ND SOFTWARE LIBRARY DISKETTE

Containing : Mass Storage Utilities

Directory Name : 211067A02-XX-01S

User Name : FLOPPY-USER

Nr	File name	Type	T	File access: Public	Friend	Own	Pages	Bytes
0	TPE-MON-100-A01	BPUN	I	R	R	R	29	56182
1	DISC-TEMA-I11	TEST	I	R	R	R	36	71680

2 files using 65 pages. 148 pages reserved out of 148 pages.

ND SOFTWARE LIBRARY DISKETTE

Containing : Mass Storage Utilities

Directory Name : 211067A02-XX-01D

User Name : FLOPPY-USER

Nr	File name	Type	T	File access: Public	Friend	Own	Pages	Bytes
0	TPE-MON-100-A01	BPUN	I	R	R	R	29	56182
1	DISC-TEMA-I11	TEST	I	R	R	R	36	71680

2 files using 65 pages. 610 pages reserved out of 610 pages.

Mass Storage Utilities
211067A
Report no: 1

Date: 861111

Program: DISC-TEMA-I00
Subject: Corrected errors, new program revision: I10
new product revision: A01

- -

Description:

The FORMAT command in DISC-TEMA-I00 does not work properly on CDC - EMD-9720 disks. The actual disk names, as used in DISC-TEMA, are as follows:

DISC-288MB-x-E (x = 1,2,3 or 4)
DISC-4-70MB-x-E

Symptom:

Reallocated tracks are placed on cylinder 1208d instead of cylinder 1207d.

Summary:

For formatting of CDC - EMD-9720 disks, please use:

Product name: 211067A01 MASS STORAGE UTILITIES
Program name: 203134I10 DISC-TEMA-I10

(or later revisions)

Mass Storage Utilities
211067A
Date: 861111 Report no: 2

Program: DISC-TEMA-I10
Subject: Corrected errors, new program revision: I11
new product revision: A02

- -

Description:

Some commands in DISC-TEMA-I10 does not work properly on NEC-D2352A disks. The actual disk names, as used in DISC-TEMA, are as follows:

DISC-6-70MB-x-N (x = 1,2,3 or 4)
DISC-2-225MB-x-N
DISC-450MB-x-N

Symptom:

The command DUMP-DISC-CONTENTS gives wrong information. The commands SET-DISC-CONTENTS and CHANGE does not work properly.

Summary:

For NEC-D2352A disks, please use:

Product name: 211067A02 MASS STORAGE UTILITIES
Program name: 203134I11 DISC-TEMA-I11

(or later revisions)

Product	Name Mass Storage Utilities	Reg. no. 211067A	Category STPR
Reason	* New product	Error Correction	
Documen-tation	Title Test Program Description TPE User Guide	Reg. no. 30.005.2 EN Enclosed	
Purpose	Mass storage utility program for handling of media offline.		
Prerequi-sites	Computer Type Floating format ND-100/110 All All	Op. system Version Stand-alone program	
		Reg. no. for Source 250185A	

File no.	File Name	Type	T	Containing
208259A	TPE-MON-100-A<rev>	BPUN	I	Test program monitor-100
203134I	DISC-TEMA-I<rev>	TEST	I	Disc utility program

NOTE: <rev> is to be replaced by the current revision of the DIRECTORY or FILE. Revision is found on the "ND SOFTWARE LIBRARY DISKETTE" pages.

1 CORRECTED ERRORS in DISC-TEMA-I<rev> from version H00

The command FORMAT would give an error message at sector address 200000 (cylinder 1616, surface 1) for discs connected to the ST506 interface.

The command PROGRAM-STATUS did not give correct information about retries and ECC errors occuring during read/write operations on ST506 type interface/drive/media.

The error message "Pid bit 11 not set", may appear when using some commands in DISC-TEMA-H00. This is because of an error in the test program, and is not likely to be faulty hardware.

The error message "over-run" could appear on computers with MPM5 and 15Mhz disc controller due to disabled cache.

