W o r d W o r k User´s Guide.

version 3.3

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Introduction.

WordWork is the name of a series of programs used for word processing on the SPC/1 computer. WordWork makes it easy to type and correct texts such as letters , contracts, price lists and books.

In "Introduction to WordWork word processing" a short and simple description of WordWork was given making it possible for the user to use WordWork. This User´s Guide contains the complete description of WordWork, and is a reference manual. The individual functions in WordWork are described systematically and in detail.In this manual it is assumed that the reader is familiar with the contents of "Introduction to WordWork word processing".

A version of WordWork may be delivered in any of the three languages: Danish, German and English. WordWork can only be used on display terminals that have 16 function keys.

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1. WordWork programs.

WordWork consists of 6 programs which execute WordWork´s various functions: text editing, printing, copying,deletion and renaming of texts and catalogue, backup copying and tidying of disks. These various functions are controlled by WordWorks main command level. The programs, which always must exist on the "P1" disk, have the following names:

WW	- Main command level, New operator.
WWED	- Text editing.
WWPRI	- Printing.
WWREDECO	- Copying, Deletion and Renaming of files.
WWCATAL	- Catalogue of a disk.
WWBACCOM	- Backup copying and Compression of a disk.

The programs are written in PASCAL programming language. The PASCAL programs on the SPC/1 computer are in two parts : an interpreter part and a (P-)code part. When the program is executed on the computer, the interpreter will do the actions stated in the P-code. Thus when the user gets a catalogue listing of the "P1" disk each program name will occur twice, corresponding to the two parts. In text processing systems where there is little space on the "P1" disk, the P-code part of the WordWork programs may be stored on a disk other than "P1".

WordWork consists of these programs and a text called "WWPARAM". This text file contains information concerning the word processing system: data concerning the printers which are connected, names of the operators at the individual work stations (see ch. 3) and names of existing user programs which may be called from WordWork (see ch. 13). A detailed description of the contents of WWPARAM is found in chapter 14.

2. WordWork main command level.

WordWork´s main command level connects together all the functions in WordWork: each function starts from WordWork´s main command level, and the user returns automatically to WordWork´s main command level when the function is terminated. This means that once the user has started WordWork from the terminal, the user will automatically continue with WordWork. The user starts WordWork by giving the operating system MIKADOS the command to start WordWork´s main command level - this should only be done once: press the ESCAPE key, and MIKADOS writes a ´>´ on the screen. Type WW and then press the RETURN key, and the following menu will appear on the screen:

```
*********************************
* WordWork main command level *
*          Version 3.           *
*********************************

Legal Commands:

E - Edit text.
P - Print text.
N - New operator
D - Delete files.
L - List catalog.
C - Copy files.
R - Rename files.
S - Compress disk.
B - Backup disk.
U - Exit to user program.
M - Exit to MIKADOS.

Command:
```

A function is chosen by typing the letter followed by pressing RETURN. (Small letters may be used in the reply).

The M command gives the user the possibility of stopping the WordWork programs. One is again in MIKADOS which waits for the ESCAPE key to pressed.

An error message may appear on the screen when one of WordWork´s functions is started or terminated. The error codes used in the messages are described in chapter 15.

3. New operator.

Each user (operator) may have his own standard in WordWork, this determines several things concerning editing and printing of texts.

The operator standard is defined in a set of editing and printing parameters:

The editing parameters determine editing parameters such as: end of paragraph character, whether a number line is to be shown with the tabulator line, whether there is to be automatic line change when the right-hand margin is reached and which notation the calculator module must use;

The printing parameters determine the format of the printout: number of characters per inch, left-hand margin on the paper, line spacing, amount of text per page etc. (The parameters are described systematically i section 4.33).

The operator standard is attached to the name of the operator. A operator name consists of 1 to 3 letter, which the user himself may define.

WordWork must know the operator name when the user is working at a terminal, otherwise the operator standard will not be used. The user inserts his operator name by typing an ´N´ followed by pressing RETURN - that is you will only get yuor own standard when you use the N command.

The user must now enter his operator name and press RETURN, WordWork stores the operator name (in the file called WWPARAM), and the standard associated with the entered user operator, is now used in connection with editing and printing on this terminal. (The informations held in WWPARAM are described in chapter 14, the user must not alter these data.)

The program then writes the date on the screen and asks the user if he wishes to alter the date in the computer:

If the user presses the RETURN key the date will not be altered, as the program suggests ´N´ for No. The menu for the main command level will then reappear on the screen.

If the user enters ´Y´ followed by RETURN, the program shows the date and the user may now alter it. The date consists of up to 10 characters and you may for instance write the year in four digits, the month and day in two digits - all three fields seperated by a full stop as in : 1982.05.13, 1981.12.20 and 1982.06.01. You are also allowed to enter the date as shown:

12.MAY.82 and 22.AUG.81. When the date has been altered, the RETURN key is pressed. The program stores the date on the "P1" disk and thus the program will always show the last entered date.

It is important to set the date each time the computer is started, otherwise WordWork will use an incorrect date. When a text is edited and stored, then the date is stored together with the text. The date is shown on the catalogue listing of the disk (see ch. 10).

A description of how you create your own operator standard is found in section 3.1.

Note: When you enter a new text then the editing and printing parameters of the operator will be attached to the text, in that the text receives its own parameter set. This set is called the text standard and will then be used in connection with any editing or printing of the text. The user´s standard parameters are only used when the text does not have a set of its own.

If the user doesn´t require his own standard a common operator standard must be created in the word processing system. The WordWork diskettes sent by DDE contain a parameter set for the operator name ´DDE´. This operator name may be entered if the user doesn´t want a personal operator name.

The operator standard parameters are stored in a text with the name made up of the operator name followed by ´PARAM´. E.g., if the operator name is ´DDE´, the standard parameters are stored in the text with the name ´DDEPARAM´.
As the operator name is stored in WWPARAM, it will only be necessary to enter the operator name if another user has worked at the terminal. If there is any doubt as to which operator name is current at the terminal, it is quickest to enter the operator name required.
There is a text for each terminal which contains those standard parameters which are current for that terminal. E.g. terminal no. 2 has the text ´$$2PARAM´. The user must not try to edit files containing the standard parameters, (i.e. all text files with names ending in ´PARAM´). WordWork will not function properly if the user breaks this rule.

3.1 Creation of a new operator name.

In order to create a new operator name and standard, follow these instructions in the order given:

1. Choose the ´N´ function from the main command level, and execute the new operator name function.

2. Answer the question "Enter name of operator" with up to three letters, for example, the initials of the new operator, and press RETURN. After the name entry, correct or accept the date.

3. After the function has returned automatically to the main command level, start the editing function with an ´E´.

4. Answer the question "Text name" with a RETURN, that is, entry of a new text.

5. The editing function will issue two warnings:
   "The user ABC has no standard"
   "The standard edit scheme was not found"

   Ignore these two warnings, as we are just setting up the standards now.

