TO EBCDIC TABLE - This entry is optional. If entered, the conversion program reads the first 256 bytes of the file (table) indicated, and uses the data for any requested ASCII to EBCDIC conversions.

EBCDIC TO ASCII TABLE -
This entry is optional. If entered, the conversion program reads the first 256 bytes of the file (table) indicated, and uses the data for any requested EBCDIC to ASCII conversions.

SAMPLE -
This entry is optional. If entered, this entry indicates a record sample rate. For example, if a five is entered, every fifth record will be processed rather than all records from the input file.

SCREEN DESCRIPTION - "HELP"
(Numeric Field Types)

The help screen explains the numeric field indicators used by the program. A short field description appears on the screen for each indicator.

The following types of numeric fields are supported. The letter code to the left must be used in screen entries to indicate a particular field type. When specified as input, these formats are expected by the program. When specified as output, these formats will be generated by the program.

Z

Zoned decimal. EBCDIC characters with a possible zone over the low order digit to specify the sign. A hex 'D' zone specifies a negative number. The normal positive zone is hex 'C' or hex 'F'. The maximum length is fifteen (15) digits.

L

ASCII numeric characters with a possible leading + or - sign. The sign character may be preceeded by blanks in the input field and the lack of a (-) sign is taken to mean a positive number. On output the first position of the field will be either (+) or (-) and the digit positions will be left zero filled. The maximum total length is sixteen (16) bytes.

T

ASCII numeric characters with a possible trailing + or - sign. The lack of a (-) sign is taken to mean a positive number. On output the last position of the field will either be (+) or (-) and the digit positions will be left zero filled. The maximum total length is sixteen (16) bytes.

C

ASCII numeric characters with a possible trailing 'CR' in the last two positions for negative numbers. The lack of a trailing 'CR' is taken to mean a positive number. On output the last two positions will be either blank or 'CR'. The maximum total length is seventeen (17) bytes.

G

ASCII numeric characters with a possible trailing 'DB' in the last two positions for negative numbers. The lack of a trailing 'DB' is taken to mean a positive number. On output the last two positions will be either blank or 'DB'. The maximum total length is seventeen (17) bytes.

P

Packed decimal. One decimal digit per nibble with a sign in the lowest order nibble. The negative sign is a hex 'D' and the positive sign is normally a hex 'C' or 'F'. The maximum length is 8 bytes which is fifteen (15) decimal digits.

B

Binary with the most significant byte first and least significant byte last. The maximum length is eight (8) bytes.

R

Binary with the least significant byte first and the most significant byte last. This is the most common format for binary fields in microcomputers. The maximum length is eight (8) bytes.

RECONT.EXE PROGRAM

Once a control file has been generated by EXTRACTT, the control file may be submitted directly to RECONT by entering the control file name after "RECONT" on the DOS command line.

The input and output file specifications in the control statement file may be overridden while still using the remainder of the statements in the control file. To do this, just enter input and output file names on the command line after the control file name. For example:

```
C>recont sample.ctl c:\newinput.dat a:newout.da   t
```

will execute the program, RECONT, using the control statements in the file "SAMPLE.CTL". However, regardless of the files named as input and output files, the input data will be taken from C:\NEWINPUT.DAT and the output created will be A:NEWOUT.DAT.

ERROR STATEMENTS:

If an error is detected in an input control statement, then the following message is displayed and the program is terminated.

nn ERROR ON CONTROL STATEMENT. SEE DOCUMENTATION. PROGRAM ABORTED.

ERROR MESSAGES LISTED BY NUMBER

01 - The second position of a translation table statement is not 'A' or 'E'.

02 - The first statement is not a file definition statement.

03 - INSERT. No trailing delimiter was found within 60 characters.

04 - Unused.

05 - The input file type is not 'F' or 'V'.

06 - The output file type is not 'F' or 'V'.

07 - The input file record length is invalid.

08 - The output file record length is invalid.

INPUT FIELD ERRORS:

09 - An input field translation has not been specified with a blank, 'A', or 'E'.

10 - The input field type was not recognized.

11 - The input field length was too long.

12 - The the input field length was zero.

13 - The input field extends beyond the end of the record.

OUTPUT FIELD ERRORS:

14 - The output field translation is not blank, 'A', or 'E'.

15 - The output field type was not recognized.

16 - The output field length was too long.

17 - The output field length was zero.

18 - The output field extends beyond the end of the record.

FIELD CONVERSION ERRORS:

19 - FILL field translation is not blank or 'A'.

20 - FILL field extends beyond the end of the record.

21 - INSERT field translation indicator is not blank or 'A'.

21 - INSERT field translation indicator is not blank or 'A'.

22 - INSERT field character string extends beyond the end of the record.

23 - MOVE field translation indicator is not blank, 'A', or 'E'.

24 - MOVE input field extends beyond the end of the record.

25 - MOVE output field extends beyond the end of the record.

26 - FILL hexadecimal field translation indicator is not a blank.

27 - FILL hexadecimal field extends beyond the end of the record.

28 - SELECT/REJECT compare type is not EQ/NE/GT/LT/GE/ LE

29 - SELECT/REJECT string does not (completely) fall within the specified input record.