2 MODIFICATIONS in DISC-TEMA-I<rev> from version H00

2.1 NEW DISCS

New device names added in DISC-TEMA-I<rev> :

```
DISC-288-x-E       : EMD-9720
DISC-4-70MB-x-E    : EMD-9720
DISC-6-70MB-x-N    : NEC-D2352A
DISC-2-225MB-x-N   : NEC-D2352A
DISC-450MB-x-N     : NEC-D2352A  (x = 1 , 2 , 3  or 4)
```

2.2 Disc controller 2

The disc controller 2 can now be used in all available commands, even when it does not reach all (local) memory.

2.3 New commands

RANDOM-TEST	Command for stressing disc drive/media.
REFRESH	Command for reformatting one track. Reallocated tracks may not yet be refreshed.

2.4 The command FORMAT

Testing of the ST506 type drives (Micropolis) is done more thoroughly. The read operation while testing is done with early and late read strobe.

3 LOADING PROCEDURE

The computer must be in STOP. Press MACL (or write MACL from OPCOM) and type 1560& on the console.

If autoload is enabled, TPE-MONITOR will start up and load DISC-TEMA automatically.

Manual loading :

1) In FLOPPY-MON :

```
FLOPPY-MON-H

*LOAD TPE-MON-100-A
```

2) When TPE-MONITOR is started use the command LOAD-PROGRAM :

```
TPE>LOAD-PROGRAM DISC-TEMA-I
```

DISC-TEMA is now loaded and ready for use.

TPE-USER GUIDE

TPE Monitor, ND-100 / ND-110

Valid for TPE version: A01
Document updated: 86-09-25

The DOCUS Department

TABLE OF CONTENTS

1 PREFACE

Test Program Environment (T.P.E.) is a concept for standardizing the several software tools used for diagnostics and debugging purposes, irrespective of the hardware and software environment in use.

The TPE monitor is used to run test programs, either stand-alone or on-line when using the operating system. It interfaces the users in a general defined way which is the same for all situations and activated hardware machine types. It controls programs written in PLANC and assembler languages. Other languages may also be used. Functions to interface directly with TELEFIX are included.

2 GENERAL

This description concerns the 'A01' version of the ND-100 TPE MONITOR, which is intended to replace the TEST PROGRAM MONITOR.

The TPE MONITOR makes the different test programs behave in a uniform way. It is based on a command structure, i.e. the user can specify the desired action by writing a "command" to the program.

The command handling is done by the monitor, and when it is ready to accept a new command it types the sign 'TPE>'.

In order to return to the monitor, the commands may be terminated in different ways, but it is always possible to use ESCAPE.

The monitor has its own set of commands. The test program running under control of the monitor has another set of commands specific for this test program.

The TPE MONITOR uses two devices:

1) The CONSOLE terminal, a device which interfaces the user in an interactive way.

2) The PRINTER device, a terminal or a line printer where the test program prints its outputs.

At the original start-up, the PRINTER device is set equal to the CONSOLE terminal.

The TPE MONITOR also includes functions for communicating directly with the TELEFIX system.

3 DIFFERENT EXECUTION MODES

The ND-100/ ND-110 TPE MONITOR runs on any type of ND-100/ ND-110 computer system, but not on other systems. It may be used in two modes:

a) NORMAL MODE. This is a monitor program without any test program loaded, but has a LOAD command allowing any test program file to be placed into the memory area following the monitor itself, and to access and execute the commands from this loaded program.

b) PROGRAM INCLUDED MODE.The monitor and the test program are enclosed in a single BPUN file loadable from the FLOPPY MONITOR (stand-alone), or loadable with @LOAD-BINARY (SINTRAN), or executable as an RT program (SINTRAN).

For each of these two modes, the TPE monitor can run in four environments:

1) Stand-alone.
2) Under SINTRAN, as an interactive job.
3) Under SINTRAN, as a MODE or BATCH job.
4) Under SINTRAN, as a RT program.

OBS When running stand-alone, the Real Time Clock is active and gives interrupts used for several internal functions. If the RTC does not work correctly, the TPE MONITOR cannot run.