6. Press the function key SPECIAL, followed by INFORMATION. WW will ask the operator which parameters are to be corrected: first enter the operator´s editing parameters (answer the first question with a ´E´ for edit parameters, and press RETURN, answer the second question with a ´O´ for Operator and RETURN).

7. Inasmuch as the operator has no standard, WW will warn:

   "Operator has no standard"
   "Should operator standard be created?"

   Answer the question with a ´Y´ for Yes.

8. WW will then ask:
   "On disk P "
   Enter a ´1´ and press RETURN.

9. Set up the editing parameters as wished.

10. After all questions are answered, answer both of the following

questions
"Should the operator standard be changed? Y"
"Should the text standard be changed too? N"

with a press of RETURN.

11. Press again SPECIAL followed by INFORMATION.

12. This time around the printing parameters will be set. Answer the first question by pressing RETURN, because WW will suggest a ´P´, and answer the next question with a ´O´ for Operator followed by RETURN.

13. Repeat points 7 and 8, setting the printing parameters as wished.

14. The operator standard is thus created after the operator again answers the questions as in point 10. Press the function key TERMINATE, and from the termination menu, enter a ´R´ to return to the main menu.

4. The WordWork text editing module.

All the keys that can be used in connection with the text editing module will be explained systematically in this chapter. Initially the start of an editing session is briefly described.

The text editing module is so large that it has been necessary to divide the program up into a series of smaller segments. When the user is editing a text , and wants to input part of a text by using the READ FROM FILE command, for example, or wants to alter the printing parameters by pressing SPECIAL and INFORMATION, ´wait´ will appear in the top right-hand corner of the screen while the required program segment is read from the disk into the user memory in the computer. The ´wait´ text means that the user must wait until the computer is ready.

4.1 Start - entry of text name.

When a text is to be entered or edited the computer must execute WordWork´s text editing program. This is started by replying ´E´ to WordWork´s main command level. The screen then shows the following text:

```
*****************************
*  WordWork EDIT Utility    *
*       Version 3.          *
*****************************

Name of operator  :

Enter name of text  :

Text note  :
```

When the editing program asks for the name of a text, the user may choose one of the following three possibilities:

1) If the user is not contend with the operator name shown by the program, then just a press on the ESCAPE key will bring up the menu of the main command level, where the ´N´ command may be used for altering the name of the operator.

2) If a new text is to be entered (i.e. it does not already exist on the disk), the user can just press the RETURN key. Thus the new text will not receive a name until the user stores the text on a disk (see TERMINATE section 4.38). Then the screen is cleared, and the new text may be entered.

3) If the user enters the name of a text, the editing program will search for the text file with that name. If a text with the entered name exists, the editing program will immediately copy the text into two working areas, where it will be stored during the editing process. As this copying is executed, the text note is shown and a counter on the bottom left-hand corner of the screen informs the user how much of the text is input. The first 24 lines of the text appear on the screen, and 'wait' is shown on the top right-hand corner of the screen. The user can edit the text when 'wait' disappears from the screen. While the text is being copied, the editing program may be stopped by pressing the ESCAPE key. The program thne again asks the user for the name of the text.
If a text with the entered name does not exist (as,for example when the user is entering a new text), the editing program writes the following on the screen:

```
The text is not found
Legal commands :      'R' - Return to main command level.
                      'E' - Edit a new text.
                      'C' - Continue editing.
Command: C
```

The user must choose one of the three commands:

'R' If, for example, the user cannot remember the text name, it is possible to return to the main command level by pressing 'R' followed by RETURN. In the main command level the user may ask for a catalogue listing of the disk (see ch. 10).

'E' If, for example, the name of the text was incorrect, the user can type 'E' followed by RETURN. The editing program will then again ask for the name of the text to be edited.

'C' If a new text is to be entered, the user just presses RETURN, as the program itself suggests C. The screen is cleared and the new text may be entered.

4.2 Text entry.

Text is entered as follows: First an edit is started as described in section 4.1 and when the blank screen appears the new text may be entered. This may be done without the user needing to think of changing lines if the parameter "Automatic line change" has the value ´Y´ (see section 4.33). The word being typed when the right margin is reached is automatically moved down to the beginning of the next line.

The text is placed between the right and the left margin as determined by the tabulator line (see section 4.35). The text should not be set up during entry, first at a later point - as described in "Introduction to WordWork".

Two presses of the RETURN key will give a blank line in the entered text. The first RETURN will move the cursor to the next line; the next will give the blank line.

Text entry should always be terminated by storing the text on the disk, this is done by pressing the function key TERMINATE (see section 4.38). N.B.: A text is only stored on the disk when the user terminates the editing and states that the text is to be stored.

4.3 Hyphens and underlining.

Two types of hyphens may occur in the text:

A. If the user presses the key marked ´-´ a fixed hyphen is entered in the text. The fixed hyphen is shown on the screen by the character ´-´ and is output with the character ´-´ on the printer. Fixed hyphens will always appear in the text, even after reformating (see section 4.29). The user must therefore not use fixed hyphens to divide words at the end of a line, but only use fixed hyphens to write hyphenated words - "right-hand", for example, or as dashes.

B. When reformating, the editing program will place a temporary hyphen in the text where a word is to be split (see section 4.29). The temporary hyphen is shown on the screen by the character ´_´, but is output on the printer with the character ´-´. The user cannot put temporary hyphens into the text, therefore all hyphenating should be done by reformating using the editing program. If the text is to be reformated more than once, the temporary hyphens can be removed from the text - this is not possible for the fixed hyphens.
(It is possible to use the character ´_´ to give a temporary hyphen - see "Normal underlining" in section 4.33.3).

One or a series of words may be underlined by using the key ´_´. By pressing this key the character at the cursor position will be underlined, and the cursor will move one position to the right. If the character where the cursor stood was already underlined, the underlining will be removed when ´_´ is pressed.

Note that the editing program will regard a series of underlined words as one long word; this can give unexpected results when reformating. Underlining should not be executed until the text has been reformated, or the spaces between the words should not be underlined before reformating.

(The key ´_´ gives underlining only when the editing parameter "Normal underlining" is "Y" - see section 4.33.3).

Underlined characters have a special appearance on the screen - see "Introduction to WordWork" section 6.4.

4.4 The arrow keys and the Home key.

-> Moves the cursor one position to the right. If the cursor is already positioned in column 79, the key has no effect.

<- Moves the cursor one position to the left. If the cursor is already positioned at the beginning of the line, the key has no effect.

↑ Moves the cursor one position up without disturbing the horizontal position of the cursor. If the cursor is positioned at the top of the screen, the text on the screen is rolled one line down, and a new line appears at the top of the screen. If the cursor is positioned at the first line of the text, the key has no effect.

↓ Moves the cursor one position down without disturbing the horizontal position of the cursor. If the cursor is positioned at the bottom of the screen (line 24), the text on the screen is rolled one line up, and a new line appears at the bottom of the screen. If the cursor is positioned at the last line of text, the key has no effect.

