

# Norsk Data



## **SINTRAN III Introduction**

ND-60.125.04





# **SINTRAN III**

## **Introduction**

**ND-60.125.04**

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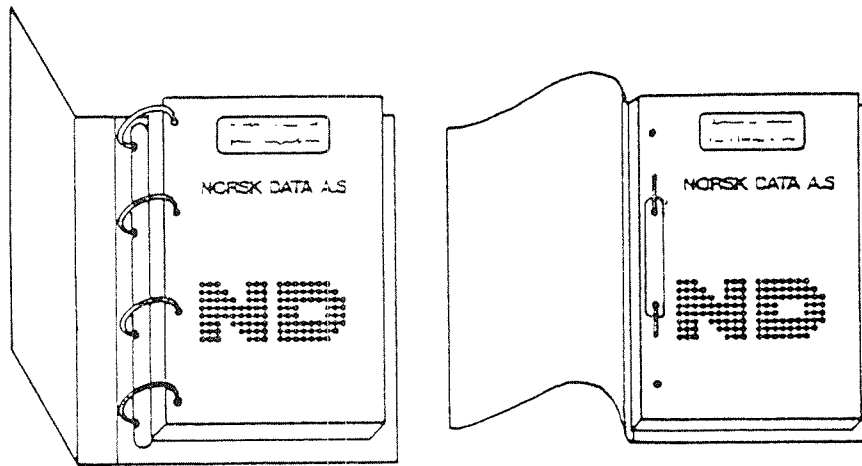
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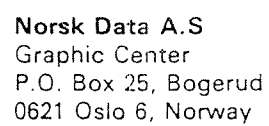
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SINTRAN III Introduction  
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Preface:THE PRODUCT

SINTRAN III is the operating system presently used with ND computers. This manual corresponds to the I-version of SINTRAN III, but most of features described are general for SINTRAN III and not specific for the I-version. It can therefore be read as an introduction to the operating system irrespective of the version.

THE READER

The manual is intended for new users of ND computers who need an introduction to data processing in general and SINTRAN III in particular. It is written for people who will mainly use SINTRAN III as an aid in their daily work with text processing (NOTIS-WP), information retrieval (NOTIS-IR), etc. We call them Administrative Data Processing (ADP) users. People with basic knowledge and experience of computers, but who are new to SINTRAN III, may find it more interesting to start with the SINTRAN III Timesharing Guide mentioned below.

PREREQUISITE KNOWLEDGE

None.

THE MANUAL

The manual is written with a view to explaining the basics of a computer system to people who have never been in contact with one before. It contains tutorial style information, and is arranged sequentially. It has a number of examples which stand out in boxes. As a rule, these are placed before the explanation of the example. First time readers should therefore, whenever they encounter an example, skip to read the explanation first and refer back to the example in the box. The manual may then later be used as a simple reference book and reminder, where the users locate the boxed examples in the beginning of each section.

Chapter 1 gives a basic introduction to how a computer system works. Chapter 2 gives an introduction to the use of an ND computer via the terminal. Chapter 3 describes some of the standard ND ADP programs that users are most likely to use. Users that are not likely to use systems described here, may skip the relevant chapters. Chapters 4, 5, 6 and 7 describe file handling, printing of information, the use of floppy disks and other SINTRAN facilities and commands. There are several named and numbered examples, which are listed in the beginning of the manual.

RELATED MANUALS

More detailed information about the computer system is found in the manuals

SINTRAN III TIMESHARING GUIDE	ND-60.132
SINTRAN III REFERENCE MANUAL	ND-60.128

Detailed information on the ADP programs mentioned in this manual is found in

INTRODUCTION TO NOTIS-WP	ND-63.001
NOTIS-WP REFERENCE MANUAL - EDITOR	ND-63.002
NOTIS-TF REFERENCE MANUAL - FORMATTER	ND-63.007
NOTIS-IR USER GUIDE	ND-63.005
ACCESS USER GUIDE	ND.60.153

#### CHANGES FROM PREVIOUS VERSION OF THE MANUAL

This is a totally rewritten version of the manual, with more emphasis on explaining the basic principles of a computer system. All information concerning programming has been taken out, and replaced by a chapter describing some of the most common ADP programs on ND computers.



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## SINTRAN III

**1 WHAT IS A COMPUTER SYSTEM?**

Before you start you should read this little guide to how to use the manual. The material in this manual is arranged sequentially. It contains tutorial style information which can be used as a self-study guide. Whenever you encounter an example which stands out in a box, note that the explanation usually follows after the box. You should therefore read the explanation before you try to do what is described in the box.

Later, when you are more experienced, you may use the manual as a reference book. It will then often be sufficient just to locate the boxed examples. Several examples are named and numbered, and listed in the beginning of the manual. This makes it easier to locate them. There is also an index of key words at the back.

Chapter 3 describes four ND subsystems. If you are not likely to use some of them in your work, it is not necessary to read about them.

A computer system is a very useful tool with which you can perform a wide variety of tasks. There is nothing mysterious or magical about a computer. It can only do what it is told, but that it does very quickly and efficiently. A computer relieves you of the routine and time-consuming part of your work.

Here are some examples of what a computer can be used for:

- A word processing system makes life much easier for secretaries and others who have a lot of typing to do.
- With a computer you can build great filing systems which enable you to find exactly that little piece of information you are looking for in next to no time at all.
- Computers are widely used for accounting and financial analyses.

- A computer is indispensable for scientists and others who use it for calculations and analyses.

These are only a few examples. Perhaps you are going to use the ND computer for something completely different in your work.

### 1.1 WHAT DOES A COMPUTER SYSTEM CONSIST OF?

Have a look at the figure below:

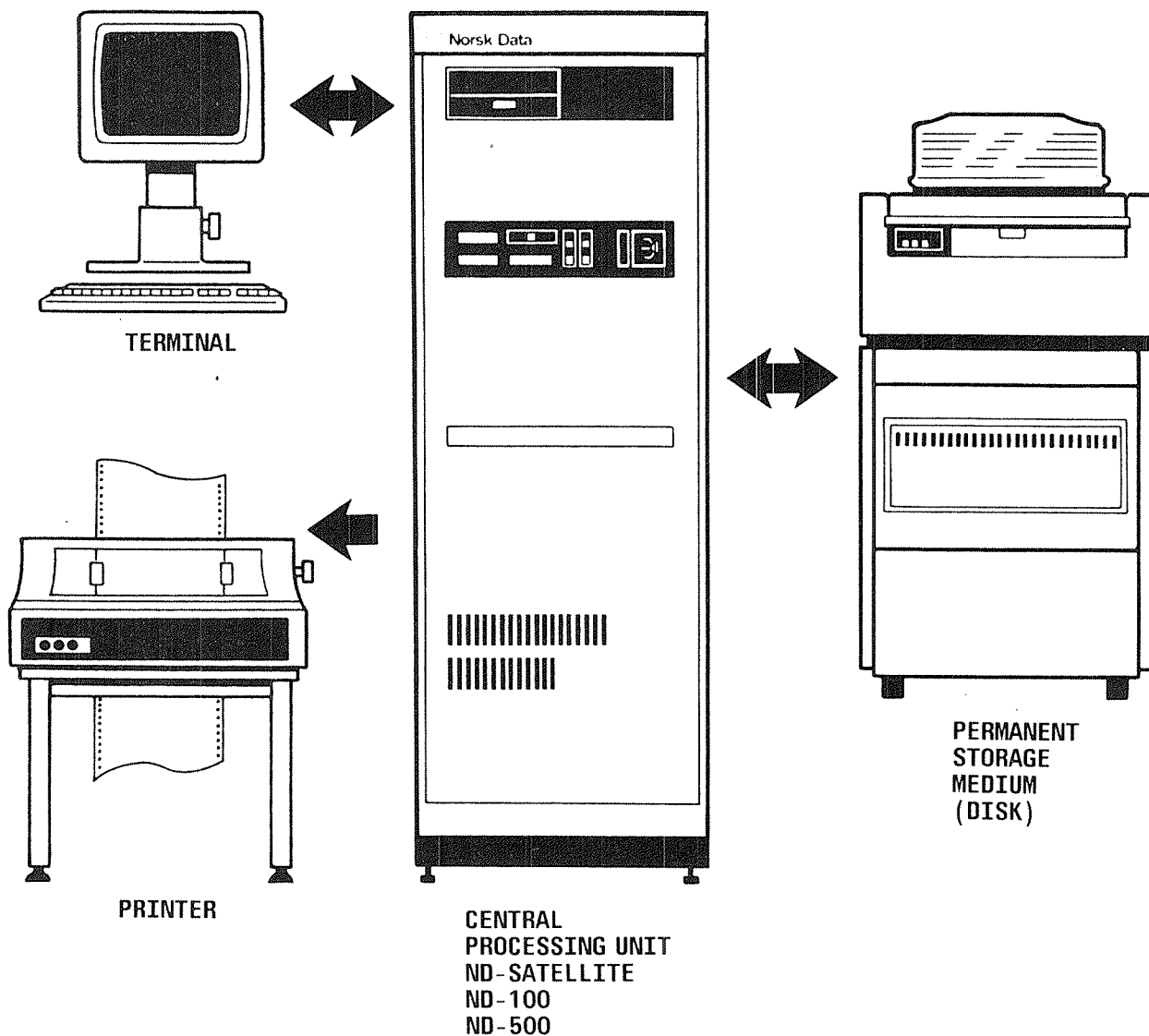


Fig. 1. The main physical components of a computer system

Let us begin with the **TERMINAL**. (You should have one on your desk when reading this manual. We will begin using it in a couple of pages time.) The terminal consists of a screen and a keyboard, similar to that of a typewriter. You use the terminal to "communicate" with the computer. From the terminal you give commands and instructions to the computer, and you receive messages and results from the computer. You type your instructions on the keyboard, and they are displayed simultaneously on the screen. You then send the instructions to the

**CENTRAL PROCESSING UNIT** which is really the computer itself. It then interprets and carries out the instructions and produces the result.

The **PERMANENT STORAGE MEDIUM** is where you store all your data. It is the place where you keep copies of your letters and documents, it is the place where you keep all the information in your filing system, etc. You may at any time call data from the storage medium to the screen to look at it or process it further.

The permanent storage medium on ND computers is usually a **DISK**. This is a physical unit which is connected to the central processor. In the figure on the previous page it is depicted as a separate unit outside the computer cabinet, which is most often the case for ND computers. Some computers, eg., the ND-Satellite, have the central processor and the disk in the same cabinet.

The **PRINTER** is a device which enables you to produce paper copies of your letters, information from your filing system, the result of a particular operation carried out on the computer, etc.

As you can see from figure 1 on page 2, the central processing unit is right at the heart of the whole system. All the other units, terminals, permanent storage units and printers are called **peripheral devices**.

## 1.2 WHAT IS AN OPERATING SYSTEM?

We have now looked at the physical components of a computer system. But a computer also needs a set of **programs** to be able to operate, of which the **OPERATING SYSTEM** is the most important. The operating system on ND computers is called SINTRAN III.

The operating system is the system which enables you to communicate with your computer. SINTRAN III stands between the physical machine and the user, providing a set of commands which the computer understands.

An ND computer usually has several terminals connected to it, and several users may be using the computer at the same time. For you, the individual user, it nevertheless seems as if you have got the computer all to yourself. This is the work of SINTRAN III.

SINTRAN III controls the activity on the computer, i.e., it apportions the computer resources between the different users. This is possible because the computer works very quickly compared to the users. If you give a particular command, the computer will carry it out, but before you have finished typing in your next command, the computer goes on to carry out the command of another user. In this way the different commands given by different users are handled one by one in rapid succession, so rapidly that the individual users feel they have the computer all to themselves. This feature is called **TIMESHARING**.

The basic features of the SINTRAN III operating system are therefore:

- a) It provides a set of commands which makes it possible for you to communicate with the computer.
- b) It controls the activity on the computer, distributing the resources between the different users.

### 1.3 INFORMATION STORAGE

You should understand the basic principle of how information is stored in the computer.

Let us look again at the basic components of the computer system, this time concentrating on the relationship between the terminal, the central processing unit and the permanent storage medium:

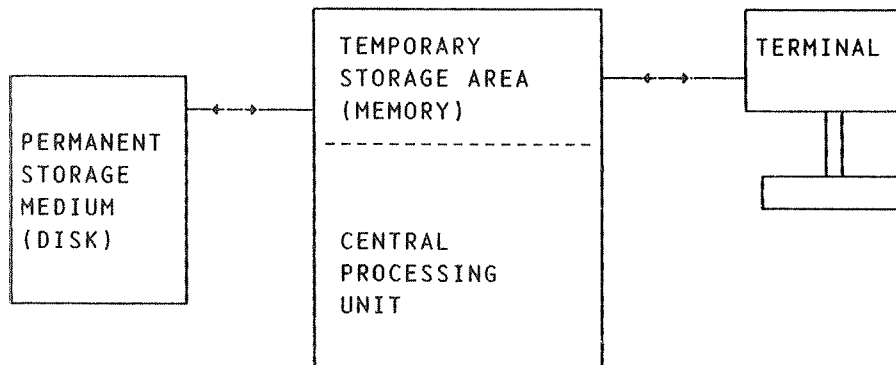


Fig. 2. The relationship between the terminal, the CPU and the disk

Let us say that you are typing a letter using the word processing system NOTIS-WP. What you type on the terminal is simultaneously stored in the computer's **TEMPORARY STORAGE AREA** (also called **MEMORY**). When you have the text in the temporary storage area you can edit and manipulate it in many different ways.