3.1 NORMAL MODE

At the start-up, the monitor is alone in user memory. It is able to load a test program from a diskette (stand-alone) or from the SINTRAN file system. The test program file includes only the test program, and not a copy of the monitor as for the other mode. The test program file type is :TEST.

3.1.1 Commands available when running stand-alone

```
MODE <input file name> (<output>)
DATCL
DEFINE-MACRO <macro name> <macro body>
DELETE-MACROS
DUMP-PRINTER-BUFFER (<from> <to>)
EXIT
EXPLAIN-COMMAND <command>
HELP <command>
LIST-FILES <file name>
LIST-MACROS <macro name>
LOAD-PROGRAM <file name>
```

```
MONITOR-HELP <command>
OPCOM
PRINT-NOTE <note number>
PROGRAM-HELP <command>
PROGRAM-STATUS
SET-CONSOLE-DEVICE-NUMBER <logical or hardware number>
SET-PRINTER-DEVICE-NUMBER <logical or hardware number>
SET-PRINTER-MODE <mode> (<buffer size>)
SET-TERMINAL-TYPE <type>
TERMINAL-MODE <full page stop>
UPDAT <minute> <hour> <day> <month> <year>
```

3.1.2 Commands available when running under SINTRAN but not RT

```
MODE <input file name> (<output>)
DATCL
DEFINE-MACRO <macro name> <macro body>
DELETE-MACROS
EXIT
EXPLAIN-COMMAND <command>
HELP <command>
LIST-FILES <file name>
LIST-MACROS <macro name>
LOAD-PROGRAM <file name>
MONITOR-HELP <command>
PRINT-NOTE <note number>
PROGRAM-HELP <command>
PROGRAM-STATUS
SET-PRINTER-FILE <file name>
SET-PRINTER-MODE <mode> (<buffer size>)
SET-TERMINAL-TYPE <type>
TERMINAL-MODE <full page stop>
```

3.1.3 Commands available when running under SINTRAN as a RT program

```
MODE <input file name> (<output>)
DATCL
DEFINE-MACRO <macro name> <macro body>
DELETE-MACROS
EXIT
EXPLAIN-COMMAND <command>
HELP <command>
LIST-FILES <file name>
LIST-MACROS <macro name>
LOAD-PROGRAM <file name>
MONITOR-HELP <command>
PRINT-NOTE <note number>
PROGRAM-HELP <command>
PROGRAM-STATUS
SET-CONSOLE-DEVICE-NUMBER <logical or hardware number>
SET-PRINTER-FILE <file name>
SET-PRINTER-MODE <mode> (<buffer size>)
```

```
SET-TERMINAL-TYPE <type>
TERMINAL-MODE <full page stop>
```

3.2 PROGRAM INCLUDED MODE

The TPE MONITOR and the test program are one single BPUN format file. This is the same as when the TEST PROGRAM MONITOR runs a test program.

3.2.1 Commands available when running stand-alone

```
MODE <input file name> (<output>)
DATCL
DEFINE-MACRO <macro name> <macro body>
DELETE-MACROS
DUMP-PRINTER-BUFFER (<from> <to>)
EXIT
EXPLAIN-COMMAND <command>
HELP <command>
LIST-MACROS <macro name>
MONITOR-HELP <command>
OPCOM
PRINT-NOTE <note number>
PROGRAM-HELP <command>
PROGRAM-STATUS
SET-CONSOLE-DEVICE-NUMBER <logical or hardware number>
SET-PRINTER-DEVICE-NUMBER <logical or hardware number>
SET-PRINTER-MODE <mode> (<buffer size>)
SET-TERMINAL-TYPE <type>
TERMINAL-MODE <full page stop>
UPDAT <minute> <hour> <day> <month> <year>
```

3.2.2 Commands available when running under SINTRAN but not RT

```
MODE <input file name> (<output>)
DATCL
DEFINE-MACRO <macro name> <macro body>
DELETE-MACROS
EXIT
EXPLAIN-COMMAND <command>
HELP <command>
LIST-MACROS <macro name>
MONITOR-HELP <command>
PRINT-NOTE <note number>
PROGRAM-HELP <command>
PROGRAM-STATUS
SET-PRINTER-FILE <file name>
SET-TERMINAL-TYPE <type>
TERMINAL-MODE <full page stop>
```