Home Moves the cursor to the top left-hand corner of the screen, i.e. line 1, position 1. The text is not changed - that is this key has not the same effect as the function key FIRST PAGE (see section 4.12)

4.5 The Rub key.

Deletes all text on the line to the right of the cursor including the character at the cursor postion. If the cursor is positioned at the first position in the line, the whole line will be blank.

4.6 The Tab key.

The cursor is moved to the right to the next tabulator position in the tabulator line (see section 4.35). The left and right margin (the L and R) in the tabulator line also act as tabulator stops. The tabulator line may be altered by using the function key TAB.

4.7 The RETURN key.

Moves the cursor to the next line in the left margin position (L) as defined in the tabulator line - see section 4.35.

All answers are terminated with RETURN. For example, when replying to the following questions :

"Enter name of text : ",
"Enter search string : " and
"From line : "

the user terminates the reply by pressing RETURN. This is a signal to the program that the reply is complete (see also sections 4.39 and 4.40).

4.8 The ESCAPE key.

The ESCAPE key can be used to stop any of the following functions:

FIND	- The search is stopped.
FIND AGAIN	- The search is stopped.
REPLACE	- The search is stopped.
REPLACE AGAIN	- The search is stopped.
REFORMAT	- Reformating is stopped.
RIGHT JUST.	- Reformating is stopped.
SPECIAL + INFORMATION	- Alteration of printing or editing parameters is stopped.
MARK (1st. time)	- Marking is stopped.

TAB	- Alteration of the tabulator line is stopped (the altered line is not shown.)

4.9 The function key NEXT PAGE.

The text on the screen is replaced by the next 24 lines of text. The key does not alter the position of the cursor. If the end of the text is already on the screen , the key will have no effect.

4.10 The function key PREV. PAGE.

The text on the screen is replaced by the previous 24 lines of text. The key does not alter the position of the cursor. If the start of the text is already on the screen, the key will have no effect.

4.11 The function key LAST PAGE.

The cursor moves to the line where the text ends. If this line is not on the screen, the text on the screen will be replaced by the last 23 lines of the text and the cursor positioned at column 1 of line 24.

If the text on the screen is to be replaced, ´wait´ will appear in the top right-hand corner until the operation is completed.

4.12 The function key FIRST PAGE.

Moves the cursor to the first position in the first line of the text. If the first line shown on the screen is not the first line of the text, the lines on the screen are replaced by the first 24 lines of the text. ´wait´ appears in the upper right-hand corner whilst this operation is being executed.

4.13 The function key E.O.L.

Positions the cursor after the last character on the line. Note: A space is also treated as a ´normal´ character - the cursor may be positioned several places to the right of the last visible character.

4.14 The function key S.O.L.

Positions the cursor at the first character of the current line.

4.15 The function key INSERT LINE.

Inserts a blank line at the current cursor position, and the succeeding lines are pushed one line down on the screen.

The contents of the line last removed by the function key DELETE LINE can be replaced by pressing SPECIAL and then INSERT LINE. The line is inserted at the current cursor position, just as for the ´normal´ INSERT LINE.

4.16 The function key DELETE LINE.

Deletes the current line, the succeeding lines on the screen are moved up one line and a new line appears at the bottom of the screen.

4.17 The function key FIND.

Searches for a defined word or text of up to 40 characters:

When the user presses the FIND key , the editing program asks: "Enter search string ", a character,word or text may now be entered. The reply is terminated by pressing RETURN, and the editing program searches from the current cursor position; while the search is being executed ´search´ appears in the top right-hand corner of the screen.

The search stops

1. when the search text has been found. The cursor is positioned at the first character of the search text.
2. when the end of the text is reached, i.e. the search text has not been found. The cursor is positioned at the first line after the text.

The editing program finds only those occurrences of the search text which are exactly the same as the search string - i.e. each character must match. If the search string contains spaces it is important that there are the same number as in the text to be found. Normally spaces occurring after the search string will be ignored, but if the search string is entered with an "´" (accent) first and last, any following spaces will be included in the search

text. If, for example, the word "user " (with following space) is entered, all the places where "users" is written in the text will also be found, but if the search text "´user ´" is used, only the places where "user" is written will be found.

A search may be terminated by pressing the ESCAPE key.

If FIND is to be repeated by using the REPEAT function key (see section 4.37), the editing program will find the occurrence of the search text entered with REPEAT. E.g. REPEAT 6 FIND finds the sixth occurrence of the search text.

4.18 The function key FIND AGAIN.

Finds the next occurrence of the search text entered at the last FIND command. The search is executed as with FIND (see section 4.17).

By pressing the function key INFORMATION (section 4.33) the user may see the current search text. A search text is stored until:

1) A new FIND command is given.
2) A REPLACE command is given.
3) TERMINATE or WRITE TO FILE commands are given.
4) The calculator module is started or stopped(see ch.6).

The search text will always be: "¨", when a text editing session begins and after pressing the function keys: TERMINATE, WRITE TO FILE and CALCULATE (to stop the calculator module).

4.19 The Function key INSERT CHAR.

Inserts a blank character at the current cursor position - the character in the cursor position and the rest of the line are pushed one position to the right.
If the last character in the line is pushed over the right margin, one of the following will occur:

1. When the last character is pushed just over the right margin and automatic line change is in action (an editing parameter described in section 4.33), the last word in the line will be moved to the beginning of the next line. If there is no room on the next line , a blank line is automatically inserted and the word written there.

2. If characters in the line already occur beyond the right margin, or the automatic line change is not in action, the characters are pushed over the right margin; those characters which are pushed over position 78 in a line are ´lost´. Characters may occur beyond the right margin in a line, when e.g. you have overuned the right margin in a justification of the text.

4.20 The Function key DELETE CHAR.

Deletes the character at the current cursor position. The text to the right of the cursor moves one position to the left.

4.21 The function key OPEN LINE.

Opens the line from the current cursor position. That is, all text after the current cursor position on the current line is moved one line down on an automatically inserted line.

4.22 The function key CENTER.

Centres the text on the current line between the left and right margins defined by the current tabulature line (see section 4.35). Blank characters before and after the text on the line are ignored, whilst blank characters in the text are not removed.

If CENTER is repeated by using the REPEAT function key (see section 4.37), the current line and the following lines are centred. The cursor is moved by this function to the last centred line.

4.23 The function key REPLACE.

A defined character, word or text is found and replaced automatically or after confirmation by the user, by another character, word or text.

When the user presses REPLACE the editing program asks

"Replace string :",

and now the character, word or text may be entered as with the FIND command. RETURN is then pressed, and the program asks

"With string : ".

The user enters the character,word or text which is to replace the search string. The replacement text does not have to have the same length as the search text. The entry of the replacement text is

terminated by pressing RETURN, and the user must reply to the query
"Confirm (Y,N) ?".
The program suggests ´N´ (for No), but the user may change this to ´Y´ (for Yes) before RETURN is pressed. The reason for this query is explained in the following.