If you want to keep a copy of your letter, ie., if you for instance want to call it up the next day or after lunch to continue working on it, you must store it on the disk.

The disk can be compared with an ordinary filing cabinet. Each user has a reserved space, the **USER AREA**, in which s/he can store her/his work. This can be compared with a filing cabinet, where each person owns one drawer.

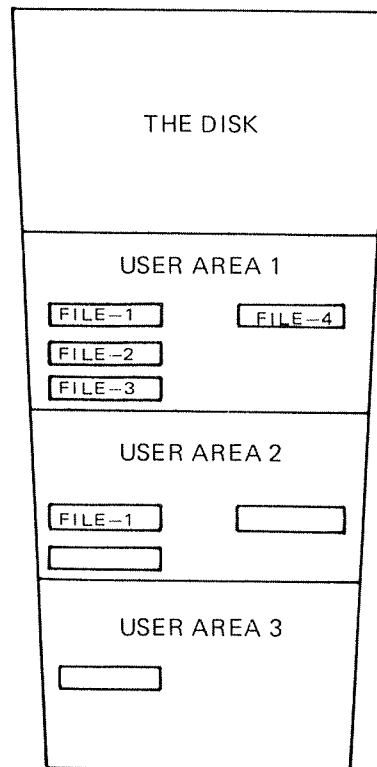


Fig. 3. How data is stored on the disk

Inside each drawer in a filing cabinet there are several files on different subjects, each labelled with a descriptive name. In the same way the user area is divided into **FILES** which each contain a collection of related information, eg., a letter. Like the file in the filing cabinet, the file in your user area also has a unique name which makes it possible for the computer to find it and for you to remember what is in it.

Every time you want to do something with a particular file, eg., your letter, you call a copy of that letter into the memory (temporary storage area) in the central processing unit, and it is simultaneously displayed on your screen. You can then carry out the modifications you want. When you store the modified file on the disk again with the same name, the old contents of the file will disappear and the modified text will be stored in the file instead.



SINTRAN III INTRODUCTION  
WHAT IS A COMPUTER SYSTEM?

## 2 USING THE TERMINAL

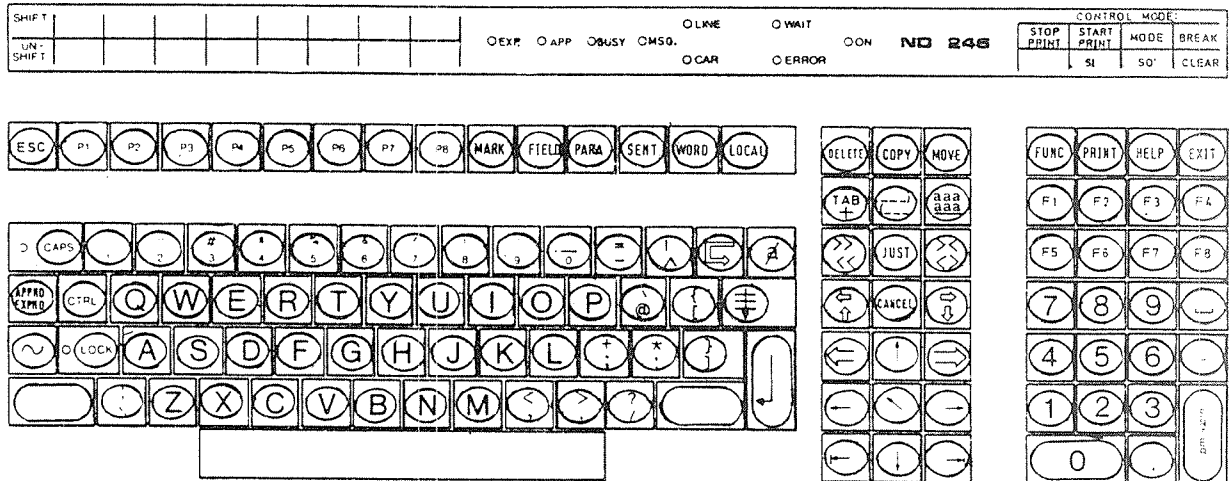


Fig. 4. The NOTIS keyboard

Now it's time for you to start using the terminal. Try out the procedures described in this chapter as you go along. Do not be afraid of making mistakes. Nothing serious can go wrong.

## 2.1 LOGGING IN

Below is how it will look on the screen when you log in. Everything you type in is underlined. The little square box means that you must press the corresponding key on the keyboard. The  $\leftarrow$  is the carriage return key to the right on the keyboard. Everything else is what the computer writes on the screen.

### EXAMPLE 1: HOW TO LOG IN

ESC

13.23.26 26 SEPTEMBER 1983  
SINTRAN III - VSE H  
ND-100.685

ENTER your-user-name $\leftarrow$

PASSWORD: your-password $\leftarrow$

OK  
a

- 1) Look at the little ON lamp on top of your keyboard. If it is lit, the terminal is turned on. If it is not lit, you have to turn on the terminal. The power switch on most terminals is located on the lower left side of the video display unit. Press it. You will hear a "bip" and after a few seconds the screen will light up. A small blinking line will appear in the upper left corner. Above the power switch you will also find a little wheel with which you can regulate the brightness of the screen picture.
- 2) Then look at the the little lamp marked LINE on top of your keyboard. On most keyboards this should now be lit. That means that the terminal is ON-LINE, ie., contact is established between the computer and the terminal. If the LINE lamp is not lit, press the key marked

LOCAL

or on some terminals

LINE

Now both the ON and LINE lamps should be lit, which means that you are ready to LOG IN. To log in means to get in contact with the operating system.


- 3) Press the key marked

ESC

This is like knocking on the computer's door, telling the computer that you want to log in. ESC is short for Escape. The computer will now respond by displaying the date and time and the current version of SINTRAN, and possibly the name and/or number of the computer you are working on. The most important word for you is the word

#### ENTER

Just after the word ENTER you will see a small blinking line or rectangle of light which is called the *CURSOR*. This shows you where the characters you type in will be written. The computer is now waiting for you to enter your *USER NAME*. The computer has a set of recognised user names in its memory. Only by typing in one of these is it possible to log in. If you haven't been given your personal user name yet, see the SYSTEM SUPERVISOR and ask him/her to give you one.

- 4) Then type your user name after the word ENTER. If you make any mistakes while typing, just press the  key, which will delete the last character you typed in. Then press the key marked




or on some terminals

RETURN



or

CR

This RETURN or CARRIAGE RETURN key (written  in this manual) is an important key. You must always end any line or command entered into the system with this key. This tells the system to start reading and processing what you have just typed in.

The system now responds by displaying the word

#### PASSWORD:

Passwords are used to prevent unauthorised people (who do not know the password) from entering the computer using your user name. Type in your password if you have one, then press the -key. The password is secret, and is therefore not shown on the screen when you type it in. If you don't have a password, just press the -key.

The computer now displays

OK  
@

and the cursor is positioned after the "@". You have now logged in. This means that you are in contact with SINTRAN III. Whenever the "@" is displayed on the screen, it means that SINTRAN III is ready to accept commands and instructions from you.

Some computers have an accounting system to measure the time and resources used on different projects. If this is the case on your computer, you will also be asked for a **PROJECT PASSWORD** to complete the logging in procedure. Type it in if you have one, if not just press the `↵`-key.

You have now logged in, and SINTRAN III is ready to accept commands from you. Before you learn how to log out, let us try one simple command. Type in the words WHO-IS-ON right after the "@" and terminate with the `↵`-key, like this:

```
@WHO-IS-ON↵
```

The computer will now respond by displaying a list of all the users that are logged in at the moment and the number of the terminal they are using, similar to the one below:

```

      48 TERRY-TRASH
      50 JOLLY-GOOD
      51 HOLLY-DAY
      60 SYSTEM
===> 63 YOUR-OWN-USERNAME
      545 SYSTEM

```

The arrow points to your own user name and terminal number.

## 2.2 LOGGING OUT

### EXAMPLE 2: HOW TO LOG OUT

```
@LOG↵

11.42.50      10 AUGUST  1983
--EXIT--

```



When you have finished your work at the terminal, you must LOG OUT. This means to disconnect from the operating system. This saves resources and prevents anyone using the machine with your user name. It is a good rule to log out whenever you leave the terminal for any length of time.

The logging out procedure is quite simple: you just type LOG after the "@" and then press the ↵-key.

The system will respond by displaying the current time and date, and confirm the log-out with the word EXIT.

Practice logging in and out a few times before you read on.

### 2.3 GIVING COMMANDS

Log in.

The "@" is now displayed on the screen, which means that SINTRAN III is ready to accept commands from you. Commands are instructions from you to the computer. Let us look at an example to find out the rules for giving commands. (In the example, as in the other examples in this manual, what you type in is underlined.)

The command LIST-FILES will give you a list of all the files you have stored in your user area on the disk.

#### **EXAMPLE 3: THE RULES FOR GIVING COMMANDS**

a)	@ <u>LIST-FILES</u> ↵
b)	FILE NAME: <u>letter</u> ↵
c)	OUTPUT FILE:↵

- 1) Commands are typed in just after the "@". (a)
- 2) All command lines must be terminated by ↵. (a,b,c)
- 3) SINTRAN III does not distinguish between UPPER and lower case letters, so you may use both. (Compare a and b.)
- 4) A command may consist of letters or a combination of letters and the hyphen. No spaces are allowed in a command name. (a)
- 5) A command may require **PARAMETERS**. (b,c). In a parameter you specify some information, which may not be the same every time the command is used. The command LIST-FILES requires two parameters, "file name" and "output file". After you have terminated the command with ↵, the system responds by asking for FILE NAME, ie., displaying FILE-NAME on the screen. Now you can specify the file name you want to have listed. In the

example you want a list of all the files beginning with the word "letter". If you had given only `+` in response to the file name prompt, you would have got a list of all your files.

- 6) The above illustrates another point: parameters can either be **MANDATORY** or **OPTIONAL**. A mandatory parameter must always be given, or the command will not be executed. An optional parameter need not be specified (just give `+` in reply to the prompt), in which case SINTRAN III will assume a default (ie., standard) value for the parameter. The default value for FILE-NAME is all the files belonging to that user.

The "OUTPUT FILE" parameter in the example is also an optional parameter. You may specify here where you want the result output, eg., on a printer, a new file on the disk, etc. The default value (as you requested in this case by pressing the `+`) is your terminal. This means that you will get a list of all your files which begin with "letter" displayed on your terminal.

- 7) Commands, file names and parameters can be **ABBREVIATED**. However, it is important that command names do not become ambiguous. For example, you may abbreviate the command LIST-FILES to LI-FI, whereas the abbreviation L-F produces the error message AMBIGUOUS COMMAND. In this case SINTRAN III can not tell whether you want to execute the command LIST-FILE or LIST-FRIENDS.

Parameter values may also be abbreviated, but here the idea is often that the abbreviation should be ambiguous. In the example you wanted to get a list of all the files beginning with the word "letter", eg., "letter-1", "letter-2", "letter-jones", etc. If you had specified only "l" instead of "letter", you would have got a list of all your files beginning with "l", eg., "letter-1", "letter-2", "letter-jones", "lecture-wp", "list-customers", etc.

Another general point on abbreviation: The use of hyphens in commands and file names makes it easy to make efficient abbreviations. Eg., if you have the three files "letter-1", "letter-2" and "letter-3", you can omit the part which is identical and only specify what is unique for each file name. Thus, "-1", "-2" and "-3" are unambiguous abbreviations for the three files.

- 8) The commands and parameters may be typed **ON ONE LINE**, thus:

<code>@LIST-FILES letter, +</code> <code>↑</code>
--

The command name and the first parameter must be separated by a blank (see the arrow).

If there are several parameters, they must be separated by commas or spaces:

<pre> @LIST-FILES letter,printer↵       ↑       or @LIST-FILES letter printer↵         </pre>
---

If there are optional parameters for which you want the default value, these must be indicated by a comma:

<pre> @LIST-FILES letter,↵       ↑↑       default parameter       separator         </pre>
--

9) Occasionally you may make a mistake as you type in commands. There are several ways of correcting this:

- The key `⌫` will delete the last character typed in. For instance, if you have typed LIST-FILRS, press the `⌫` twice, which will delete the two last characters. Then type ES to correct the mistake. Instead of deleting the two last characters when you press the `⌫` key, some systems may display two hats to signal that the two last characters are deleted. LIST-FILRS^^ means that the two last characters are deleted.
- If you press the ESC key, the system will stop whatever it is currently doing, and display the @-sign. If you for instance have typed LOST-FILES, just press the ESC-key and type the command again. This is quicker than deleting the characters OST-FILES and typing the command again.
- If you mistype a command and press the `↵` key to execute it, the system will display the message NO SUCH FILE NAME, and display the "@" again. Just try again!

Now try the following commands and compare the results. (Note: you must have some files stored in your user area):

```
@LIST-FILES↵
FILE NAME:↵
OUTPUT FILE:↵
```

```
@LIST-FILES↵
FILE NAME:1↵
OUTPUT FILE:terminal
```

```
@LI-FI↵
FILE NAME:1↵
OUTPUT FILE:t
```

```
@LI-FI 1 t
```

```
@LI-FI 1,1
```

```
@LI-FI 1,1
```

```
@LI-FI 1,1
```

```
@LI-FI 1,1
```

```
@LI-FI,1,1
```

```
@L-F,1,1
```

```
@LI-F,1,1
```

```
@L-FI,1,1
```

## 2.4 EXECUTING SUBSYSTEMS AND PROGRAMS

Most of us use our computers for specific purposes. Some use them for word processing, others for data registration or retrieval, others run specifically designed programs tailored to their individual needs, and so on. You have to go via SINTRAN III in order to get to these individual systems or programs. SINTRAN III is like an "umbrella" under which subsystems and individual programs are organised.