3.2.3 Commands available when running under SINTRAN as a RT program

```
MODE <input file name> (<output>)
DATCL
DEFINE-MACRO <macro name> <macro body>
DELETE-MACROS
EXIT
EXPLAIN-COMMAND <command>
HELP <command>
LIST-MACROS <macro name>
MONITOR-HELP <command>
PRINT-NOTE <note number>
PROGRAM-HELP <command>
PROGRAM-STATUS
SET-CONSOLE-DEVICE-NUMBER <logical or hardware number>
SET-PRINTER-FILE <file name>
SET-TERMINAL-TYPE <type>
TERMINAL-MODE <full page stop>
```

4 THE COMMAND PROCESSOR

The command processor interfaces the user to the monitor and the test program through a terminal device called the CONSOLE terminal. The original CONSOLE terminal is:

1) The system console, logical unit 1, when running stand-alone or as a SINTRAN RT program.

2) The terminal from where the program is recovered, when running as a SINTRAN background program.

3) The command input file when running as a SINTRAN MODE or BATCH job.

When running stand-alone, an alternative CONSOLE may be selected in the T register on level 15, in the same way as for the FLOPPY MONITOR.

4.1 Operator inputs

The method is the same in all modes. It is possible to type characters ahead, 60 characters maximum.

The command processor is terminal type oriented. This means that it handles different editing keys and display modes depending on the CONSOLE terminal type, paper terminal or VDU. The original terminal type is 2 (paper terminal) when running stand-alone, or the SINTRAN defined type.

An input may always be cancelled by ESCAPE.

4.2 Editing keys

CR is always used to terminate the input. Before CR is given, ESCAPE may be used to cancel the input.

When using a paper terminal (as for SINTRAN commands):

```
DEL or CTRL+A    : Delete one character.
CTRL+W           : Delete one word.
CTRL+K           : Delete the whole line.
CTRL+V           : Enter one control code, if allowed.
```

When using a VDU terminal (like in NOTIS):

```
DEL or CTRL+A    : Delete one character.
CTRL+K           : Delete the whole line.
CTRL+D           : Delete up to and including character.
```

Char=CTRL+D : Delete the whole line.
Char=CR : Delete the rest of the line.
Char=CTRL+R : Delete from the beginning of the line.

Cursor LEFT : Move to previous character.
Cursor RIGTH : Move to next character.
CTRL+F CTRL+F : Move forward beyond last character.
CTRL+R CTRL+R : Move to beginning of the line.
CTRL+E : Set/reset expand mode.
CTRL+V : Enter one control code, if allowed.

4.3 Immediate action input

When giving an input, or at any time during a command execution, some keys at the CONSOLE terminal have an immediate effect:

In all modes:

ESCAPE: Breaks the command execution and returns to the command processor.

Stand-alone only:

CTRL+O: Activates OPCOM.

In addition, when running stand-alone, XON/XOFF sequences are handled.

4.4 Syntax of commands and parameters

The command processor is ready to accept a command when the prompt sign 'TPE>' is displayed at the CONSOLE terminal. A command consists of the command name and, depending on the command type, one or several parameters.

The parameters may be given on the same line together with the command name, and are separated by one or more spaces, or a comma. If they are missing, they are prompted for automatically. Names may be abbreviated between hyphens.

The command name and parameter name input follow some common rules:

1) A default value may be available. If CR is given immediately in response to the prompt, the default value is displayed and ready to be edited. At this time, a second CR validates this default value, but any other character, especially the editing keys, may be used to modify the default value.

   If no default value is available, the terminal bell is activated on the CR to indicate an input must be provided. It is not possible to neglect the input except by using ESCAPE.

2) A help text may be available. If '?' is typed, the text is displayed and the input is restarted at the point it was interrupted by the help request. If no help text is available, the '?' character is normally entered.