The editing program now searches for the search text from the cursor position as with the FIND command. When the search string is found, the editing program will do one of the following:

1) If the reply to the query ("Confirm (Y,N)") was ´N´ the search string will automatically be replaced by the replacement string. If the two texts are not of the same length, the program will either insert or delete any extra characters required as is done for the INSERT CHAR. and DELETE CHAR. functions.

2) If the reply to the query ("Confirm (Y,N)") was ´Y´ the cursor is positioned at the first character of the search string, ´confirm´ appears in the top right- hand corner and the terminal beeps. The user must now decide whether the text is to be replaced or not. Pressing the RETURN key effects replacement, whereas pressing any other key ensures that replacement is not executed - never use a function key at this point.

The search for a text may be stopped by pressing the ESCAPE key, as for the FIND command.

Analagous to the FIND command, blank characters at the end of the search string and the replacement string are ignored unless the strings are entered with an "´" (accent) first and last.
If no characters or only spaces are entered before RETURN is pressed, the search string (or the replacement string) are empty (i.e. without characters).
Specially when the search string is empty, the replacement string is inserted at the current cursor position, because en empty string is always found at the cursor position. This happens on condition that at least one character exists on the current line.

The search string may be replaced several places in the text by using the REPEAT command. A repeated REPLACE command may be terminated by pressing the ESCAPE key.

4.24 The function key REPLACE AGAIN.

Replaces the next occurrence of the search string, entered at the last REPLACE command, by the replacement text. The replacement is as for REPLACE (see section 4.23).

The user can see the current search string and replacement string by using the INFORMATION command. These texts are stored until:

1) A new REPLACE command is given
2) A new FIND command is given
3) TERMINATE or WRITE TO FILE commands are given
4) The calculator module is started or stopped (see ch. 6)

The REPLACE AGAIN command has no effect when there has been a FIND command since the last REPLACE command. The FIND AGAIN command may be used after a REPLACE command to get the next occurence of the search string, because the FIND AGAIN command doesn´t alter the search or replacement strings.

4.25 The function key MARK.

MARK is used to mark a line or a column, and together with the STORE, STORE & DELETE and RESTORE commands is used to move texts or columns of text. The following describes how a section of text or a column is marked on the screen.

Section 5.3 in "Introduction to WordWork" describes in detail how a section of text may moved or copied. Here, only the MARK command is described.

The MARK command can only mark those lines visible on the screen. The user must first make sure that the required text is on the screen.

When a number of lines is to be moved or copied, the cursor is moved to the last line that is to be marked, and MARK is pressed. That line is now marked (on most screens it is shown by inverse video (black letters on a light background)). ´mark´ appears in the top right- hand corner of the screen. The cursor is then moved, using the up arrow, down arrow or Home keys, to the first line to be marked. The MARK key is pressed again, the current line is shown as marked and ´store/mark´ appears in the top right-hand corner of the screen. A number of lines of text are now marked, and the contents of these lines may be stored and perhaps deleted by using

the STORE or the STORE & DELETE commands respectively (see sections 4.27 and 4.28).

The user may stop marking after using the MARK command once by pressing the ESCAPE key.

The first and last line to be marked may be the same line (i.e. the cursor is not moved between pressing the MARK key two times), it is also possible to mark the first line in the section before the last line.

A column on the screen which is to be moved or copied, is marked in the following way: The text is moved until the complete column is visible on the screen. The first and last lines in the column are marked as described above. When ´store/mark´ appears in the top right-hand corner of the screen, the cursor is positioned at the left margin of the column using the right and left arrow keys. Pressing the MARK key now causes all the lines in the marked section to be shown as marked from the cursor position to the end of the line. ´mark´ appears in the top right-hand corner of the screen, the cursor is moved using the right and left arrow keys to the right margin of the column. Pressing the MARK key causes only those characters in the column to be shown as marked and ´store´ appears in the top right-hand corner of the screen. A column on the screen is now marked, the contents of the column may be stored and perhaps deleted by using the STORE or the STORE & DELETE commands respectively (see sections 4.27 and 4.28).

4.26 The function key RESTORE.

This command is used to restore a section of text or a column which has been stored using the MARK and either the STORE or the STORE & DELETE commands (see sections 4.25, 4.27 and 4.28).

Lines are restored as follows:

> The cursor is positioned on that line which is to be immediately after the lines to be restored, the RESTORE key is pressed. The stored section of text is then inserted.

A column is restored as follows:

> If the column is to be inserted as independent lines the cursor is positioned on that line which is to follow immediately after the column. The RESTORE key is pressed and the column is inserted on new lines.

If the column is to be merged with already existing lines, the cursor is positioned where the top left-hand corner of the column is to be, the SPECIAL and RESTORE keys are then pressed, causing the column to be inserted. This insertion is executed in a way analagous to INSERT CHAR; the user must thus ensure that the text doesn´t go over position 78 in the line. The automatic line change is disabled and the characters which are pushed over position 78 in a line are ´lost´.

A text section or column may be restored as often as required by the user, as the stored text or column is only deleted when a new text or column is marked and stored (see section 4.27).

The repeat command (see section 4.37) may be used in connection with both a ´normal´ RESTORE and a SPECIAL RESTORE to restore the same text or column several times in succession.

4.27 The function key STORE.

The command is used together with MARK and RESTORE to move sections or columns of text.

The text sections or columns marked using the function key MARK (see section 4.25), are copied into a reserve area of the user memory in the computer, using the STORE key. This data may be inserted from here into the text by pressing RESTORE (see section 4.26). The text is stored in this area until the user again uses the STORE or the STORE & DELETE command.

The STORE command only works when the text or a column has been marked using the MARK command.

4.28 The function key STORE & DELETE.

This command has the same function as the STORE command (see section 4.27), though it also causes the section or the column that is marked to be removed from the screen when the text is stored. A column is removed in a way analagous to the command DELETE CHAR.

The user may use STORE & DELETE to delete text from the screen, as the user is not obliged to restore the stored text.

4.29 The function key REFORMAT.

The REFORMAT command justifies the text using the right and left margins defined in the tabulator line (see section 4.35). Using the REFORMAT command gives an even left margin and an uneven right margin.

Reformating is executed from the current cursor position and though the text on the current line to the left of the cursor are not affected by the reformation. The reformation is carried on until a line that either

a) is blank, or
b) starts with a period command (see section 5.5), or
c) is terminated by the ´paragraph mark´, defined by the editing parameter ´End of paragraph mark´ (see section 4.33).

If the cursor is positioned after the first letter in the last word on a line, reformating is carried out from the first position on the next line.

As well as the right and left margins, the tabulator line also shows an ´X´ which is used in connection with reformating. The position of ´X´ defines the amount of text which may be written on the line. The ´X´ and the right margin marker (R) on the tabulator line define a zone within which the text on any line must end.