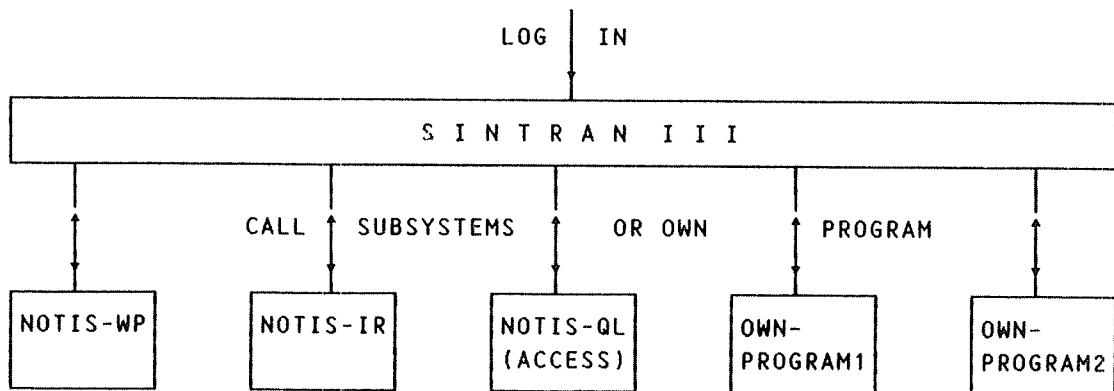


Fig. 5. The organization of subsystems and programs under SINTRAN-III

### EXAMPLE 4: HOW TO CALL A SUBSYSTEM OR PROGRAM

```

@NOTIS-WP<|
or
@OWN-PROGRAM1<|
    
```

The procedure for calling a special program or subsystem is as follows:

- 1) First you must log in to SINTRAN III.
- 2) Then you call one of several subsystems or individually designed programs. NOTIS-WP (Word Processing), NOTIS-IR (Information Retrieval) and NOTIS-QL (Query Language) are some of the subsystems which are delivered by ND.



- 3) The procedure for calling a subsystem or a program is the same as for giving ordinary SINTRAN commands, ie., you enter the name of the program after the "@" and terminate with ↵.
- 4) As with ordinary SINTRAN commands, the subsystem or program names may be abbreviated as long as they are unambiguous:

@N-WP↵

or

@O-PROGRAM1↵

- 5) SINTRAN III will now give the control to the subsystem or program. In the case of NOTIS-WP, for example, this means that you enter the word processing system and can start writing and editing your letters and documents.

When you have finished your work with a subsystem, you must exit from it and go back to SINTRAN III. Likewise, a self-designed program must be terminated (it may terminate itself) and control returned to SINTRAN after the program is executed.

In chapter 3 we shall investigate a few of the most common subsystems under SINTRAN III.

### **3 TEXT AND INFORMATION HANDLING**

This chapter describes some of the ND subsystems. If you are not likely to use some of them in your work, you may skip the corresponding sections.

#### **3.1 NOTIS-WP - THE TEXT PROCESSING SYSTEM**

If you are not likely to use NOTIS-WP in your work, you may skip this section.

NOTIS-WP is an advanced, yet very easy use text processing system. It does all the things you can do with a typewriter and much more, and it makes the job of producing letters and professional looking documents much quicker and easier. (If you do not have NOTIS-WP on your computer, but do have the program editor PED or the text editor TED, you may still find it worthwhile to read this section, since the systems have a lot in common.)

##### **3.1.1 Starting NOTIS-WP**

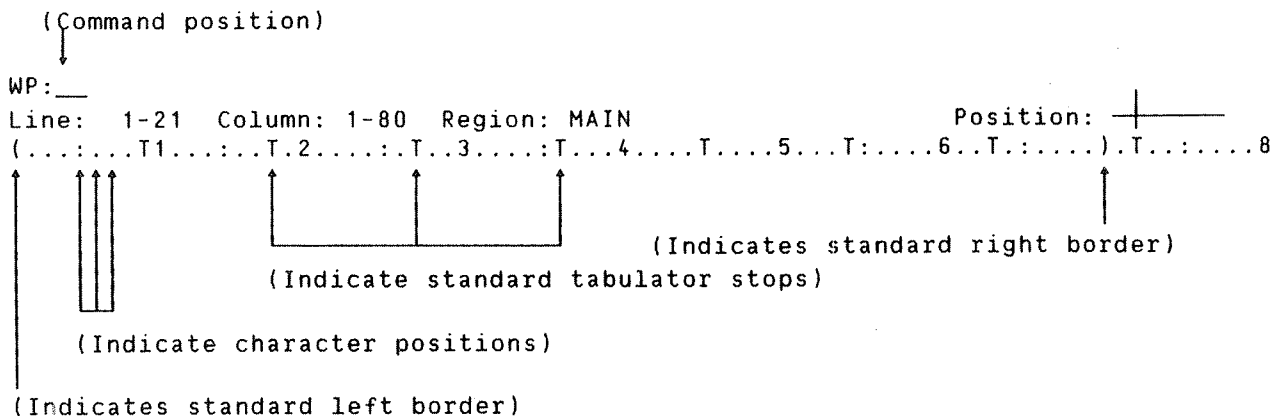
After you have logged in and you have the "@" (the SINTRAN sign) on the screen, you are ready to start NOTIS-WP.

#### **EXAMPLE 5: HOW TO ENTER NOTIS-WP**

@NOTIS-WP-ENG↵	(or @N-W-E↵)
----------------	--------------

After the "@", type NOTIS-WP-ENG followed by ↵. It may be abbreviated to N-W-E. (This is for the English version of NOTIS-WP. If you are using one of the other language versions of the system, the "ENG" will change to "NOR" for Norwegian or "FR" for French, etc. Ask your System Supervisor if in doubt.)

The following picture will appear on your screen. (The arrows and text enclosed in parentheses are explanations and comments and are not part of the screen picture):



Refers to how characters are stored in the computer

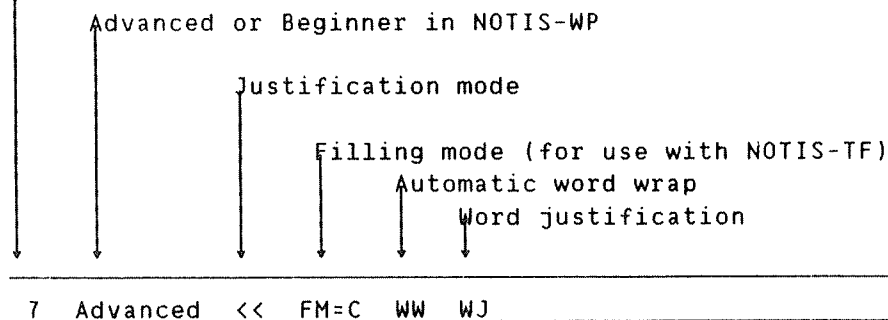


Fig. 6. An empty screen picture in NOTIS-WP

The cursor will be positioned on the top line, after the "WP:". This is called the **HOME** position or the **COMMAND** position, and in this position you can give direct commands to NOTIS-WP.

Line no. 2 gives you information about which lines and columns of your **WORKAREA** (see below) that are displayed on the screen, which region you are in (you may ignore this information at this stage), and to the far right a position indicator tells you where you are in the document.

Line no. 3 is the position line. One screen window is 80 character positions (or columns) wide. The left "(" and right ")" margins are indicated, as well as tabulator stops (the "T"'s).

The next 21 lines are blank. These are the 21 first lines of your **WORK AREA**, which is where you type in your text. The work area consists of a virtually unlimited number of lines. When you have typed in the 21 first lines of your text, the screen window will "scroll" to display lines 12 - 32. The work area is 256 columns wide. The screen window therefore only displays a small part of the entire work area:

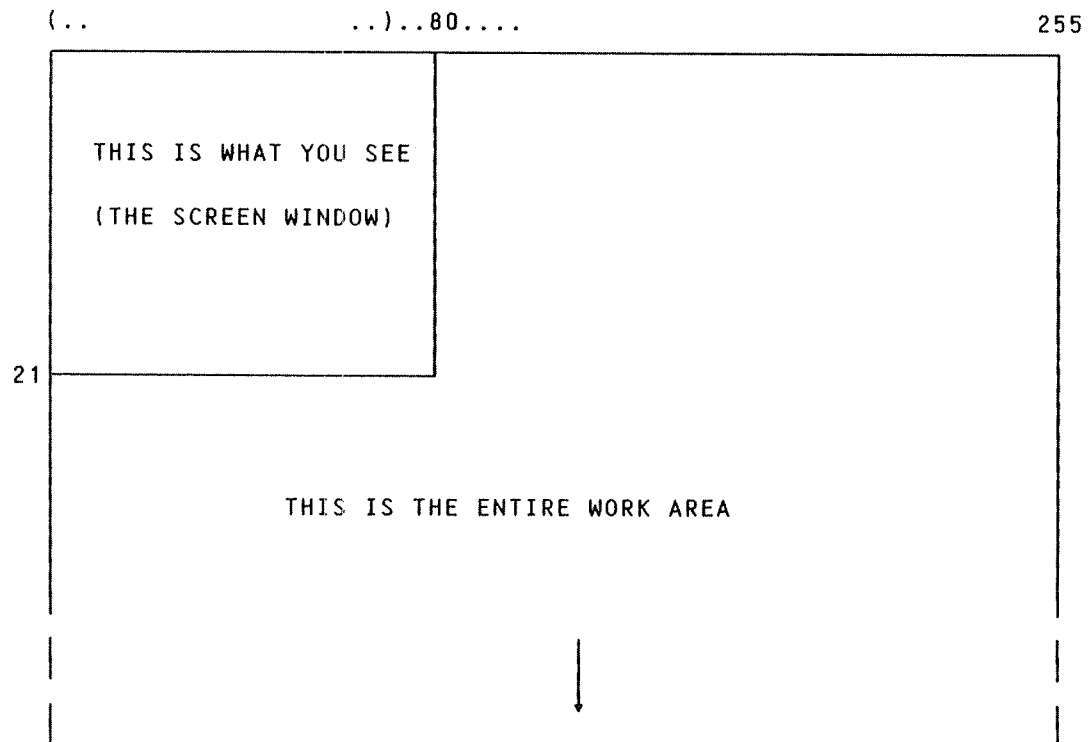


Fig. 7. The screen window covers only a part of the entire work area

The bottom line of the screen window is the **STATUS LINE**. It appears in inverse video, ie., dark characters on a light background. This gives you information about which features of NOTIS-WP are turned on or off. What is actually on the status line may differ from system to system, and you may ignore this information at this stage.

However, it is important that the status line does appear in inverse video. If it does not, it means that you must change the terminal type. NOTIS-WP can be run on several types of terminals. Ask the system supervisor which terminal type you have, and change the terminal type in the following way when the cursor is in the HOME position:

**EXAMPLE 6: HOW TO CHANGE THE TERMINAL TYPE IN NOTIS-WP**

1. WP: !
2. WP: New terminal type: 53 ↵

The number 53 is for the NOTIS terminal, ND 2200/9. If you do not have a NOTIS terminal, see in the NOTIS-WP Reference Manual for a list of terminals and the corresponding types, or ask your System Supervisor.

The status line should now be in inverse video. If you have difficulties calling NOTIS-WP or getting the correct picture on the screen, ask your system supervisor.

**3.1.2 How to enter text using NOTIS-WP**

When you enter NOTIS-WP the cursor will be in the HOME position. To start typing in text, press the ↵-key. The cursor will then jump into the work area, and you can now begin to enter text in the same way as you would on a typewriter.

Go ahead!

Play around for a while, and type in some lines of text. Never mind if you make mistakes. You will learn how to correct these later. You will see that the system has an automatic line shift, which means that you do not have to worry about whether the last word will fit into the line or not.

**3.1.3 Storing text**


What you type in the work area is only temporary until you STORE it in a document or a file on the disk.

Let us say that what you have just typed is the first part of a letter. But it's 5 o'clock on Friday afternoon, and you must go off and enjoy the weekend. This is of course very sad, because it means that you will have to postpone typing the rest of the letter until Monday morning.

So you want to store what you have written so far in a document (file) on the disk so that you can pick it up again on Monday morning.

This is how you do it:

### EXAMPLE 7: HOW TO STORE A NEW DOCUMENT

```
If the cursor is in the work area, press  .  
  
WP:W  
  
WP:Store document:"SALES-LETTER"↵  
  
WP:Storing: SALES-LETTER:TEXT →  
  
WP:79 lines stored (3783 bytes)
```

To store what you have typed in the work area, you must first move the cursor back to HOME position. Press the key with the slanted arrow (↵) to the right on the keyboard (we call it the HOME key). This moves the cursor back to HOME position. (If you press this key when the cursor is in the HOME position, the cursor will move back to its previous position in the work area.)

When the cursor is in HOME position, press W (short for write). The following message will appear on the screen in HOME position:

WP:Store document:

If you are storing a text for the first time, you must create a name for it by beginning with " (double quote) and using letters and/or numbers (which may be separated by hyphens) and ending with " (double quote). The double quotes tell the system that you want to create a new document with the name SALES-LETTER which contains everything that is in the work area. Note that you may only use letters and numbers, and the only separators you may use are hyphens. Next press ↵, and the computer will store your letter on the disk in a file called "SALES-LETTER:TEXT".