3) After a command has been executed, it is usual that the default value for the next command input is the previous command together with its parameters. In such case, when at the command processor level, this default value is displayed by giving CTRL+H, and CTRL+D may be used to repeat the line (equivalent to CTRL+H and CR).

4.5 Parameter input

A parameter may be of several different types:

- ASCII characters string
- Numeric
- Boolean

The ASCII characters string input type is used for command names as well for parameters. In special cases, it may include control codes which are part of the string.

The boolean input has only two possibilities, either a true or a false answer.

The numeric input may be done in different ways:

Associated with the prompt, usually the default radix and the legal range for this numeric input is printed. If a legal range is specified, the prompt is repeated as long as the input does not fit. It is also repeated as long as illegal characters are typed.

The default radix may always be overruled by adding a standard trailing character:

- B to force an octal input.
- D to force a decimal input.
- X to force a binary input.
- H to force an hexadecimal input.

Any numeric input may be prefixed with a plus or minus sign.

5 START and RESTART

When running stand-alone, several actions are taken when the monitor is loaded from the diskette:

The TPE MONITOR is the only BPUN type file on the diskette. Giving the OPCOM command, 1560& loads the FLOPPY MONITOR which must also be present on the diskette. The FLOPPY MONITOR then automatically loads the TPE MONITOR as this is the only BPUN file on the diskette, assuming the X register on level 15 is different from 177777B and then jumps to its start address.

The START address is 0

1) If the ND-100 display panel is present and working, the hardware calendar is read and the software clock is updated.

2) If the T register on level 15 contains an IOX number for a valid and existing terminal interface, the message "IF HERE TYPE ANY CHARACTER" is sent both to this device and to the system console terminal. The first of these two terminals where a key is activated is selected as the CONSOLE terminal and the PRINTER device.

   Remember that the FLOPPY MONITOR used to load the TPE MONITOR also does this when starting.

3) If the X register on level 15 is different from 1, the autoload function is activated. If there is only one TEST type file on the diskette, it is automatically loaded through the LOAD-PROGRAM command.

   Remember that the FLOPPY MONITOR also executes the autoload function to load the TPE MONITOR, but this will only occur if the X register on level 15 is different from 177777B. So, a complete autoload for a single TEST file is done if the X register on level 15 is different from 177777B and 1.

When running under SINTRAN, the autoload function is also available. The test program file name must be given on the same line together with the TPE-MONITOR program name (@TPE-MON-100-A01 XXXXX).

To start under SINTRAN as an RT program, the command:

@RT TPEMON

may be given. In such a case the program starts on the system console, device number 1. To start on another terminal, the background program TPE-RT-MON must be activated from user SYSTEM or preferably from user RT on that terminal:

@TPE-RT-MON

Be aware that user RT must have at least two pages, with one of them

free. If user SYSTEM is entered, it must have directory and write access to user RT.

The RESTART address is 20

The previously loaded program, if any, is still available. The clock is updated again from the display panel. The alternative console may be re-selected.

6 MONITOR COMMANDS

6.1 HELP

Format: HELP <command>

Lists the monitor commands, the test program commands and the defined macro commands, at the CONSOLE terminal. These three different groups are separated with headings. Depending on how the TPE is running, the commands which may be executed (legal) are prefixed with an arrow '>'.

Parameters:

<command> : Matching name for the commands to be listed.
DEFAULT: All existing command names.

6.2 PROGRAM-HELP

Format: PROGRAM-HELP <command>

Same as the HELP command, but only the test program commands are listed.

6.3 MONITOR-HELP

Format: MONITOR-HELP <command>

Same as the HELP command, but only the monitor commands are listed.

6.4 EXPLAIN-COMMAND

Format: EXPLAIN-COMMAND <command>

An explanatory text corresponding to the command <command> is printed at the CONSOLE terminal.

Parameters:

<command> : The name of the command to be explained.
DEFAULT: The test program purpose, if loaded.

6.5 DEFINE-MACRO

Format: MACRO <macro name> <macro body>

This command allows the constructing of new commands (macro commands), made of existing commands and already defined macros.

Parameters:

<macro name> : Is any name which is not already used for a command or another defined macro.
DEFAULT: No default value.