When the text in a line does not end within this zone, the program tries to divide the last word on the line. This is done as follows:

The program shows the line on the screen with a hyphen in the last word, in the position corresponding to the right margin. Now the user may move the hyphen to the position required using the right and left arrow keys. When the hyphen is in place, RETURN is pressed and reformating continues. The user is permitted to move the hyphen to the right of the right margin, this means that the right margin will be overrun. If the hyphen is placed before the word, the word will be moved down to the next line, whilst a hyphen placed after the word will keep the word on the same line. If the right margin is overuned on a line, the effect of the INSERT CHAR command is affected on this line (see section 4.19).

Hyphens inserted when reformating are shown on the screen by the character ´_´, and are temporary hyphens which may disappear when the text is reformated again. When printing, the temporary hyphens will be output with the ´normal´ character for a hyphen:´-´. Those hyphens which the user enters in the text by using the key ´-´, are

treated as fixed hyphens, shown by ´-´ on the screen, and they will not be removed when reformating the text.

On reformating, the text in the lines is moved within the left and right margin; i.e. a comment out in the left margin will be merged into the text. If the user requires the text to be in two columns, the following should be done:

The text is first written as one complete column, which is reformated to the required width. The the right-hand column is created using the function for moving columns, described in section 4.25.

The tabulator line current at the time of reformating defines the right and left margins to be used. The user must ensure that the tabulator line is as required, when reformating. This also means that a reformated section is not altered just because the tabulator line is altered - the text is altered only by a reformat.

When pressing the function key SPECIAL immediately before the function key REFORMAT, the justification of the text is carried out using the current cursor position as the left margin and the right margin defined in the tabulator line.

4.30 The function key RIGHT JUST(IFY).

This key has the same function as REFORMAT, described in section 4.29, the right margin is also made even with the addition of extra spaces between the words on the lines. The following principle is used when the spaces are inserted: First, blank characters are inserted after period, comma, colon and semicolon. Then, if more spaces are to be inserted, these are placed between the individual words.

When pressing the function key SPECIAL immediately before the function key RIGHT JUST, the justification of the text is carried out (as with REFORMAT) using the current cursor position as the left margin and the right margin defined in the tabulator line.

4.31 The function key READ FROM FILE.

This function key makes it possible to enter part of an already stored text or a standard phrase into the text being edited. The following will be described:

1) line orientated text entry,

2) key orientated text entry and
3) entry of standard phrases from a library.

All three types of text entry always start in the same fashion:

After the key READ FROM FILE is pressed, the editing program will ask

"Read text :"

and the user may enter the file name of the text (or library), which is to be used. The reply is terminated by pressing RETURN. When the text file is found on one of the disks in the system, the program will ask

"Line or Key reading ?"

and suggest "K" for Key entry.

4.31.1 Line orientated text entry.

Line orientated text entry is effected by pressing ´L´ for Line followed by RETURN. Then the user enters the line numbers of the first and the last lines to be read from the required text file. Both queries

"From line : " and
"To line : "

are answered by a number followed by pressing RETURN. The numbers are entered as described in section 4.40. If all the the lines are to be read, the line numbers 1 and 9999 are used. If the user does not want to read from the file after all, ESCAPE should be pressed instead of RETURN.
The defined lines will now be read into the text before the line which contained the cursor, when the user pressed READ FROM FILE. The user is kept informed about the course of the input. If the user, for example, entered a line number greater than the number of lines in the text, the editing program will terminate the text entry with the message :

"There are only xxx lines in the text".

The user aknowledges the message by pressing RETURN. Finally the current text appears on all 24 lines of the screen.

4.31.2 Key orientated text entry.

The disadvantage of line orientated text entry is that the user must know the numbers of the first and the last lines to be input. This is seldom the case. Normally, key orientated text entry is the method preferred.

Key orientated entry of a text is obtained by pressing RETURN as

the program suggests ´K´ for Key. The program then gives the message

"Enter start key string :"

and the user may enter a letter, a word or a text of up to 40 characters. The user should choose a key string placed on the first line of the text to be entered. The ideal would be to choose a key string which uniquely defines the line. As the key string must exactly match the text to be found, the user must ensure that the key string contains the correct number of blank characters, as with the function FIND. The entry of the key string is terminated by pressing RETURN. (Pressing ESCAPE instead of RETURN would cause the function to be stopped).

The editing program now searches for the defined key string in the chosen text - while this is executed, a message appears, e.g.

"Searching start key string - ´the box´"

When the key string is found, a message appears, e.g.:

"Is line 23 the first one (Y,N) ? Y"

whilst the found line is shown on the second line of the screen. If the user presses RETURN, entry will begin from the line shown; whereas if ´N´ for No and RETURN are given as reply, the program will continue searching for the key string required. When the next occurrence of the key string is found, the program will again ask if it is the required line. (Pressing ESCAPE instead of RETURN will terminate the text entry function at this point and no text will have been input).

When the start key string has been found, the editing program asks for a string (key string) which is placed on the last line to be entered:

"Enter stop key string :"

This key string may also contain up to 40 characters, and the entry is terminated by RETURN. As with the start key string, the user must take care to enter the key string correctly - as the comparison is made character by character.

The editing program will now enter the text from the defined start line, into the current text. The new text is placed before the text line which contained the cursor when the user called the READ FROM FILE function. At the same time the program searches for the end key string - while this is executed, a message appears on the second line of the screen. This may be, for example,

"Searching stop key string - ´the machine´"

When the key string is found, the program writes, for example:

"Is line 26 the last one (Y,N) ?Y".

while the found line is displayed on the second top line of the screen. Pressing RETURN stops the text entry, whereas pressing ´N´ followed by RETURN causes text entry to continue. When the next

occurrence of the key string is found, the program will again ask the user if the found line is the end line.

When the required text has been entered, it will be inserted in the editing texts and the screen will shortly afterwards show 24 lines of text, with the cursor positioned at the first line of the inserted text.

If the end text string cannot be found the program writes :

"The key string wasnot found !",

and the user must reply with RETURN. In this case all the lines in the file after the start key string have been entered - thus the user must take care when typing the end text string; the shorter it is, the fewer possibilities for typing errors.

4.31.3 Entry of standard phrases from a library.

It is necessary to look at the contents of a phrase library to be able to understand how standard phrases are entered. A phrase library is just a ´normal´ text file containing lines with phrase marks. A phrase mark consists of a ´#´ character followed by the name of the phrase. The phrase name may be a number or a word - the length of the phrase mark must never exceed 40 characters.(The longer the name the more difficult to enter correctly!) The phrase mark must occur at the beginning of a blank line. For example, a phrase library may contain the following:

```
#1
This is phrase 1 - one line only.
#2
This is phrase 2,
two lines long.
#3
Phrase 3 with lots of lines
  .....
  .....
  .....
  .....
  .....
Last line in phrase 3
#Ys
Yours sincerely,
The Danish Locomotive Co. Ltd.
#
```

The phrase library above contains 4 standard phrases. Each of the phrases starts with a phrase mark containing the name of the phrase, and ends with the next ´#´ character. There may be an

arbitrary number of lines in the phrase - phrase #1 has one line, phrase #3 has many lines. The example also illustrates the free choice of phrase names - here they are called #1, #2, #3 and #Is. They occur in arbitrary order. The user must terminate the last phrase in the library with a line containing the character '#'.