The part of the file name after the colon is called the **FILE TYPE**. All documents created in NOTIS-WP will automatically be given the type :TEXT.

However unlikely it might be, let us say that you decide to stay on for another 5 minutes to add an important paragraph to your letter.

You press the Home key again, and the cursor moves into the work area again in the position it had when you sent it HOME before storing. You then type the extra paragraph and perhaps make a few corrections.

Now the procedure for storing the text is slightly different:

**EXAMPLE 8: HOW TO STORE AN ALREADY EXISTING DOCUMENT**

↑

(If you are in the WORK AREA)

WP:W

WP:Store document: ↵ (name comes automatically)

↵ (then the text is stored)

NOTIS-WP now knows that the document in the work area is called 'sales-letter', so you do not have to specify the document name. Just press ↵ after the "Store document" prompt, and the document name will be displayed on the screen. You have to confirm that you really want to store this document by pressing ↵ once more.

When you type a document of some length, it is advisable to store the text in this way at regular intervals. Then you will not risk losing many hours work if the computer for some unforeseen reason should break down. This does not happen very often, fortunately, but it really is annoying to be the victim of a sudden power failure and lose several hours work. But your material is safe as long as you have stored it on the disk!

Two points to remember:

- 1) To create a new document, type the name enclosed in double quotes.
- 2) If you store text in a document that already exists, the contents in the document will be replaced by the contents of the work area.

#### 3.1.4 Retrieving text

It is Monday morning, and you want to carry on with the unfinished letter from Friday afternoon.

First you have to log in, and then enter NOTIS-WP in the usual way.

**EXAMPLE 9: HOW TO RETRIEVE EXISTING TEXT**

```
WP:R
WP:Retrieve document:sales-letter↵
WP:Retrieving: SALES-LETTER:TEXT
WP: WP:79 lines retrieved (3783 bytes)
```

When the cursor is in the Home position, press R (which stands for RETRIEVE). The system responds by displaying "Retrieve document:", you then type in the name of your document, followed by ↵. (You may of course abbreviate it; "sa-le" would probably have sufficed here.)

Then you finish the letter and store the final version on the disk again.

**3.1.5 Printing your text on paper**

Obviously you want to get a paper copy of your letter to send off.

**EXAMPLE 10: HOW TO GET A PRINT-OUT**

```
PRINT

or on non-NOTIS terminals

WP:Q
WP:Device name: philips↵
WP:Printing on: PHILIPS
WP:Ready
```

If you have a NOTIS terminal, press the key marked PRINT (it does not matter whether you are in the work area or in the Home position).

If you do not have a NOTIS terminal, give the Home command Q (stands for OUTPUT).



In either case the system will respond by displaying "Device name:". Then you type in the name of the printer where you want the letter output, followed by ↵. It could, for instance, be a PHILIPS, a DIABLO, an EPSON or a LINE-PRINTER. (Ask your system supervisor for the correct name of your printer. There may be a standard printer, in which case you only need to press ↵ in answer to "Device name".)

In the upper right hand corner of the screen you will see an arrow moving through a line from left to right. This means NOTIS-WP is sending your letter to the printer. When the arrow has gone all the way through and the message "Printing on: PHILIPS" is no longer on the screen, it means that your letter has been sent to the printer. However, it might still be a short while before the printer has actually finished printing the letter.

### 3.1.6 Cursor movement

Look at the arrow key pad to the right on the keyboard. On the NOTIS terminal it looks like this:

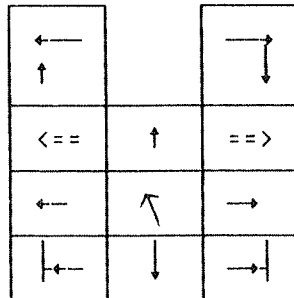


Fig. 8. The arrow key pad on the NOTIS terminal

These keys are used for moving the cursor. See fig 9 overleaf.

In the WORK AREA	In HOME position
<p>↖ cursor moves HOME</p> <p>→ cursor moves 1 position right</p> <p>← cursor moves 1 position left</p> <p>↓ cursor moves 1 line down</p> <p>↑ cursor moves 1 line up</p> <p>→  move to next tab stop</p> <p> ← move to previous tab stop</p> <p>SHIFT + ==&gt; move to end of line</p> <p>SHIFT + &lt;== move to first position of line</p> <p>← Previous screen window displayed ↑ With SHIFT, display moves 40 positions left</p> <p>→ Next screen window displayed ↑ With SHIFT, display moves 40 positions right</p>	<p>↖ cursor moves back to work area</p> <p>→ display moves 40 positions right</p> <p>← display moves 40 positions left</p> <p>↓ next screen window displayed</p> <p>↑ previous screen widow displayed</p> <p>← Previous screen window displayed ↑ With SHIFT, display moves 40 positions left</p> <p>→ Next screen window displayed ↑ With SHIFT, display moves 40 positions right</p>

Fig. 9. The arrow keys and what they do

### 3.1.7 Editing facilities

To give you an idea of how simple and easy it is to edit text with NOTIS-WP, we will describe a few of the special functions and editing facilities that are incorporated into the system.

NOTIS-WP has a sophisticated help function which at any time will give you a list of all the commands and functions that are at your disposal. Press the key marked HELP or give the home command H to get the help information displayed on your screen.

The procedure for obtaining a particular result depends on which type of terminal you have. The purpose-built NOTIS terminal is simplest and easiest to use, as it has special keys that perform particular functions. In the following list, the NOTIS terminal procedure is listed first followed by alternative procedures for other terminals. '<A>' means you must press the key marked 'CTRL' and hold it down while at the same time pressing the character 'A'.



or



or &lt;A&gt;

Deletes the character where the cursor is positioned and contracts the text following to leave no gap.



or &lt;D&gt;&lt;D&gt;

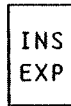
Deletes the entire line where the cursor is positioned.




or &lt;E&gt;

This key sets NOTIS-WP in EXPAND mode. New characters can now be inserted in the text to the left of the cursor and NOTIS-WP will make room for the new characters.

SHIFT +



or &lt;B&gt;

This key sets NOTIS-WP in APPEND mode. A blank line will be inserted every time you press  or when you come to the end of the line and an automatic lineshift occurs.




or &lt;L&gt;

This key inserts a blank line above the line where the cursor is positioned.

SHIFT +



This key makes it possible to search for specific words or expressions in your text. The message "WP:Get string:" will appear on the screen, and you type in the text you want to find followed by . The first occurrence of the text will be brought onto the screen, with the cursor placed under the first character.



or &lt;G&gt;

This key continues the search for the next occurrence of the text specified above.

### Home command S - SUBSTITUTION

With this command you can replace one character or set of characters throughout your document or part of your document, either automatically or with full manual control.

Give the command S in Home position. The following will appear on the top line of your screen:

WP:Substitute:	with:	Manual check:
----------------	-------	---------------

Type in the characters that you wish changed followed by ↵. The cursor will skip to the right of the word "with".

Next, type in the new characters you wish to replace the old ones with, followed by ↵.

The cursor will now skip to "Manual check". Here you must type "Y" or ↵ for yes, or N for no.

If you answer Y, NOTIS-WP will bring each occurrence to your screen with the cursor positioned at its first character. You must then decide whether you wish to substitute or not. If you press the S key, the characters will be replaced. If you press any other key, NOTIS-WP will not make the substitution and will bring the next occurrence to the screen.

If you answer "Manual check" with N, NOTIS-WP will automatically replace (substitute) all the occurrences of the specified characters with the new characters.

### MARKING TEXT AREAS

In NOTIS-WP you can mark areas and then carry out operations on the marked areas. Eg., if you want to move a paragraph within your text, you first mark the paragraph (on the NOTIS terminal, this is done by placing the cursor within the paragraph and pressing the key marked PARA), and then position the cursor where you want to insert the paragraph, and then press the key marked MOVE.

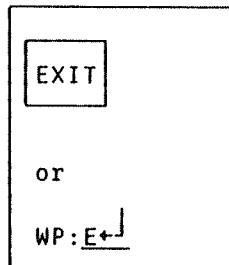
Marked areas can be DELETED, MOVED, COPIED or JUSTIFIED.

Other editing facilities of NOTIS-WP include:

- Splitting and rejoining of lines.
- Automatic underlining as you type or underlining of marked areas.

- Easy setting of borders and tabs.
- Left, right, centre or stretched justification.
- Letters with accents
- Facilities for decimal justification, arithmetic and sorting.
- Graphic, greek and mathematical character modes.
- Print directives can be used to specify certain formats, titles and headings.

**EXAMPLE 11: HOW TO EXIT FROM NOTIS-WP**



When you have finished your session in NOTIS-WP and stored your work, just press the EXIT key or give the Home command E to exit from NOTIS-WP and go back to SINTRAN III

For more information on the NOTIS-WP word processing system, see the manuals **INTRODUCTION TO NOTIS-WP ND-63.001** or **NOTIS-WP REFERENCE MANUAL - EDITOR ND-63.002**.

### 3.2 NOTIS-TF - THE TEXT FORMATTING SYSTEM

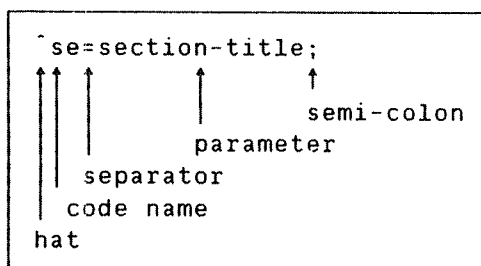
If you are not likely to use NOTIS-TF in your work, you may skip this section.

The text formatting system, NOTIS-TF, is closely related to NOTIS-WP. If you have created a document in NOTIS-WP, and you have included **DIRECTIVES**, you can run this document through NOTIS-TF, and NOTIS-TF will produce a formatted document with the same name, but with the file type :OUT.

Directives are specifications you include in the text to specify certain formats, headings, titles, trailers, etc.

A directive has the following format:

#### EXAMPLE 12: THE DIRECTIVE FORMAT



All directives must start with ^ (hat) and must end with ; (semi-colon). This is the way NOTIS-TF recognises a directive.

NOTIS-TF works in the following way: NOTIS-TF reads through the whole text document. Whenever it encounters a hat (^), it knows that this is the start of a directive. It then reads up to the separator (or the semi-colon if there are no parameters) to find out what the code name is (the code name tells the system which directive it is). It then reads up to the next separator (if there is more than one parameter) or to the semi-colon to find out what the parameter(s) are. NOTIS-TF has a description of all directives; it will carry out the directive in accordance with this definition, putting in the specified parameter values.

NOTIS-TF may be started in two ways:

- 1) When you are in NOTIS-WP, NOTIS-TF may be started by giving the home command "J":

The screenshot shows a command prompt in NOTIS-WP. The first line is 'WP:J' followed by a cursor. The second line is 'WP:Activate:NOTIS-TF-ENG CURRENT-FILENAME:TEXT' followed by a cursor. The entire screenshot is enclosed in a rectangular box.

When you press "J" followed by  $\uparrow$ , NOTIS-TF will respond by displaying "Activate:NOTIS-TF-ENG" followed by the name of the file you are currently editing in NOTIS-WP. Read the name to make sure this is the file you want to format and then press  $\uparrow$ . The formatting then starts. NOTIS-TF is now in control, and you will be guided by messages on the screen as the formatting goes along. When the formatting has been completed, the resulting formatted file (current-filename:OUT) will be displayed on the screen in INSPECT MODE. You cannot edit this document, you may only look at (inspect) it. If you want to make any changes, you must make them in the original text document and reformat the text. You call back the text document to the screen by pressing the T.

2) NOTIS-TF may also be started directly from SINTRAN III:

$\uparrow$ NOTIS-TF-ENG filename:text $\uparrow$

Let us have a look at an unformatted and formatted text: The short letter below includes a few directives:

$\uparrow$ VP=4; (vertical pitch)	means that the text will be printed with a line spacing of one and a half.
$\uparrow$ PI=3; (paragraph indentation)	means that each new paragraph is to be indented by 3 positions.
$\uparrow$ PS=3; (paragraph spacing)	means that the distance between each paragraph is to be 3 times the line spacing.
$\uparrow$ P;	means that a new paragraph is to be started.
$\uparrow$ BL=n;	means that a number of blank lines are to be inserted.
$\uparrow$ BL;	means that the rest of the line is to be blank.

### EXAMPLE 13: AN UNFORMATTED TEXT (:TEXT FILE)

$\uparrow$ VP=4; $\uparrow$ PI=3; $\uparrow$ PS=3;

Dear Sirs, $\uparrow$ P;Thank you for your interest in our text processing system NOTIS-WP. $\uparrow$ P;We shall be delighted to visit you at your convenience, and in the meantime we enclose the available brochures on the system. $\uparrow$ BL=4;Sincerely yours $\uparrow$ BL;for NORISK DATA A.S  
 $\uparrow$ BL=3;International Division

After formatting, it looks like this:

**EXAMPLE 14: A FORMATTED TEXT (:OUT FILE)**

Dear Sirs,

Thank you for your interest in our text processing  
system NOTIS-WP.

We shall be delighted to visit you at your  
convenience, and in the meantime we enclose the  
available brochures on the system.