<macro body> : Is the list of commands or macros, separated by a semicolon (;).
DEFAULT: No default value.

The new macro may be activated by giving its name when the command processor prompts for a new command. If the commands in the macro body have missing parameters, they are automatically prompted for by the command processor so they can be manually entered.

The new macro appears in the list from the HELP and LIST-MACROS commands.

The macros are stored in a limited size buffer, and an error message may appear if the buffer is full and an attempt is made to construct a new macro. In such a case the command DELETE-MACROS may be used to empty this buffer.

6.6 DELETE-MACROS

Format: DELETE-MACROS

All macros built by the DEFINE-MACRO command are deleted. It then becomes possible to redefine new ones.

6.7 LIST-FILES

Format: LIST-FILES <file name>

Lists the available files at the CONSOLE terminal.

Parameters:

<file name> : Matching name for the listed files. The files are located on the diskette inserted in the floppy disc controller 1, unit 0, when running stand-alone. Under SINTRAN, any directory/user name may be specified.
DEFAULT: All files from the diskette or under the logged-in user.

6.8 LOAD-PROGRAM

Format: LOAD-PROGRAM <file name>

Format: <file name>

Places one test program, taken from the diskette or a SINTRAN file, into memory so it can be run. The file type for the test program is TEST.

Parameters:

<file name> : Matching name for the test program to be loaded. When running stand-alone, the programs are located on the diskette inserted in the floppy disc controller 1, unit 0. Under SINTRAN, any directory/user name may be specified. DEFAULT: No default value.

The command name LOAD-PROGRAM may be omited if <file name> is not ambiguous with any command name and no program is already loaded.

6.9 SET-CONSOLE-DEVICE-NUMBER

Format: SET-CONSOLE-DEVICE-NUMBER <logical or hardware number>

Selects the device used as the CONSOLE terminal.

Parameters:

<log/hw number> :
Octal value which may be specified either as a logical unit number (software number) or as an IOX number (hardware number), corresponding to any existing terminal. DEFAULT: All existing terminals. A message is sent to all terminals, and the first one where any key is activated is selected as the console.

6.10 SET-PRINTER-DEVICE-NUMBER or SET-PRINTER-FILE

Format: SET-PRINTER-DEVICE-NUMBER <logical or hardware number>

Format: SET-PRINTER-FILE <file name>

Selects the device or the SINTRAN file used as the PRINTER device.

Parameters:

<log/hw number> :
Only in stand-alone mode. Octal value which may be specified either as a logical unit number (software number) or as an IOX number (hardware number) corresponding to any existing terminal or line printer.
DEFAULT: No default value.

<file name> : Only under SINTRAN. File name with SYMB as default file type.
DEFAULT: LINE-PRINTER.

6.11 SET-PRINTER-MODE

Format: SET-PRINTER-MODE <mode> (<buffer size>)

Parameters:

<mode> :

NORMAL : This is the default mode. Output to printer device will be routed to the device selected as printer device.

DUPLICATED: The output to PRINTER device will ALSO go to the CONSOLE device.

BUFFERED : Only available in stand-alone. The printer device becomes an internal memory buffer. The specified number of pages (1 to 64), or 16 pages (32 Kbytes) if the <buffer size> parameter is omited, are allocated.

Some words concerning the BUFFERED mode:

- When the buffered printer mode is deselected, the printer device goes back to normal.
- In case of a system crash, it is possible to look at the physical memory to fetch the program outputs. If running via TELEFIX, the CONVERT-OCTAL-TO-ASCII-MANUAL-MODE command is particulary suitable. Two 32 bits integers (INTEGER4) may be inspected to get the lower and upper limit of the buffer area:

  Physical address 10-11 = Lower physical address of buffer.
  Physical address 12-13 = Upper physical address of buffer.

6.12 DUMP-PRINTER-BUFFER

Format: DUMP-PRINTER-BUFFER (<from> <to>)

The printer buffer defined to replace the PRINTER device by the command SET-PRINTER-MODE,BUFFERED is printed to the previously defined PRINTER device. The optional parameters (<from> <to>) will allow you to print a part of the buffer. In that case, the first buffer address is 0.