A phrase is entered as follows : the query

"Line or Key reading ? K"

is answered by pressing RETURN as for key orientated entry. The user then enters the phrase name as the start key string. E.g. if phrase #3 above is to be input, #3 is typed followed by the RETURN key. The editing program then writes the message :

"Reading phrase no. : #3.",

finds the phrase in the library and enters it in the text. The phrase is inserted in front of that line which contained the cursor when the user called the READ FROM FILE function. If the program cannot find the phrase, the message

"The phrase does not exist!"

appears on the top line of the screen. The user must then reply by pressing the RETURN key.

4.32 The function key WRITE TO FILE.

Saves a part of the text that is being edited as an independent text file on the disk.

When the the user presses the WRITE TO FILE key, the editing program asks

"Enter text name :" .

The user replies with the name the new text is to be called, (text names are described in Ch. 4 of "Introduction to WordWork"). When the name is written RETURN is pressed and the program asks :

"Disk : P " ,

and the user must now enter the designation for the disk where the new text is to be stored, (the designations are "P1", "P2", "P3" etc.).

The program will notify the user if a text with the same name already exists on the disk, and ask if it should continue. If the user replies with "Y" for "Yes", the existing text will be deleted, and if the reply is "N" for "No" the text will be saved, and the user must give a new text name. The reply is terminated by pressing RETURN.

The user must then reply to the queries

"From line :" and

"To line :"

with the first and last line numbers of the text to be saved. These line numbers are found by setting, in turn, the cursor on the first

and the last lines to be saved, and pressing the INFORMATION key (the INFORMATION display shows the current line number - see section 4.33). The entry of each line number is terminated by pressing RETURN (see section 4.40).

The editing program then stores the required part of the text on the disk. Whilst this is in progress, the user is kept informed as regards the number of lines being output (- as with TERMINATE).

If the user replies with ESCAPE, instead of RETURN, to any of the queries from the editing program, WRITE TO FILE is not executed.

4.33 The function key INFORMATION.

The function key INFORMATION is very important in connection with editing. The user can obtain information concerning the text being edited, as well as read/alter the editing and printing parameters related to the text and the user. A description of a ´normal´ INFORMATION function and the method of setting parameters are given in the following sections.

4.33.1 ´Normal´ INFORMATION.

The following is an example of the data which appears on the screen when the user presses INFORMATION:

WordWork - INFORMATION

Current line no.	:	12.
Cursor position	:	line 8, column 1.
End of file	:	on display line 23
Editing text	:	WWINTR:P2
Last edited	:	22.04.1982 (by DDE)
Version	:	003
Name of operator	:	ABC terminal no. 2.
No. of lines read	:	0034
Search string	:	´intrduc´
Replace string	:	´introduc´

Press RETURN to continue editing :

A short description of each line is given:

The top line relates that the user has pressed INFORMATION (as opposed to SPECIAL INFORMATION - see section 4.33.2).

The next two lines relate the position of the cursor - the current line position in the text, and the line number and the line position of the cursor on the screen.

"Text end " states whether the text ends under the lines on the screen or if it ends on the screen itself. In the latter case, the number of the first line after the text is given.

"Editing text" gives the text name which the user entered when the editing started. When using the TERMINATE function (see section 4.38), the user stores the text under the same name, it is the text name on this line that is used.

The next two lines are the same as those found on the catalogue listing for the disk : the date of the last edit, the name of the user who last altered the text and the version number for the text. These three items of information are automatically updated each time the text is stored; (the version number is updated by one, the date and the user name are inserted).

The next line contains the user name. That is the user name which was last entered into WordWork´s main command level (see ch. 3). The line with "Last edited" only contains the information concerning the user last to edit the text, when that name is different to the user name now current. (The user name determines which set of parameters the user gets - see section 4.33.2).

"No. of lines input" states the number of lines in the text the last time it was stored; (i.e. if the text has been altered by a program other than WordWork, this number is incorrect).

The next line contains the search string last used in a FIND or REPLACE function (see section 4.17 and 4.23).

The next line is linked to the previous line, and contains the text which is to replace the search text in a REPLACE AGAIN function (see section 4.24). This text will be empty if the user has last used the FIND (and not the REPLACE) function.

The last line on the screen states that editing will continue if the user presses RETURN.

4.33.2 Operator and text parameters.

An edit is controlled by a series of parameters which define how the editing program is to act in a series of different situations. These parameters are called the editing parameters. (Correspondingly, the format of the printout is defined by a series of parameters, called the printing parameters.)

A set of editing and a set of printing parameters are attached to each operator name, and are used when the user enters a text. When a text is entered the operator parameters are transferred to this text. This ´copying´ of the user parameter set occurs each time the user edits a text which does not have a parameter set already, (for example, this is the case when a new text is entered).

When the user edits a text, two editing and printing parameter sets exist : for operator and text. The two sets may be adjusted as follows:

Press SPECIAL, (´spec´ now appears in the top right-hand corner of the screen) and then press INFORMATION. The screen now displays the text:

WordWork - SPECIAL INFORMATION

Printing or Editing parameters to be altered ? P

for Text or Operator ? T

The top line of the screen shows that the user has called SPECIAL and INFORMATION. The user must first choose between correcting (or inserting) the printing or the editing parameters. The program suggests ´P´ for Printing, but the user may enter ´E´ for Editing before pressing RETURN. Then the user may decide whether the text parameters or the parameters connected to the operator name are to be altered. If the user only presses RETURN, then the text parameters are altered, but if ´O´ is entered before RETURN, the operator parameters are adjusted.
´wait´ appears in the top right-hand corner of the screen, whilst that section of the program for altering parameters is read into user memory. This executed, the text appearing on the screen will depend on those parameters to be altered. As the insertion of text and operator parameters is analagous, section 4.33.3 describes the insertion of the editing parameters for text, whilst section 4.33.4 explains the insertion of printing parameters for operator.

If ESCAPE is pressed instead of RETURN in SPECIAL INFORMATION, the insertion of parameters is stopped, and the text will again appear on the screen.

4.33.3 Editing parameters.

When the user has asked to adjust the editing parameters for the text (see section 4.33.2), the screen displays the following:

WordWork - SPECIAL INFORMATION

```
Editing text          :   WWINTR:P2

End of paragraph markacter    :
Automatic word wrap     (Y,N) :   Y
Buffered input          (Y,N) :   Y
Tab. with number line   (Y,N) :   Y

Aritmetic  (English, Danish ) :   E

Normal underline        (Y,N) :   Y
Save informations       (Y,N) :   Y
```

A total of 7 editing parameters may either be altered by inserting the new value followed by RETURN, or be kept unchanged by pressing RETURN alone. When the user has set all the parameters or pressed ESCAPE, the text appears on the screen and editing can continue.

When the text parameters are to be altered, "Editing text" appears on line 2. When the operator parameters are to be altered, "Name of operator" appears instead (see section 4.33.4).