Sincerely yours  
for NORISK DATA A.S

International Division

This manual is in itself an example of a formatted document. When writing it, we put in many directives to control section and chapter numbering, layout and numbering of examples, pagination, obtain special **TYPEFACES**, headers, trailers, produce a table of contents, an index, etc.

We will not describe the individual directives in this manual. For further information on how to use NOTIS-TF, see **NOTIS-TF REFERENCE MANUAL - FORMATTER ND-63.007**, and **NOTIS-TF MACRO GUIDE ND.63.009**.



### 3.3 INFORMATION RETRIEVAL - NOTIS-IR

If you are not likely to use NOTIS-IR in your work, you may skip this section.

With NOTIS-IR, you can record and store documents in the computer, and be able to find them easily and quickly. NOTIS-IR can be compared with a filing system, only it is so much faster to use and it is very easy to find exactly the piece of information you are looking for.

Below is a list of examples of the sort of tasks NOTIS-IR can do for you. Imagine how long it would take you to find the same information in a filing cabinet!

- Find all books in the library written by the author Ernest Hemingway which contain the words "matador", "Spain" or "bull" either in the title, the preface or the reference, and which were written during the period 1935-40.
- Make a list of all the songs by Elvis Presley which have the word "Love" in the title.
- Search the correspondence files for letters from S. Windel & Co. where the sender's reference is KKK, and to which we have never replied.
- Search the archives for articles published in the early seventies which refer to "Richard Nixon", "Watergate" and "wiretapping".

#### 3.3.1 How to start NOTIS-IR

You enter NOTIS-IR in the same way as all other subsystems or programs:

@NOTIS-IR←↓

You then come into NOTIS-IR, the cursor positioned after an "\*" in the upper left corner of the screen. This is the command position where all commands to the system must be given.

Type "H" or "?" followed by ←↓ to get a list of all the available commands on the screen.

In NOTIS-IR, all data is recorded and retrieved by means of FORMS. You can draw these forms yourself on the screen to correspond exactly with the forms, index cards, shelf or drawer system that your company or organization usually employs for the storage of information and documents. This is usually done once and for all by someone who knows the organization's routines, and we will not describe how to do it in this manual. But have a look in the NOTIS-IR User Guide to find out how simple it is!

### 3.3.2 How to record documents

Let us say that you want to enter some information, some documents, into the database (the storage) of NOTIS-IR. You give the command: (remember what you type in is underlined)

```
*ENTER-DOCUMENT↵ FORM NAME:FORM-NAME↵
```

After you have given the "ENTER-DOCUMENT" command followed by ↵, the system will prompt for "FORM NAME". You must type in the name of the form you want to enter documents with. The NOTIS-IR system supervisor may have defined several forms for recording different kinds of information.

An empty form will then be displayed on the screen, ready for you to fill in.

Let us say that you work in your firm's course department, and you want to enter information on a few new courses that have been designed.

#### **EXAMPLE 15: HOW TO CALL AN EMPTY FORM TO THE SCREEN**

```
*ENT-DOC↵ FORM NAME:COURSES
```

```
*** C O U R S E   D E S C R I P T I O N ***  
  
Course code:___ Title:  
  
Objectives:  
  
  
  
Duration:  
  
Designed for:  
  
Prerequisites:  
  
Contents:
```

Fig. 10. An empty NOTIS-IR form

The cursor is placed after "course code", waiting for you to fill in the relevant information. Terminate with `↵`, and the cursor will jump to the next field. Complete all the fields in the same way.

When you have completed the whole form, type `<W>` (CTRL + W), and the document will be stored in the system.

A new, empty form will then be displayed on the screen, and you can continue recording more documents.

When you have finished your work, give the command "EXIT" to go out of NOTIS-IR and back to SINTRAN III.

### 3.3.3 How to search for documents

At a later stage you may want to search for one document or a set of documents which satisfy certain criteria. The search procedure is very similar to the recording procedure described in the previous section.

Still referring to the "COURSES" example, example 15, let us say that you want to find out which courses you can offer for people who have no previous knowledge of your courses.

You must give the command

<code>*FIND-DOCUMENT↵</code>	<code>FORM-NAME:COURSES</code>
------------------------------	--------------------------------

An empty form is displayed on the screen, with the cursor in the first field. You bypass the five first fields by typing `↵` in each of them. In the field "Prerequisites" you type "none" (provided this is what you record when no prerequisite knowledge is required).

You then terminate with `<W>`, and NOTIS-IR will search for and display all the documents which satisfy the search criterion. If there is more than one document, you can look through them using the commands

NEXT-DOCUMENT (or +)  
PREVIOUS-DOCUMENT (or -)  
LAST-DOCUMENT (or /)  
FIRST-DOCUMENT (or :)

You can also express more complex search criteria by filling in several fields. If you want to find all the courses which require no prerequisite knowledge and last for less than a week and are about information retrieval, you may fill in the fields "duration" and "contents" as well.

It is possible to express even more complex search criteria by using a special search language, built up with operands and operators. With it, you can express criteria like

Find     A or B  
          A and B  
          A not B  
          greater than  
          greater than or equal to  
          less than or equal to  
          less than, etc.

#### 3.3.4 How to get document printouts

You can print out the documents in NOTIS-IR individually as they are shown on the screen. You can also get complete printouts of all documents found after a search, for all the documents in the database, or for all the documents recorded after the last update.

By specifying the printout in a REPORT FORM, you can:

- Rearrange fields differently than on the original storage form.
- Get printouts of reports in tabular form, ie., give the fields a constant maximum length in printouts.
- Sort printouts according to their contents in up to five specified fields.
- Specify the printout to the terminal, a printer or a SINTRAN file stored on the disk.
- Divide the report in pages. NOTIS-IR will automatically generate pages and print the page numbers in the righthand corner of each page.
- Specify a title text which will be left-justified on the top line. You can use this to identify the report, give the date, etc..
- Divide the report into two parts: one part which is repeated on every page ("heading"), and another part which is repeated on each document.

Use the command DEFINE-REPORT-FORM to define the format of the printout. (See NOTIS-IR User Guide for more details on how to do this.)

The following PRINT commands are available:

- 1) PRINT-DOCUMENT: Use this command to print out the document displayed on the screen.

- 2) PRINT-FOUND-DOCUMENTS: Use this command to print all the documents found in a search.
- 3) PRINT-ALL-DOCUMENTS: Use this command to print all the documents that have been recorded since the last update (a procedure carried out regularly by the NOTIS-IR supervisor).

For more information on NOTIS-IR see the

***NOTIS-IR USER GUIDE ND-63.005.***

### 3.4 THE QUERY LANGUAGE NOTIS-QL (ACCESS)

If you are not likely to use NOTIS-QL in your work, you may skip this section.

NOTIS-QL (also called ACCESS) is another "filing system" which is very simple to use. Whereas NOTIS-IR is great for finding information in larger documents and reports, NOTIS-QL is built for recording and finding information kept in a standard format. NOTIS-QL is great for keeping

- customer registers
- subscription lists
- inventories
- staff registers
- purchasing lists
- order lists
- etc.

NOTIS-QL is a "query by example" system, which means that you tell the system what you want to do by filling in a query in a table, but leave it to ACCESS to find out how.

Before you can start using the system, the NOTIS-QL supervisor must do some preparatory work. S/he must prepare and define the DATABASE(S) and the TABLES you use when running the system. You must also be registered in the system as an ACCESS user with your own user name.

A table might look like this:

NAME	MANAGER	SALARY	DEPT.
Jim Mills	Roger Keigh	10000	Sales
Tom Verlaine	Laurie Anderson	11640	Marketing
-	-	-	-
etc.			

Fig. 11. A typical ACCESS table

The table consists of ROWS and COLUMNS. Each row constitutes one RECORD. Each record has four FIELDS (corresponding to the four columns in the table). The record for employee Jim Mills tells us that Roger Keigh is his boss, he earns 10000 and works in the Sales department.

With ACCESS, you can display data on the screen, put in, delete or change the contents of the table.

### 3.4.1 Calling ACCESS

You call ACCESS the same way as any other program:

```
␣ACCESS+↵
```

The system will then ask for your ACCESS identification and a password if you have one. Type them in, and you enter the system, the cursor positioned in the command position, after an asterisk (\*) in the lower left corner of the screen.

Any time you press the HELP key (on non-NOTIS terminals give the command H), you will get a list of available commands with an explanation. NOTIS-QL is organised in levels with a unique set of commands on each level. The number of asterisks in the command position will tell you which level you are on (you enter on level \*, and the the highest level is \*\*\*).

Now you are ready to start using NOTIS-QL. Let us go through a simple example to get an idea of how the system works.

### 3.4.2 Defining queries

You want to enter the staff register of your company to find out which employees in the marketing department earn over 10000 a year, and you want to print out a list of these in order of increasing salary.

First you must give the command

```
*DEFINE-QUERY+↵
```

If you have access to several databases, these will be listed on the screen, and you must specify which one you want.

Next you must give the command

```
**NEW-TABLE-SKELETON+↵
```

NOTIS-QL will prompt for the skeleton name. In this case it is EMPLOYEES. A skeleton is an empty table, which now will be displayed on the screen:

EMPLOYEES	NAME	MANAGER	SALARY	DEPT.
→				

Now you are ready to fill in the skeleton, make a "query by example". You do this by filling in the skeleton with operators and/or selection criteria. If you type HELP or <G> while the cursor is positioned in any of the columns, you will get a list of available operators and selection criteria in that column.

The first column is the "table column". Anything filled in here affects the whole table. If you for instance type in "print." here, you will get all the information in the database printed out on the screen.

But in your case you are only interested in names and salaries, so you move on to the NAME column (use the → or →| key). Here you type in "print." because you want to have printed out a list of the relevant names. (Note the full stop - operators must be terminated with a full stop to distinguish them from selection criteria)

#### EXAMPLE 16: A FILLED IN TABLE (A QUERY DESCRIPTION) IN ACCESS

EMPLOYEES	NAME	MANAGER	SALARY	DEPT.
→	print.		print.asc. >10000	Marketing

You are not interested in "Manager" in this case so you skip to the SALARY column. Here you want to get a list of those salaries over 10000 printed in ascending order. "Print." and "asc." (note the abbreviation of "ascending.") are operators which tell the system what you want to do, and ">10000" is a selection criterion indicating which values you are interested in.

Then you move on to the last column, and type in the selection criterion "Marketing" to specify that this is the department you are interested in.

Now you have completed your query description, and you are ready to let NOTIS-QL execute your query.

. If you have a NOTIS terminal, just press the key marked





On a non-NOTIS terminal, press the Home key twice to get to command position, and give the command

\*\*RUN↵

NOTIS-QL will then search through the database and pick out all the records that correspond with your operators and selection criteria and display a result table on the screen.

NAME	SALARY
Malcolm Hope-stone	10009
Malcolm Worth	10504
Derek Peterson	10960
Judith Pryor	11005
etc.	

You want to get a paper copy of this list, and you want to print it out on a sheet with the heading EMPLOYEES IN MARKETING.

First you give the command

\*\*\*HEADING 'EMPLOYEES IN MARKETING'↵

Then you give the command

\*\*\*PRINTING PHILIPS.64

where "philips" is the name of the printer and "64" is the number of lines you want to have on each page (64 is suitable for A4 sheets).

You have now finished your job and want to go out of NOTIS-QL and back to SINTRAN III. Press the EXIT key (on non-NOTIS terminal the command EXIT) to go from level \*\*\* to \*\* and again to go to \* and again to get back to SINTRAN III.

You have now gone through one short example of what NOTIS-QL can do for you. This was a fairly simple job. The good thing about NOTIS-QL is that it is great both for simple jobs like this and more complicated tasks. We have only described a few of the facilities that are built into the system. Have a look at *ACCESS USER GUIDE ND-60.153* to find out what a powerful tool NOTIS-QL is.

#### 4 HANDLING FILES

Let us repeat some of the things you have learnt so far:

- Data is stored in the permanent storage area, which is usually a disk.
- The disk is divided into user areas designated to each user.
- Each user keeps his/her information on files which contain related information.

Here is some new information for you:

- Each user area occupies a certain amount of the total space available on the disk. This space is measured in units called **PAGES**. How many files you can store in your user area therefore depends on how big your user area is, and how big your files are (file size is also measured in pages).
- Files can have different **FILE TYPES**. This is a method which is used to identify what kind of information is stored on the different files. Eg., a file made with the word processing system NOTIS-WP will always have the file type :TEXT as default, and a file made with NOTIS-TF will always have the file type :OUT.
- Since a disk has a limited storage capacity, some large computer systems may have more than one permanent storage medium, (eg., two disks). Each permanent storage medium is normally referred to as a **DIRECTORY**.

Read more about data storage and files in section 7.7 on page 68.

##### 4.1 CREATING AND DELETING FILES

In section 3.1 you learnt how to create files directly from NOTIS-WP. Files can also be created directly from NOTIS-IR and NOTIS-QL and many other special programs. You can also create files directly with a SINTRAN command:

#### EXAMPLE 17: HOW TO CREATE A FILE

```
@CREATE-FILE↵  
FILE-NAME: LETTER-1:TEXT↵  
NUMBER OF PAGES: 1↵
```

- 1) Type the command name followed by ↵. The system will then prompt for FILE NAME. Here you must type in the name and the type of the file, followed by ↵. If you do not specify the type, the file will be given the default (standard) file type, which is :DATA. This is a file type which is used for different sorts of user data, a sort of a general file type.
- 2) The system will then prompt for NUMBER OF PAGES. Here you have two possibilities:
  - i) You can respond just with ↵. The file will then be an empty file, ie., it will expand itself automatically when you store something in it. This sort of file is called an **INDEXED** file. This is the most common and flexible way of doing it.
  - ii) You can specify a definite number of pages. The file will then have a fixed size and cannot be expanded automatically. When all the pages in such a file are used, you will get an error message (NO SUCH PAGE) if you try to store more data in that file. This sort of file is called a **CONTIGUOUS** file. (Read more about indexed and contiguous files later on page 68.)