6.13 PRINT-NOTE

Format: PRINT-NOTE <note number>

Prints the test program note(s), on the device selected as the PRINTER device.

Parameters:

<note number> :
The note number to be printed.
DEFAULT: All existing notes.

6.14 PROGRAM-STATUS

Format: PROGRAM-STATUS

Prints some information at the CONSOLE terminal:

- TPE MONITOR version.
- Day, hour, minute.
- CONSOLE terminal logical unit number.
- PRINTER device logical unit number or open file number. Printer mode.
- Stop on full page.
- Name of the loaded test program.

The test program may add its own information.

6.15 TERMINAL-MODE

Format: TERMINAL-MODE <full page stop>

Sets or resets the stop on full page function for the CONSOLE terminal. Any output to the CONSOLE is stopped after 22 lines and bell is activated once. The output restarts when any key is pressed.

Parameters:

<page stop> : Must be answered with YES or NO.
DEFAULT: The opposite of the present state.

6.16 SET-TERMINAL-TYPE

Format: SET-TERMINAL-TYPE <type>

Selects the type for the CONSOLE terminal. Used to handle editing functions when giving inputs from the CONSOLE terminal keyboard. Only a few terminal types are handled:

2 = Paper printer terminal.
3 = Tandberg, any type. (Includes also 36, 53, 83, 93)
4 = Infoton, any type. (Includes also 5, 12)

The original value is 2, or the SINTRAN defined type.

Parameters:

<type> : A decimal value corresponding to one of the valid types.
DEFAULT: No default value.

6.17 OPCOM

Format: OPCOM

The communication program with the ND-100 micro program (OPCOM) is entered at the system CONSOLE terminal (IOX 300). OPCOM is terminated when the ESCAPE key is typed.

6.18 DATCL

Format: DATCL

Prints current time and date at the CONSOLE terminal. If the display panel is present, the monitor clock was updated from the hardware calendar at the start-up time (it is also updated in case of a restart or a power failure restart).

6.19 UPDAT

Format: UPDAT <minute> <hour> <day> <month> <year>

Sets the correct program time and date, and writes the hardware calendar if the display panel is present.

Parameters:

<time> : Numeric decimal values with legal ranges.
DEFAULT: No default value.

6.20 MODE

Format: MODE <input file name> (<output>)

The input for the command processor is switched to the specified file name with default type SYMB. The output is switched to the PRINTER device presently defined.

If the optional parameter <output> is supplied, the PRINTER device is defined or re-defined. The command SET-PRINTER-DEVICE-NUMBER (or SET-PRINTER-FILE) is executed automatically.

The specified input file acts as a mode file under Sintran with the following restrictions:

- A new MODE command may appear in the MODE file, but there is no return mechanism to the previous one.
- Some monitor commands are not allowed in MODE:
  - OPCOM
  - SET-CONSOLE-DEVICE-NUMBER
  - SET-PRINTER-DEVICE-NUMBER / SET-PRINTER-FILE
  - SET-TERMINAL-TYPE
  - TERMINAL-MODE

6.21 EXIT

Format: EXIT

Stops the computer, or returns to SINTRAN. If a subset of commands is entered, EXIT may return to a previous command level instead. The command EXPLAIN-COMMAND EXIT always indicates what the EXIT command will do.

7 USING THE TPE MONITOR VIA TELEFIX

The TPE MONITOR includes functions for direct communication with TELEFIX.

7.1 The TELEFIX command LOAD-BINARY

TELEFIX command format: LOAD-BINARY <BPUN file name>

This command may be used from the TELEFIX system to load the TPE MONITOR in the remote system memory through the communication line. This is the same procedure as for loading any binary program.

In case of communication failure or hang up, the remote system may be forced to enter STOP mode by using the MANUAL-MODE to send 3 consecutive ESCAPEs.