A short description of each of the editing parameters follows:

End of paragraph mark : When the user terminates a line of text with this character, a reformat will stop after that line. If the user does not require an end of paragraph mark, a blank character is given. An end of paragraph mark in the end of a line is not printed on the paper when the text is being printed out.

Automatic word wrap : When this character has the value ´Y´ for ´Yes´, the editing program automatically moves the word the user is entering when the right margin is reached. This facility enables the user to enter a text without having to start a new line every time the right margin is reached.

Buffered input : While editing is in progress, the editing program cannot always show the characters on the screen as fast as the user enters them, for example, moving a word from one line to the next takes some time. The

editing program may use a small storage area to save the characters it has not shown as yet. If the user sets this parameter to ´N´ for ´No´, the editing program will occasionally ´lose´ characters when a line is inserted; thus this parameter should always be ´Y´ for ´Yes´.

Tab. with number line : When this parameter is ´Y´ for Yes, the editing program will display a number line when the tabulator line is displayed (see section 4.35).

Aritmetic : The calculator module in the editing program can work with two different notations : for ´Danish arithmetic´ the whole number and the decimal part are separated by a comma, and a full stop is used for each thousand. For ´English arithmetic´ the comma and the full stop are interchanged. (see section 6.5)

Normal underline : This parameter should be ´Y´ for Yes for all usual text processing. Otherwise the key marked ´_´ will not give an underline but a temporary hyphen instead.

Save informations : If this parameter is ´N´ for No, a set of editing and printing parameters will not be connected to the text. In addition, information regarding the date of the latest edit, operator name, version, number of lines and the text note will not be stored. Thus this parameter should always be ´Y´ for Yes.

When the editing parameters for the operator are altered, the tabulator line is also shown on the screen , and the user may adjust the tabulator line belonging to his operator name.

4.33.4 Printing parameters.

If the printing parameters connected to the operator name are to be altered, the following text will appear on the screen (see section 4.33.2):

```
                WordWork - SPECIAL INFORMATION

Name of operator    :   DDE

Number of printer desired                :   1
paper feed (Tractor, Sheet feed, Manual) :   T
Print memory bank          (1,2....,*) :   *
Standard                  (SM, MI, BI) :   BI
Character spacing (10, 11, 12 pitch)   :   10
Line spacing                 ( 1/24") :    6

Left margin                  ( 1/24") :   20
Distance ( 1/24" ) from top of paper to
                             - first line :  18
                             - last line  : 246

Page no. : 2.1
Position: (Top,Bottom)          :   T
          (Left, Right, Middle, 1-L/R, 2-R/L) : R
Print    :      first page      :    1
                last page       : 9999
                Copies          :    1
```

A detailed description of the 14 printing parameters is given in section 5.1. The following states how the individual parameters are altered. Firstly it must be stated that at anytime the alteration of the printing parameters may be terminated by pressing ESCAPE.

When the opetator parameters are being altered, line 2 contains the text "Name of operator". When the parameters for a text are being altered, line 2 contains the text "Editing text". (see section 4.33.3).

The parameters: character spacing, line spacing, left margin, distance to the first and last line, first page, last page and copies are all numeric, and are entered as described in section 4.40.

The entry of the standard and the page no. parameters is described in section 4.39.

The following parameters - number of printer, paper feed, print memory bank and position, each consists of a single character.

When the user enters a valid reply the cursor is automatically moved down to the next parameter, whilst the cursor remains stationary if the reply is invalid. If the user doesn´t wish to alter a parameter, pressing RETURN moves the cursor to the next parameter.

When the alteration of the operator parameters is complete or terminated by pressing RETURN, the following query appears :

"Should the operator standard be changed (Y,N) ? Y"

If RETURN is pressed, the parameters attached to the operator name are altered - the operator standard on the disk is updated. If ESCAPE is pressed or ´N´ followed by RETURN is entered instead, the operator standard is not changed, (i.e. the new values are not stored on the disk).

When the operator standard has been altered, the following query appears:

"Should the text standard to be changed too (Y,N) ? N"

If the user replies with ´Y´ and RETURN, the actual text file will receive the same printing parameters as the operator. (In the case of the insertion of editing parameters, the text will receive the same editing parameters as the operator). If the user presses RETURN or ESCAPE, the text parameters will remain unaltered.

4.34 The function key SPECIAL.

The SPECIAL key is used to extend the function of another function key. When SPECIAL is pressed by the user, ´spec´ appears in the top right-hand corner of the screen. If the user then presses a function key, the function of this will be altered. The following 5 function keys have an altered function when used in connection with SPECIAL:

INSERT LINE The line that is inserted will not be empty, it will contain the text from the line last deleted using the function DELETE LINE (see section 4.15).

RESTORE The text stored using STORE (see section 4.27), will be restored as a column (see section 4.26).

INFORMATION The editing and the printing parameters for the text and the operator, respectively, may be altered (see section 4.33).

REFORMAT The text is justified using the current cursor position of left margin. (See section 4.29)

RIGHT JUST. The text is justified using the current cursor position of left margin. (See section 4.30)

4.35 The function key TAB.

Tabulator stops, right and left margin are determined with the aid of the tabulator line. When the user presses the function key TAB the tabulator line is displayed on the screen, on the line containing the cursor. The tabulator line will look something like this :

```
L-------T-------T-------T-------T-------T-------T-------T----X---R----
```

If the editing parameter "Tab. with number line" is set to ´Y´ for Yes, a number line will be displayed immediately above the tabulator line. In the case where the cursor was positioned on the top line of the screen when TAB was pressed, the number line will be shown on the second line of the screen.

The letters in the tabulator line have the following meaning:

´L´ designates the left margin stop.
´T´ shows the position of a tabulator stop. Press Tab and the cursor moves to the nearest tabulator stop to the right of the current cursor position.
´X´ is only used in connection with reformating of the text, and determines together with the right margin, the zone within which, the text on a line must end (see section 4.29).
´R´ Designates the right margin stop.

The user may now alter the tabulator line: the cursor can be moved to those positions in the tabulator line to be changed, tabulator stops, the left and right margin may be inserted or removed. The cursor may be moved using the following keys: ->, <-, E.O.L. , S.O.L. and Tab. Note that the Tab key on the keyboard always moves the cursor 8 character positions to the right when the tabulator line is being altered. The user may set the ´L´, the ´R´, the ´X´ and the ´T´s as required, but the ´X´ must always be placed at least 2 character positions to the left of the ´R´, (a word cannot be hyphenated if there is not room for at least one letter and the hyphen). The ´L´ must always be to the left of the ´R´.

Both capital and small letters may be used when making alterations, all characters other than R, L, X and T are ignored. This means that blank characters, for example, may be used to remove unwanted tabulator stops.

When the alteration is complete the user presses RETURN, and the edited tabulator line is shown on the screen. Pressing RETURN once again causes the tabulator line to disappear from the screen. (The user may avoid displaying the edited tabulator line by pressing ESCAPE instead of RETURN).