Note that a file created with the CREATE-FILE command is EMPTY, ie., it does not contain any data until you actually STORE data in it.

If you usually use NOTIS-WP or another subsystem, you will probably not use the create-file command too often, but you will certainly need to know how to delete files.

Remember, your user area has limited space. It is therefore often necessary to delete old and obsolete files to make room for new ones:

### EXAMPLE 18: HOW TO DELETE FILES

```

@DELETE-FILE↵
FILE NAME: letter-1:text↵

```

When specifying the file name you want to delete, you must always give the file type, or the system will respond with the error message NO SUCH FILE NAME.

It is part of a good "file discipline" to delete files of the type :OUT. They occupy a lot of space, and it is unnecessary to keep them because they can always be regenerated by formatting the original text file once more (see section 3.2).

The best command to use in this case is

```
@DELETE-USERS-FILE↵  
FILE NAME: :OUT↵  
MANUAL CHECK: Y↵
```

- 1) The system will prompt for FILE NAME. Here you want to delete all :OUT-files, so you answer with :OUT, ie., you use the general SINTRAN III abbreviation principle previously described on page 12.
- 2) The system will then ask whether you want MANUAL CHECK. Here you have two possibilities:
  - i) Type N (for NO) followed by ↵. All the specified files (in this case all the :OUT-files) will be deleted.
  - ii) Type Y (for YES) followed by ↵ or just ↵. The system will then list all the specified files, one after the other, and you must type in Y or N to say whether you want the file to be deleted or not. **IT IS A GOOD RULE ALWAYS TO ANSWER Y TO MANUAL CHECK.**

It is also a part of good "file discipline" to have descriptive and easy-to-remember names for your files. To this end, you may therefore occasionally want to change the name of one or more of your files.

#### EXAMPLE 19: HOW TO RENAME FILES

```
@RENAME-FILE↵  
FILE NAME: letter-2:t↵  
NEW FILE NAME AND TYPE: item-letter:text↵
```

The command has two parameters. The FILE NAME can be abbreviated, whereas the NEW FILE NAME AND TYPE must be given in full.

#### 4.2 LISTING FILES AND THE COMPLETE FILE NAME FORMAT

We have already described the command LIST-FILES (see page 11).

The command

```

@LI-FI↵
FILE NAME: :TEXT↵
OUTPUT FILE: ↵

```

may for example produce a list like this on your terminal:

```

FILE 0: (DISK-1:HILDA)LETTER-1:TEXT;1
FILE 1: (DISK-1:HILDA)LETTER-2:TEXT;1
FILE 2: (DISK-1:HILDA)MINUTES:TEXT;1
FILE 3: (DISK-1:HILDA)ANN-REP:TEXT;1
etc.

```

- 1) The first part of the complete file name gives you the directory name [DISK-1].
- 2) The second part gives you the user name [HILDA]. Note that the directory and user names are separated by a colon [:], and that they are enclosed in parentheses.
- 3) The third part is the actual name you gave to the file [LETTER-1].
- 4) The fourth part is the file type [:TEXT] (see also page 69).
- 5) The fifth and least important part is the version number [;1]. It is possible to have several versions of a file. You will probably not use this facility very often, so at this stage you can ignore this part of the information.

#### EXAMPLE 20: THE FILE NAME FORMAT

```
(DIRECTORY-NAME:USER-NAME)FILE-NAME:TYPE;VERSION NO.
```

You now know enough to be able to list other users' files.

Let us say that all the users of your computer share a common user area where you keep information which is of general interest to everybody. This common user may for instance be called COMMON.

To list all the files of user COMMON, give the following command (when you are logged in under your own user name):

**EXAMPLE 21: HOW TO LIST OTHER USER'S FILES**

```
@LI-FI↵  
FILE NAME: (COMMON)↵  
OUTPUT FILE:↵
```

Note the parentheses. They are used to indicate that COMMON is a user name. Without them, you would get a list of all your own files beginning with the letters COMMON.

**4.3 COPYING FILES**

It is useful to be able to copy files, either because you want to get hold of information contained in them, or you want to make copies to put in your own floppy disk library (read about that in chapter 6 beginning on page 51).

**EXAMPLE 22: HOW TO COPY A FILE**

```
@COPY-FILE↵  
DESTINATION FILE: "FILE-NAME-1.TEXT"↵  
SOURCE FILE: FILE-NAME-2.TEXT↵
```

This command has two parameters.

- 1) First the system will prompt for DESTINATION FILE. This is the file you want to copy to. If this is a new file, ie., it does not already exist, you must enclose the file name in double quotes. The system will then create the file.

**IF THE DESTINATION FILE ALREADY EXISTS, REMEMBER THAT ANY EXISTING CONTENTS OF THAT FILE WILL BE OVER-WRITTEN WHEN YOU COPY.** You should therefore **ALWAYS** prompt for the parameters when you use this command, to make sure that you get the source and destination file right.

- 2) The second parameter is SOURCE FILE, which is the file you copy from. You can abbreviate this name, but the file type must always be indicated.

Quite often you may want to copy files from other users. It might for instance be that you want to include an item list in a letter, and this item list resides under the common user COMMON.

**EXAMPLE 23: HOW TO COPY FILES FROM OTHER USERS**

```
@COP-FI↵  
DESTINATION FILE: "ITEM-LIST:TEXT"↵  
SOURCE FILE: (COMMON)ITEM-LIST:T↵
```

Here you are copying the contents of the file ITEM-LIST:TEXT residing under user COMMON to the new file ITEM-LIST:TEXT under your own user area.

Note that you cannot normally copy from your own user area to another user area. You are not allowed to change the contents of another user area without special permission. Read more about this later in the section on "file access" (section 7.1 on page 61).

## **5 PRINTING INFORMATION**

### **5.1 PERIPHERAL FILES**

The files we have been describing so far are called **MASS STORAGE FILES**, ie., files stored on a **MASS STORAGE MEDIUM** (= permanent storage medium = disk or floppy disk).

Seen from the system's point of view, however, the different printers and terminals and other external equipment are also files, **PERIPHERAL FILES** or **PERIPHERAL DEVICES**.

As you have seen in examples earlier, a peripheral file (eg., the terminal or a printer) is the **OUTPUT FILE** in many commands.

### **5.2 DIFFERENT PRINTERS**

An ND computer system may have one or more printers connected to it. The most common printer types are **LINE-PRINTER**, **DIABLO** and the **PHILIPS GP300L**. Each printer is a peripheral file with a unique name. Ask your system supervisor for the printer names on your system.

The **LINE-PRINTER** is a fast printer. It is typically used for preliminary documents and listings which do not require a high print quality.

The **PHILIPS** printer is a slower printer, but with a much better print quality. Its advantage is that speed and print quality can be varied according to what kind of output you want. Another great advantage of the **PHILIPS** is that it has several different typefaces (fonts). This manual is printed on a **PHILIPS** printer.

For letters and other documents which require very high print quality there is the **DIABLO**. It is the slowest of the printers, but it gives typewriter quality print.

### **5.3 PRINTING FILES**

If you are working in **NOTIS-WP** or **NOTIS-TF** or any of the other standard ND programs, you should always use their special **PRINT** or **COPY** command to print files directly on the desired printer.

When you print out files on the printers you use the **SPOOLING SYSTEM**. This system is an integrated part of the operating system.

The spooling system puts all the files that are sent to the printer in a queue. This means that you do not have to worry whether the printer is busy or not when you send a file to it. A copy of your file will be placed at the end of the queue and printed out automatically when the other files are finished.



You may occasionally want to stop the print in the middle of the printout, eg., because there is something wrong with the paper in the printer. Most printers have a panel with buttons for stopping the printer temporarily and restarting it, and all printers stop automatically when they run out of paper.

You can also stop and start printers with SINTRAN commands.

```
@STOP-PRINT+↵  
PERIPHERAL FILE NAME: PHILIPS+↵
```

This command will temporarily stop the printout on the PHILIPS printer. This command must always be followed by the START-PRINT or RESTART-PRINT command described below. If not, the printer will be occupied and cannot be used by other users.

```
@START-PRINT+↵  
PERIPHERAL FILE NAME: PHILIPS+↵
```

This command will restart the the printout after a temporary stop from the point where it stopped.

```
@RESTART-PRINT+↵  
PERIPHERAL FILE NAME: PHILIPS+↵
```

This command will restart the printout from the beginning again.

```
@ABORT-PRINT+↵  
PERIPHERAL FILE NAME: PHILIPS+↵
```

This command will stop the printout altogether, abort it, which means that it will be removed from the spooling queue. You cannot use the commands START-PRINT or RESTART-PRINT after having used ABORT-PRINT, you must send the file to the spooling queue once more.

You can only stop, start, restart and abort printouts of your own files. This way you will not risk that someone comes along and just aborts your printout because s/he wants the printer.

There are also some commands for adjusting the printout. This is useful if the paper crashes and the last pages or lines printed cannot be read. You can specify either number of pages or number of lines, whichever suits you best.

```
@BACKSPACE-PRINT↵  
PERIPHERAL FILE NAME: LINE-PRI↵  
NUMBER-OF-PAGES: 2↵  
NUMBER-OF-LINES: ↵
```

In this example the command will cause the two last pages that were printed on the line-printer to be printed once again.

There is also a corresponding command to skip printing of a specified number of pages or lines:

```
@FORWARD-SPACE-PRINT↵  
PERIPHERAL FILE NAME: LINE-PRI↵  
NUMBER-OF-PAGES: 2↵  
NUMBER-OF-LINES: ↵
```

The command LIST-SPOOLING-QUEUE is very useful:

```
@LIST-SPOOLING-QUEUE↵  
PERIPHERAL FILE NAME: LINE-PRI↵  
OUTPUT FILE: ↵
```

The spooling queue of the line-printer will in this case be listed on the terminal. You will get information on which file is currently being printed, how much there is left to print, and which other files are waiting in the queue. It may for example look like this:

```
FILE CURRENTLY BEING PRINTED ON: PHILIPS;;1  
PHILIPS;;8 , LAST USED BY HILDA , 1 COPY LEFT  
APPROX. 7465 BYTES LEFT TO PRINT
```

```
PHILIPS;;9 , LAST USED BY JANICE-IAN , 1 COPY  
1688 BYTES IN FILE
```

If you have sent something to the spooling queue, and you find out that you do not want to print it after all, you can give the command

```
@REMOVE-FROM-SPOOLING-QUEUE↵  
PERIPHERAL FILE NAME: LINE-PRI↵  
FILE NAME: PHILIPS;;9↵
```

Note that PHILIPS;;9 is not the actual name of your file. When you send a file to the spooling queue, what happens is that it is copied to one of 10 (usually) spooling files which are part of the spooling system. It is this file that you remove from the queue.

You can only remove files from the spooling queue which belong to you.

For more complete information on printing information, see the **SINTRAN III TIMESHARING GUIDE**.

## **6 USING FLOPPY DISKS**

We mentioned earlier that your user area may not be big enough to store all your files, and in that case you could copy some of your oldest and least used files onto floppy disks.

It is also a good idea to have safety copies ("back-ups") of your most important files.

In this way you can build up a "floppy disk library" where you keep copies of your files.

A **FLOPPY DISK** is a small flexible disk, about the size of a 45 r.p.m. record. You insert it into the computer and then you can copy files to and from it.

We recommend that you read this whole chapter through once before you start copying to or from a floppy disk.

### **6.1 HOW TO STORE FILES ON A FLOPPY DISK**

Let us say that you want to store the file ANN-REP-81:TEXT on a floppy disk because you do not really need it any more and you want to make room for new files on the disk.

- 1) A floppy disk has limited storing capacity. It usually takes 148 pages (computer "pages", see pages 41 and 68). The first thing to do is therefore to make sure that ANN-REP-81:T will fit in on one floppy.

Give the command

```
QFILE-STATISTICS↵  
FILE NAME: ANN-REP-81:T↵  
OUTPUT FILE: ↵
```

This command will give you various bits of information on the status of the file (see page 64). The important piece of information for you is the number of pages. If it is less than 148, the file will fit in on the floppy disk. (It is a good rule not to work with files which are too big. Most normal sized files will be less than 148 pages).

- 2) The next thing to do is to insert your floppy disk into the FLOPPY DISK UNIT. The floppy disk unit is an horizontal slot which is usually on the front of the computer cabinet itself. It has a door with a button with a little lamp on it. You press this button to open the door. Normally the door should be open if the drive is not in use. If the door is closed,

**MAKE SURE THAT NO-ONE IS USING THE FLOPPY DISK UNIT BEFORE YOU OPEN IT!**

If the little lamp goes on and off, it means that someone is using the unit. If you are in doubt, you can give the command

```
@LIST-DIRECTORIES-ENTERED↵
DIRECTORY NAME: ↵
OUTPUT FILE: ↵
```

This produces a list of all the storage media that are active, for instance like this:

```
DIR INDEX 1 : DISC-2-75MB-1 UNIT 0 SUBUNIT 0 : PACK-ONE
DIR INDEX 2 : DISC-2-75MB-1 UNIT 1 SUBUNIT 1 : PACK-TWO-685
DIR INDEX 3 : FLOPPY-DISC-1 UNIT 0 : NOTIS
```

If the list includes the words FLOPPY-DISC like the one above, you may assume that someone is using the floppy disk unit, and it is very important that you **DO NOT OPEN** the door. If you do, the whole system may stop.