30 - SELECT/REJECT field length is invalid.

31 - SELECT/REJECT string type is not E, X, blank or numeric.

32 - SELECT/REJECT string contains invalid characters.

33 - 36 Unused.

37 - FINAL skip or process count is invalid.

38 - SELECT/REJECT numeric pre-translation is not A/E/blank.

TDE.BAT

The batch file, TDE.BAT, executes both the EXTRACTT and RECONT programs so that a control file may be built and executed in one step. When using this batch program, the name of the control file to be used MUST be entered immediately after the program name:

C> TDE SAMPLE.CTL

Once a control file has been built for converting a particular record format, it need not be created again. It may be submitted directly to RECONT to convert another file with the same record format. (See RECONT program operation section.)

RECFMT.EXE PROGRAM

This program displays the conversion parameters contained in control statement files created by the EXTRACTT.EXE program. This display provides a complete field description of the records output by EXTRACTT. The display may be used to verify correct processing of an input file, or used to obtain an output record layout. The output record layout is usually required by an operator who must process the output file.

The name of the control file to be displayed must be entered on the DOS command line following the program name when RECFMT is loaded.

An output device must also be indicated on the DOS command line when RECFMT is loaded. If a device is not specified, output defaults to LPT1 (the printer). To direct output to the display screen, specify CON as the device parameter.

DOS DEVICE NAMES FOR USE WITH RECFMT:

CON	- "console" (display monitor)
PRN	- printer (default address)
LPTn	- printer "n" (1st printer is the same as PRN).

(Contrary to what IBM says in their manuals,) it is not necessary (and incorrect in this case) to use a colon after the device name (for example, PRN:).

Run RECFMT by typing its name at the DOS command prompt, followed by the command file name and output device parameters:

```
C>recfmt control.dat con
```

The above command would display the statements in control file, CONTROL.DAT, to the display screen. RECFMT will output a line-by-line description of the control file command statements. Each statement from the file will be displayed in the following format:

Statement number.
Input field beginning position
Input field ending position
Output field beginning position
Output field ending position
Operation performed (MOVE, FILL, etc.)
Field name assigned by EXTRACTT or user.

INSUTIL.EXE

COLOR AND PARAMETERS INSTALLATION PROGRAM

This program allows the user to change screen colors and paramters used by the Flagstaff Engineering TAPEUTL or EXTRACTD programs. In response to the request for "NAME OF PROGRAM', enter the full program name, for example, 'TAPEUTL.EXE'. Colors are specified for three (3) types of display attributes:

NORMAL	used for displaying most prompts, text, etc.
ENHANCED	used for operator entry fields and error messages
REVERSED	used to highlight selected data (EXTRACT only)

When a new color is requested, pressing the return leaves it unchanged. The following color values should be used to indicate the desired display colors:

FLAGSTAFF ENGINEERING - INSTALL PROGRAM OPTIONS

Program name: TAPEUTL.EXE

Screen display colors

0= Black	8= Dark Grey
1= Blue	9= Light Blue
2= Green	A= Light Green
3= Cyan	B= Light Cyan
4= Red	C= Light Red
5= Magneta	D= Light Magneta
6= Brown	E= Yellow
7= Light Grey	F= Bright White

Normal	Background 1	Foreground 7
Enhanced	Background 1	Foreground F
Reversed	Background 7	Foreground 1

Foreground

	0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
0	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
1	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
2	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
3	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
4	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
5	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
6	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
7	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
8	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
9	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
A	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
B	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
C	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
D	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
E	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
F	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x

Press <ESC> to exit without update

Color Select Screen

After colors and paramters have been chosen, the same screen will display lines using the colors selected in this manner:

This is a normal line (x, the color you selected)
This is a bright line (x , the color you selected)
This is a reverse line (x , the color you selected)

You can also set default parameters of your chosing with Tape Utility. The options chosen from this screen will be the default values that the program will use to pre-fill these fields whenever TAPEUTL is run.

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FLAGSTAFF ENGINEERING - INSTALL PROGRAM OPTIONS

Program name: TAPEUTL.EXE

System paramters ----------------------------------------------------

Read buffer length  16384   Tape retries  15    Tape address  0

Tape to disk defaults -----------------------------------------------

Translate data? (N=no, A=EBCDIC to ASCII, E= ASCII to EBCDIC )  N
Data type: (F)ixed, (V)ariable, (I)BM variable, (S)tring   S
Record length  0     Strip pad characters  (Y/N)  N   Insert line end  (Y/N)  N
Pad character        Line end characters 0D  0A

Disk to tape defaults -----------------------------------------------

Translate data? (N=no, A=EBCDIC to ASCII, E= ASCII to EBCDIC )  N
Data type: (F)ixed, (V)ariable, (I)BM variable, (S)tring   S
Block size  4096     Record size  128   Records per block  32
Pad character        Line end characters 0D  0A

Press <ESC> to exit without update
```

Parameters Installation Screen

At the end, this screen displays verified updates were made thusly:

```
Color defaults updated
Taputl defaults updated
C>
```