7.2 The TELEFIX command LOAD-PROGRAM

TELEFIX command format: LOAD-PROGRAM <TEST file name>

The TPE MONITOR is assumed to be already running in the remote system and waiting for a command. At the TELEFIX system side, the LOAD-PROGRAM command may be used to send a TEST file to the TPE MONITOR through the communication line. After the transfer is terminated, the MANUAL-MODE is to be activated from the TELEFIX terminal in order to be in connection with the remote system in the same situation as after the execution of a LOAD-PROGRAM command directly given at the TPE MONITOR.

In case of communication failure or hang up, the remote system may be forced to enter STOP mode by using the MANUAL-MODE to send 3 consecutive ESCAPEs.

7.3 The TELEFIX command CONVERT-OCTAL-TO-ASCII-MANUAL-MODE

This is one to run the MANUAL-MODE:

Whenever a string of characters is received from the remote system that has the apperance of a 6 digits octal number, it is replaced and displayed as two ASCII character codes corresponding to this octal number. Control codes which are not CR or LF are displayed as a dot.

This command is particulary suitable if the TPE MONITOR crashes in the remote system during a test program run, and the printer device is in buffered mode (the SET-PRINTER-MODE BUFFERED command has been issued). It is then possible to fetch the program output messages from the buffer in main memory.

Four memory locations must first be inspected in the remote system by using the normal MANUAL-MODE:

- Content of locations 10-11 = 32 bit physical memory address for the printer buffer.
- Content of locations 12-13 = 32 bit physical memory address for the upper bound of the text present in the printer buffer.

Then, the CONVERT-OCTAL-TO-ASCII-MANUAL-MODE command may be used to dump the remote main memory between these two limits, by sending the OPCOM command xxxxxxxx<yyyyyyyy. (xxxxxxxx = 32 bit content of memory locations 10-11, yyyyyyyy = 32 bit content of memory locations 12-13)

7.4 The TELEFIX script code PROTOCOL

The script code PROTOCOL ON is intended to activate a communication protocol for messages exchanged between TELEFIX and the TPE MONITOR during execution of a TELEFIX automatic mode. When the protocol is in use, communication errors on the line are automatically handled. The protocol is turned off by the script code PROTOCOL OFF.

In case of communication hang-up, the TPE MONITOR stops the remote system after a time-out. If the MANUAL-MODE is entered while the TPE MONITOR is waiting for a command and the communication protocol is still on, it may be turned off by sending 3 consecutive CTRL+N. It is not possible to communicate directly through the MANUAL-MODE as long as the protocol is on in the TPE MONITOR.

8 ERROR MESSAGES FROM THE MONITOR

Error messages displayed by the TPE MONITOR are of 3 kinds:

1) Errors concerning a monitor command decoding and execution, including the errors returned by the file system.

2) System errors.

3) PLANC library run-time errors.

8.1 Errors from monitor commands

One such error does not stop the monitor, but usually aborts the command and returns to the command processor.

Errors may be detected when giving a command and parameters.

Example: *** Ambiguous command ***

Errors may be detected during the command execution.

Example: *** Printer not ready ***

Errors may come from the file system, either stand-alone or SINTRAN.

Examples: NO SUCH FILE NAME DEVICE NOT READY

8.2 System errors

One such error is displayed following the TELEFIX log file format, and aborts the TPE MONITOR.

Errors may be detected by the internal interrupt system.

Example:
```
==TPE42=> Memory parity error. PEA, PES:  xxxxxx xxxxxx
========> Level (decimal), instruction, address: x  xxxxxx  xxxxxx
========> Fatal error, STOP forced.
```

Other hardware errors may also be detected.

Example:
```
==TPE42=> The clock does not work
========> Fatal error, STOP forced.
```

Errors may be detected by the monitor because the test-program command does not handle the error situations by itself. In principle, this should not happen.

Example:
==TPE43=> Unexpected program error. ERRCODE = xxxxxxB
=========> Fatal error, STOP forced.

8.3 PLANC library run-time errors

The monitor is written in PLANC, and the PLANC library includes some routines which may stop the monitor in case of internal error detection in the PLANC logic. In principle, this should not happen.

Example: - STACK OVERFLOW AT xxxxxxB