Insert the floppy disk as shown in figure 12.

- a) Open the floppy disk unit door.
- b) Insert the floppy disk.
- c) Close the door

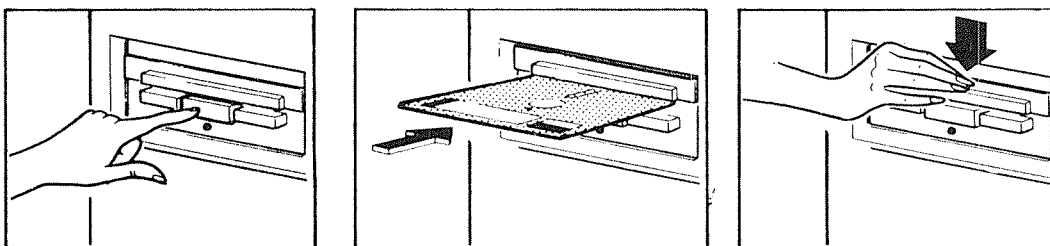


Fig. 12. How to insert a floppy disk

You are now ready to start giving commands.

If your terminal is a long way away from the computer, there is usually a terminal or a CONSOLE near the computer which you can use. A console is a paper copy terminal.

- 3) If you are using an ND preformatted floppy disk, the first thing you have to do now is to create a directory on the floppy. A floppy disk is a mass storage medium like the disk, and it must have a directory name before it can be used.

```
QCREATE-DIRECTORY↵
DIRECTORY NAME: ANNUAL↵
DEVICE NAME: FLOPPY-DISC-1↵
DEVICE UNIT: 0↵
BIT FILE ADDRESS: ↵
```

The command has four parameters:

- i) First you will be asked for DIRECTORY NAME. Make up one, preferably one which is related to the contents of the file. Remember that you cannot abbreviate here, since this is the first time you specify the name.
- ii) Then you are asked for DEVICE NAME. This is a unique name for the floppy disk controller. Standard names are FLOPPY-DISC-1 and FLOPPY-DISC-2. Ask your system supervisor for the correct name on your computer.
- iii) You are then asked for DEVICE UNIT. Some computers have two units, and the unit number is usually marked on the units (normally 0 or 1). Ask your system supervisor if you are not sure.
- iv) You are then asked for BIT-FILE-ADDRESS. It is not important to know what this means at this stage. You should always respond with ↵ here.

The system will now start creating the directory. This may take some time, perhaps half a minute or a minute. You can see that the system is working by the red light which goes on and off on the door of the floppy disk unit. When the light goes off and the "Q" once again is displayed on the terminal, the operation is finished.

- 4) The next thing you have to do is to enter this directory into SINTRAN III:

```

@ENTER-DIRECTORY↵
DIRECTORY NAME: ANNUAL↵
DEVICE NAME: FLOPPY-DISK-1↵
DEVICE UNIT: 0↵

```

The parameters here are the same as the first parameters of the CREATE-DIRECTORY command.

- 5) Next you must create a user on this floppy disk.

```

@CREATE-USER↵
USER NAME: ANNUAL:FLOPPY-USER↵

```

Here you have to specify the whole user name, ie., specify that the user is on the directory ANNUAL. You do this by typing ANNUAL: in front of the actual user name.

Here we have used the user name FLOPPY-USER. The user name on a floppy disk must be known to the computer. FLOPPY-USER is a standard user which exists on most ND computer installations. This means that by using this name, it is easy to transfer files between different installations. We recommend using this as a standard. However, if you copy files only for personal use, you may find it easier to use your own user name.

- 6) You must then give the command

```

@GIVE-USER-SPACE↵
USER NAME: ANNUAL:FLOPPY-USER↵
NUMBER OF PAGES: 148↵

```

In this example you want user FLOPPY-USER to "own" the whole floppy disk, so you give him the maximum number of pages (148).

- 7) The floppy disk is now ready for the actual copying process. Give the command

```

@COPY-FILE↵
DESTINATION FILE: "(ANNUAL:FLOPPY-USER)ANN-REP-81:TEXT"↵
SOURCE FILE: (YOUR-OWN-USERNAME)ANN-REP-81:TEXT↵

```

- i) The destination file is a new file, so the whole file name must be enclosed in double quotes.

You must specify that the new file is going to be created on directory ANNUAL with FLOPPY-USER as owner: <(ANNUAL:FLOPPY-USER)>.

- ii) You must specify that the source file is residing under user YOUR-OWN-USERNAME <(YOUR-OWN-USERNAME)>.

- 8) The file should now be copied on to the floppy disk. You can confirm this by giving the command

```
@LI-FI+  
FILE NAME: (ANNUAL:F-U)+  
OUTPUT FILE: +
```

This will give you a list of all the files on the floppy disk.

- 9) Before you can take out the floppy disk you must release the directory from SINTRAN III. **THIS IS VERY IMPORTANT!**

```
@RELEASE-DIRECTORY+  
DIRECTORY NAME: ANNUAL+
```

- 10) Remember to mark your floppy disk clearly with DIRECTORY NAME, USER NAME and FILE NAMES.
- 11) You can now delete the original file in your user area, and the operation is complete.

The method we have described on the previous pages is good when you have only one file to copy. There is another more efficient method for copying more than one file onto a floppy, which saves you the work of having to give the COPY-FILE command several times.

Let us say that this time you have a number of smaller files, called LETTER-1:TEXT, LETTER-2:TEXT, etc, which you want to copy onto a floppy disk.

- 1) The method for creating and entering the directory, creating the user and giving user space is exactly the same as described previously. So is the RELEASE-DIRECTORY command after copying.
- 2) Instead of giving the COPY-FILE command, you may now enter the **BACKUP-SYSTEM**.



**EXAMPLE 24: HOW TO COPY FILES WITH THE BACKUP-SYSTEM**

```

@BACKUP-SYSTEM↵
BA-SY: COPY-USERS-FILES↵
DESTINATION TYPE: DIR↵
DEST.DIRECTORY-NAME /PACK-ONE/: LETTERS↵
DEST.USER NAME /YOUR-OWN-USERNAME/: FLOPPY-USER↵
SOURCE TYPE: DIR↵
SOURCE DIRECTORY NAME /PACK-ONE/: ↵
SOURCE USER NAME /YOUR-OWN-USERNAME/;; ↵
SOURCE FILE NAME: LETTER↵
MANUAL CHECK: Y↵

FILE 1: (PACK-ONE:YOUR-OWN-USERNAME)LETTER-1:TEXT;1
INDEXED FILE      5 PAGES                ?Y↵

etc.

BA-SY: EXIT↵

```

- i) When you enter the BACKUP-SYSTEM, it responds by writing BA-SY:. You then give the command COPY-USERS-FILES.
- ii) The system then asks for DESTINATION TYPE, and you answer with DIR because you are going to copy to a directory.
- iii) The system then asks for DESTINATION DIRECTORY NAME and suggests the default directory name PACK-ONE. But you want to copy to the directory LETTERS on your floppy disk.
- iv) The system then asks for DESTINATION USER NAME and suggests YOUR-OWN-USERNAME as default, but you answer FLOPPY-USER, because that is the user on the floppy disk.
- v) You must then answer the same questions for SOURCE. The SOURCE TYPE is directory, so you type DIR.
- vi) The source directory name is DISK-ONE, so you answer that question with ↵.
- vii) The source user name is YOUR-OWN-USERNAME, hence only ↵.

viii) The system now asks for SOURCE FILE NAME. All the files you want to copy are called "letter" and something, so you type LETTER.

ix) You are then asked whether you want MANUAL CHECK or not. You suspect that you may have several files beginning with "letter", so you answer Y for YES. (The other choices you have are N for NO, which will copy all the files automatically, and L for LIST which will copy all the files and list the names of the copied files on the terminal.) All the files beginning with "letter" will then be listed on the terminal, one after the other, and you must answer Y or N after each of them to say whether you want to copy them or not.

x) When all the files have been listed and copied, the BA-SY is displayed again, and you type EXIT to get back to SINTRAN III.

At this stage, after all the files have been copied, and before you release the directory, you may want to check that the floppy disk really contains the files you have copied to it.

#### EXAMPLE 25: HOW TO LIST THE FILES ON A FLOPPY DISK

```
QLIST-FILE↵  
FILE NAME: (LETTERS:F-U)↵  
OUTPUT FILE:↵
```

#### 6.2 RETRIEVING FILES FROM A FLOPPY DISK

The procedure for copying a file from a floppy disk to your own user area is very similar to the one described in the previous section. This time the copying goes the opposite way, so the important thing is to be clear on what is the source file and what is the destination file.

This time you do not have to create a directory and a user, because they already exist on the floppy disk. ***IF YOU DO CREATE A DIRECTORY ON A FLOPPY DISK WHICH ALREADY CONTAINS FILES***

Also note that you must normally be logged in under your own user name to be able to copy files to your own user area.

You insert the floppy disk and execute the following commands (the same example as on page 51, only the opposite direction):

1)

```

@ENTER-DIRECTORY↵
DIRECTORY NAME: ANNUAL↵
DEVICE NAME: FLOPPY-DISC-1↵
DEVICE UNIT: 0↵

```

2)

```

@COPY-FILE↵
DESTINATION FILE: "ANN-REP-81:TEXT"↵
SOURCE FILE: (ANNUAL:F-U)ANN-REP-81:TEXT↵

```

or

```

@BACKUP-SYSTEM↵
BA-SY: COPY-USERS-FILES↵
DESTINATION TYPE: DIR↵
DEST.DIRECTORY-NAME /PACK-ONE/:↵
DEST.USER NAME /YOUR-OWN-USERNAME/:↵
SOURCE TYPE: DIR↵
SOURCE DIRECTORY NAME /PACK-ONE/: ANNUAL↵
SOURCE USER NAME /YOUR-OWN-USERNAME/: F-U↵
SOURCE FILE NAME: ANN-REP↵
MANUAL CHECK: Y↵
FILE 1: (ANNUAL:FLOPPY-USER)ANN-REP-81:TEXT:1
INDEXED FILE      5 PAGES                ?Y↵
etc.
BA-SY: EXIT↵

```

3)

```

@LIST-FILES↵
FILE NAME: ANN-REP↵
OUTPUT FILE:↵

```

4)

<p><u>@RELEASE-DIRECTORY</u>↵</p> <p>DIRECTORY NAME: <u>ANNUAL</u>↵</p>
---



## 7 OTHER SINTRAN COMMANDS AND FACILITIES

### 7.1 FILE ACCESS AND FRIENDS

Different users usually have different access rights to other users' files. For instance, you cannot normally change the files of another user, in the same way as other users cannot meddle with your files. However, you are normally allowed to read other users' files, unless they are specifically protected. If you have files that you do not want other people to read or do anything with, it is easy to protect them from such unauthorized use.

The different kinds of access rights permitted to a file are:

**N**:No access permitted

**R**:Read access permitted.

**W**:Write access permitted, ie., you may change the contents of the file.

**A**:Append access permitted, ie., you may add information at the end of the file.

**C**:Common access permitted, ie., more than one user may access the file at the same time.

**D**:Directory access permitted, ie., you may delete or copy the file.

Normally other users have only READ access to your files, whereas you have all rights (RWACD).

If you want to give some users special access rights to your files, you can create them as **FRIENDS**. Friends have as default READ, WRITE and APPEND (RWA) access to your files.

Let us say, for instance, that you are working with your colleague on a confidential report that no-one else should read before it is published. (Isn't this exciting!)

You are responsible for the writing, but you want your colleague to read it and make corrections or do whatever s/he finds suitable. You give the command

<pre>@CREATE-FRIEND↵ FRIEND NAME: FRIEND-USERNAME↵</pre>
--

You want your friend to have full access rights, so you must set the file access for the file:

```

@SET-FILE-ACCESS↵
FILE NAME: REPORT:TEXT↵
PUBLIC ACCESS (R,W,A,C,D in combinations or N): N↵
FRIEND ACCESS (R,W,A,C,D in combinations or N): RWACD↵
OWN ACCESS (R,W,A,C,D in combinations or N): RWACD↵

```

The system first asks for FILE NAME, and then for PUBLIC ACCESS. Here you must define what kind of access rights all the other users are to have. The default access right for public users is R, but in this case you want to protect your file from any potential "peeping Toms", so you set the file access to N for NO ACCESS.

You want your colleague (FRIEND) to have full access rights, ie., s/he can do whatever s/he wants with the file. Note that you type RWACD without commas or other separators.

Naturally, you give yourself full access rights, too.

You may have created other friends at an earlier stage. The command

```

@LIST-FRIENDS↵
FRIEND NAME: ↵
OUTPUT FILE: ↵

```

will give you a list of all defined friends and their access rights. All your friends will now have full access to your confidential file. If you only want your colleague to have it, you must delete the other friends (or change their access rights):

```

@DELETE-FRIEND↵
FRIEND NAME: OTHER-FRIEND'S-USERNAME↵

```

You must give the command for each friend you want to delete.

You can also set a standard file access on all your new files different from the system default, eg.:

```
@SET-DEFAULT-FILE-ACCESS↵  
PUBLIC ACCESS (R,W,A,C,D in combinations or N):N↵  
FRIEND ACCESS (R,W,A,C,D in combinations or N):R↵  
OWN ACCESS (R,W,A,C,D in combinations or N):RWACD↵
```

Note that this will not change the access rights on already existing files.

You can also give all your friends a general access to all your files, eg.:

```
@SET-FRIEND-ACCESS↵  
FRIEND NAME: ↵  
ACCESS: R↵
```

## 7.2 THE HELP COMMAND

Use the command **HELP** if you forget the exact name of a command. Enter the part of the name you remember as the first parameter, eg.:

```
@HELP↵  
COMMAND:-FRIEND↵  
OUTPUT FILE: ↵
```

and you will get a list of all command names which match, in this case:

```
CREATE-FRIEND  
DELETE-FRIEND  
SET-FRIEND-ACCESS  
LIST-FRIENDS
```

## 7.3 SOME OTHER COMMANDS

Should you need to know the date and time, the command

```
@DATCL↵
```

lists them on the terminal

```
10.36.10 24 AUGUST 1983
```



If you want to know how much computer time you have used and the length of time since you logged in, give the command

```
@TIME-USED↵
```

```
TIME USED IS 1 MINS 3 SECS OUT OF 75 MINS 26 SECS
```

You have already seen that the FILE STATISTICS command can be quite useful (see the description of how to use floppy disks on page 51).

```
@FILE-STATISTICS↵  
FILE NAME: letter-1:text↵  
OUTPUT-FILE: ↵
```

This will give you statistical information on your file LETTER-1:TEXT. You may also type in an abbreviation which matches a few file names. The result of this command may for instance look like this:

```
FILE 23: (DISK-ONE:OWN-USERNAME)LETTER-1:TEXT;1  
(INDEXED FILE)  
PUBLIC ACCESS: READ  
FRIEND ACCESS: READ,WRITE,APPEND  
OWN ACCESS: READ,WRITE,APPEND,COMMON,DIRECTORY  
OPENED 4 TIMES  
CREATED 09.43.18 AUGUST 26, 1983  
OPENED FOR WRITE 11.12.27 AUGUST 27,1983  
2 PAGES, 2114 BYTES IN FILE
```

Read about "INDEXED FILES" and "BYTES" in section 7.7 on page 68.

This is also a very useful command:

```
@USER-STATISTICS↵  
USER NAME:YOUR-OWN-USERNAME↵  
OUTPUT FILE:↵
```

This gives you information on your own user area, the most useful being how many pages you have used out of the total number of pages. You often use this command in conjunction with the LIST-FILES command. If the USER-STATISTICS command tells you that you have not got very much space left in your user area, you will give the LIST-FILES command to find out which files you can delete to make more room.

The command

```
QLIST-USERS↵  
USER NAME: ↵  
OUTPUT FILE: ↵
```

gives you a list of all the users registered in the computer. This can also be used to list all the users created on a floppy disk.

Some commands may produce quite long lists of output on your screen, and these are difficult to read because they go by too fast.

The command to use in this case is

```
QTERMINAL-MODE↵  
CAPITAL LETTERS? ↵  
DELAY AFTER CR? ↵  
STOP ON FULL PAGE? Y↵  
LOGOUT ON MISSING CHARACTER? ↵
```

Just answer ↵ after the two first prompts, then "Y" (YES) after STOP ON FULL PAGE, and ↵ after the last prompt.

Lists output on the terminal will now stop when the screen is full, and you must press the down-arrow to scroll further down in the list.

#### 7.4 THE USE OF MODE FILES

If you have a special sequence of commands which you repeat often, it is possible to simplify this routine work by creating a **MODE FILE**.

This is a file which contains a list of the commands you would normally enter at the terminal every time you wish to execute this sequence of commands.

To create a mode file, you enter an editor (preferably not NOTIS-WP, since a mode file must be a 7-bit file. NOTIS-WP files are normally 16-bit) and type Q followed by the commands you want to execute, one after the other, and you create the file and give it a name as with any other file.

Let us say that every day before you go home you want to delete all the :OUT files created during the day, find out how many pages you have left in your user area, and how much time you have used.

You may then enter NOTIS-WP, type in the following and store it in a file called for instance END:MODE. (Note the :MODE. It is a good rule to give all your mode files the type :MODE.)

**EXAMPLE 26: THE CONTENTS OF A MODE FILE**

```

@DELETE-USERS-FILES :OUT,N
@USER-STATISTICS MY-OWN-USERNAME..
@TERMINAL-MODE ...Y.
@LIST-FILES...

```

You then simply give the following SINTRAN III command:

**EXAMPLE 27: HOW TO EXECUTE A MODE FILE**

```

@MODE↵
INPUT FILE: END:M↵
OUTPUT FILE: ↵

```

All the commands in the file will be executed one after the other.

Note that all the commands must be typed in with a "@" in front of them, and all parameters must be included on one line.

**7.5 MAIL**

SINTRAN III has a "mailing system" which enables users to send messages to each other.

The system supervisor frequently uses this to send messages to all the terminals, eg., of the kind

"PLEASE LOG OUT. BACKUP IN 5 MINUTES"

If you receive a message like this, it will have no influence on what you are currently doing. It will NOT ruin your text or interfere with your work in any way. Just read the message, store your work and log out.

There are four types of messages:

- 1) A **DIRECT BROADCAST** is the type of message which is described above, going out to all terminals at the same time. This is reserved for the system supervisor.
- 2) A **BROADCAST** goes out to all users, but is saved in a "mailbox". If you have received a broadcast, and you try to log in or out, the following will appear on your screen: YOU HAVE MAIL. This is reserved for the system supervisor.

- 3) A **DIRECT MESSAGE** appears on the receiver's screen immediately when you send it. You can only send a direct message to one user at a time.
- 4) **MESSAGES** are saved in a "mailbox". If you have received a message, and you try to log in or log out, the following will appear on your screen: YOU HAVE MAIL. You can only send a message to one user at a time.

**EXAMPLE 28: HOW TO READ A MESSAGE OR BROADCAST RECEIVED IN THE "MAIL"**

```
@MAIL↵
OUTPUT FILE: ↵

This is a message

*EXIT↵
```

The message will be displayed on the screen after you have requested the terminal as the OUTPUT FILE. The message is followed by an \* (asterisk), after which you must type EXIT to return to SINTRAN III

You can also send messages to other users:

**EXAMPLE 29: HOW TO SEND A MESSAGE TO ANOTHER USER**

```
@MAIL↵
*SEND-MESSAGE↵
TO USER: SUSY↵
TYPE YOUR MESSAGE, FOLLOWED BY CONTROL L:
WHAT ARE YOU DOING THIS WEEK-END? <L>

*EXIT↵
```

Control L <L> means you must press the L key while at the same time pressing the CTRL key.

User SUSY will receive this message when she tries to log in or out.

You can also send direct messages to other users. This time you will be asked for terminal number instead of user name. Use the command WHO-IS-ON to find the terminal number of the user you want to send a direct message to.

**EXAMPLE 30: HOW TO SEND A DIRECT MESSAGE TO ANOTHER USER**

```
@MAIL↵
*SEND-DIRECT-MESSAGE↵
TO TERMINAL NUMBER:46
TYPE YOUR MESSAGE, FOLLOWED BY CONTROL L:

TIME FOR LUNCH! <L>

*EXIT↵
```

**7.6 SINTRAN USER CATEGORIES**

Everything described in this manual so far applies to **TIMESHARING** users, i.e., ordinary users who communicate with the computer via a terminal.

There are also **BATCH** users. Instead of entering commands and data at a terminal, these users define all input in advance as a file (or in some cases a card deck). The job can be run independently of any terminal or user interaction; it is controlled by a batch processor.

The **REALTIME** user (RT) has access to some special SINTRAN commands, of which the most important is the RT command. This starts execution of a realtime process, i.e., a process carrying out time-critical work, either requiring rapid processing, periodic or time-dependent execution.

User **SYSTEM** is also a special user. (The system supervisor should be the only one who knows the password). User SYSTEM has several privileged commands available and can do such things as allocate disk space, create and delete users and update the operating system.

**7.7 MORE ABOUT FILE ORGANIZATION**

We have already explained that a disk is divided into user areas where each user keeps his/her files, and that each user area has a certain number of pages.

To give you an idea of what a page is: A **PAGE** consists of 1024 **WORDS**, a word consists of 2 **BYTES**, each byte can contain one **CHARACTER** (e.g., a letter, a digit or a punctuation mark). Thus, in a page there is room for 2048 characters. For comparison, a normal A4 typed sheet would contain approximately 1400-1500 characters. It is the responsibility of the system supervisor to allocate disk pages to the different users.

The term page is rather deceptive since these storage units may be scattered around the disk. When the pages are distributed around the disk, one page is kept as an index to all the other pages. Files stored by this method are called **INDEXED** files. This is the kind of file you get when you create a file without specifying the number of pages (see the CREATE-FILE command on page 41).

It is also possible to hold files on **CONTIGUOUS** pages. This is the file you get when you create a file and specify the number of pages (see page 41). This is not normally used by time-sharing users.

Whether a file is indexed or contiguous has nothing to do with the internal structure of the file; the difference is the way physical allocation of new pages takes place. A contiguous file has a fixed number of pages allocated to it. This means that you must estimate the maximum size of the file when you create it. An indexed file has no fixed size and is expanded when necessary. SINTRAN III simply finds a free page in the user's area for the new page. The only limitation is that you have enough free pages in your allocation.

#### 7.7.1 Different file types

We have already mentioned that files can have different file types (see example 20 on page 44). Here are some common types and their uses:

**:TEXT** All files created using the NOTIS-WP word processing system will be of type :TEXT.

**:OUT** All files formatted with the NOTIS-TF text formatting system will be of type :OUT.

**:PROG** This type is used for files containing programs which can be started by entering the program name after "@".

**:SYMB** This file type is used by programmers, eg., when they create programs using the PED program editor.

**:DATA** This type is used for different kinds of user data.

Read more about SINTRAN III in the **SINTRAN-III TIMESHARING GUIDE**



A P P E N D I X A

HOW TO PROGRAM THE PUSH-KEYS ON YOUR TDV 2200/9 NOTIS TERMINAL





The brown keys on your keyboard marked P1....P8 are so-called **PUSH-KEYS**. They can be programmed to contain different commands and series of keystrokes which you use often. For instance, if you give the command USER-STATISTICS quite often, you can program one of your push-keys to contain this command. Thereafter you only have to press this single key every time you want to give the command.

This is how you do it:

- 1) Hold down the CTRL key and press the HELP key twice.

**CTRL + HELP + HELP**

- 2) A CONFIGURATION MENU will then be displayed on the screen, like the one below:

```
TDV 2200/9

Rev. Lev. 10 /nintv1

C O N F I G U R A T I O N M E N U

Convenience Switches
Function Switches
Communication Switches
PUSH-keys
Tabulation Rack

Selection: Cursor up and down keys
Enter: ENTER key   Exit: ESC key
```

You may ignore the information at the top.

The line "Convenience Switches" (underlined here) will stand out in inverse video, dark letters against a lighted background.

- 3) You move the inverse video field up and down with the up-arrow and down-arrow keys respectively. You are interested in PUSH-keys, so press the down-arrow three times to move the inverse video field to PUSH-keys.
- 4) Then press the **ENTER** key to the far right on the keyboard.

5) The PUSH-key menu now appears on the screen:

01: _____	02: _____	03: _____	04: _____
05: _____	06: _____	07: _____	08: _____
09: _____			
10: _____			
11: _____			
12: _____			
13: _____			
14: _____			
15: _____			
16: _____			

HEX CODE: 20

The cursor will be placed on the first line, after "01:". You can now fill in all the fields with commands or strings of keystrokes you frequently use.

Let us say that you want to program the commands LIST-FILES and DELETE-USERS-FILES (for all your :OUT files), and that your user name is TOM-JONES.

6) In field 01, type: LI-FI, then press the right arrow key. Do not forget the left arrow key!

7) Press the down-arrow (↓) to move to the next field. This field (02) is probably too small to hold the DEL-US-FI command, so press down-arrow seven more times to get to field 09.

Type: DEL-US-FI :OUT,Y, then press the right arrow key.

You may move around in the push-key menu with the arrow keys and program the other fields in the same way.

Note that you are not restricted to commands only. You may program in any sequence of keystrokes, using all the available keys on the keyboard.

8) To get out of the push-key menu, press the **ESC** key.

9) You then get back to the CONFIGURATION MENU. You may now enter one of the other entries in the menu, or exit and go back to what you were doing before.

Press the **ESC** key once more to exit.

10) You now enter the CONFIGURATION EXIT menu:

```
C O N F I G U R A T I O N   E X I T
Make Switches Permanent
Reset to Initial Switches
Make Tabulation-Rack Permanent
Reset to Initial Tabulation-Rack
```

The first line, "Make Switches Permanent" will stand out in inverse video. You have the same choices here as in all the other menus. Move between the fields with the arrow keys, press ENTER to enter, ESC to exit.

11) You want to "make switches permanent", ie., you want your programmed push-keys to stay that way, not only until you log out, so you press the **ENTER** key. The system responds with a little "yes" at the end of the first line:

```
C O N F I G U R A T I O N   E X I T
Make Switches Permanent  yes
Reset to Initial Switches
Make Tabulation-Rack Permanent
Reset to Initial Tabulation-Rack
```

12) Then press **ESC** to terminate the whole procedure and go back to what you were doing.

For a complete description of all the possibilities in the configuration menu, see the **TDV 2200/9 USER'S GUIDE**;

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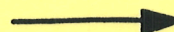
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