All small letters are replaced by capitals in the edited tabulator line, and all unrecognised characters are replaced by hyphens. The editing program always uses the R, L and X which are positioned leftmost in the tabulator line, - this means, for example, that the user need not delete the ´L´ in character position 10, when the new left margin is to be in character position 1.

The editing program has two standard settings for tabulator stops and margins: - Standard or Document positions. The user may choose these by writing a ´S´ or a ´D´, respectively, in the first position in the tabulator line when the tabulator line is being altered. When the user presses RETURN the tabulator line will show the standard positioning:

Standard : Left margin in position 1.
Right margin in position 78 (i.e. full screen width).
Tabulator stop in every 8th position.
The ´X´ in position 73.

Document: Left margin in position 1.
Right margin in position 62 (corresponds in general to the printout on a letter quality printer).
Tabulator stop in every 8th position.
The ´X´ in position 57.

The tabulator line is stored together with the text parameters, i.e. the latest defined setting of the tabulator line is stored together with a text on the disk.

4.36 The function key CALCULATE.

This key is used to start or stop the calculator module of WordWork. When the calculator module is in function the first two lines of the screen are used by the calculator module - the top line is the calculation line, whilst the next line is used to separate the calculation line from the rest of the text. A detailed description of the use of the calculator module is given in chapter 6.

4.37 The function key REPEAT.

The user may repeat the function of a key either by holding the relevant key down, or by using the function key REPEAT. The last method has the advantage of defining how many times the relevant key is to be repeated.

A key is repeated by pressing the function key REPEAT and then entering the number of times the key is to be repeated. The entered number is shown in the top right-hand corner of the screen, and may not be greater than 9999. If the user regrets the repetition, ESCAPE may be used and the repetition is abandoned, whilst an incorrectly entered repetition factor may be altered by pressing REPEAT once more with the correct figure.

The next key the user presses will be repeated the required number of times. Some examples are illustrated in the following:

REPEAT 15 x	: gives 15 ´x´s from the cursor position.
REPEAT 40 !	: moves the cursor down 40 lines.
REPEAT 5 INSERT LINE	: executes INSERT LINE 5 times.
REPEAT 3 NEXT PAGE	: go 3 pages (of 24 lines) on.
REPEAT 10 REPLACE	: executes 10 replacements.

When the repetition command is used together with the functions: NEXT PAGE, PREV. PAGE, arrow up, arrow down or RETURN, ´wait´ will appear in the top right-hand corner of the screen whilst the text on the screen is replaced. ´wait´ disappears from the screen when the editing program is ready again.

Note: if FIND or FIND AGAIN are repeated, the editing program does the following: when the command is to be executed N times, it is the Nth occurrence of the search string that is found, i.e. REPEAT 6 FIND AGAIN means that the 6th occurence of the search string is found.

The functions for the following keys cannot be repeated using the REPEAT function: LAST PAGE, FIRST PAGE, E.O.L., S.O.L., OPEN LINE, MARK, REFORMAT, RIGHT JUST(IFY), READ FROM FILE, WRITE TO FILE, INFORMATION, TAB, CALCULATE and TERMINATE.

4.38 The function key TERMINATE.

An edit is terminated by pressing the function key TERMINATE. The screen then displays the following text:

```
                WordWork EDIT - TERMINATED

  Should the edited text be saved? Select one of the following:
    ´S´ - save edited text with the Same name as read.
    ´N´ - save the text with a New name.
    ´O´ - Operator determined text save.
    ´ ´ - Do not save the text.

  What shall be done next ?
    ´P´ - Print file with standard settings.
    ´E´ - Edit new text.
    ´R´ - Return to main command level.
    ´ ´ - Continue editing same text.

  A legal command consists of two letters.
  Enter command:
```

The user must decide two things : 1) what is to happen to the text, and 2) what the computer is to do next (editing, printing etc.).

If the user wishes to store the text which has just been edited on a disk, one of the three commands, S, N or O, must be given to the editing program. These commands are explained below:

´S´ : The edited text has been read in from the disk and is to be restored on the disk using the same name, i.e. the new version of the text overwrites the old version on the disk. This command is only valid if the now edited text was read from the disk. The user can approve (by pressing RETURN) or reject (by pressing ESCAPE) the text name when this name is displayed on the screen.

´N´ : The edited text is to be stored using a name which does not already exist on the disk. The text is either newly entered or an existing text which is to be stored using a new name. The user is later given the opportunity of altering or entering the text name.

´0´ : The user (the operator) controls how the text is to be stored on the disk, i.e. the user can define the number of sectors, each containing 256 characters, to be reserved for a new text. If, for example, 10 sectors are reserved and these are not enough, the system will take 10 more sectors for the text, and so on. The user may always alter the text name when using the ´0´ command. (For the ´N´ command, 10 sectors of 256 characters are reserved automatically for the text; as this may be increased up to 60 times, the complete text could be up to (60+1)*10*256 = 156,160 characters, i.e. about 2,000 lines).

The text processing system can then execute one of the four following functions after the function key TERMINATE has been pressed:

´P´ : The edited text is output on the printer without first being stored on the disk. The contents of the two working areas, (see section 4.1) are printed on the printer using the printing parameters for the text (see section 4.33). The text need not be stored before it is printed, as the editing program will display the TERMINATE menu again after the printing, and then the user may decide whether the text is to be stored.

´E´ : This command makes it possible to start editing another text without having to return to WordWork´s main command level. A new edit should not be started before the text just edited is stored on the disk, otherwise this text will be lost.

´R´ : The edit is terminated and control is returned to WordWork´s main command level; this should not occur before the text just edited has been stored on the disk, otherwise this text will be lost.

´ ´ : The editing of the current text continues. This command makes it possible to store the text on the disk during the editing session and then continue to edit by entering ´S´, for example.

When the required command is entered (this may consist of 0, 1 or 2 characters) followed by RETURN, the editing program will execute the necessary functions.

If the text is to be stored on the disk, the editing program will show the text name. With the ´N´ and ´0´ commands the user may

alter the name before pressing RETURN. If the user has changed his mind about saving the text, ESCAPE may be pressed, then the editing program will again ask "Enter command:"

If the editing parameter "Store information" has the value 'Y' for Yes (normally the case - see section 4.33), the user may now enter a short text note of up to 40 characters. This note may contain keywords from the text, for example. The note is shown in the catalogue listing of the disk (see chap. 10). If the text already has a text note, this is shown and the user may alter it as required. When the text note is correct, RETURN is pressed and the text is stored. While this is executed a message appears on the bottom of the screen relating how many lines are being output to the disk.

4.39 Entry of "text replies".

In many situations, the editing program expects replies from the user in the form of a word or a name, for example:

"Name of text :" ,
"Enter text string :" and
"Enter text note :" .

The user then must enter the appropriate reply and press RETURN.

The following editing keys: ->, <-, E.O.L., S.O.L., INSERT CHAR, DELETE CHAR and Tab (Tab will not follow the tabulator line the cursor will always be moved 8 characters to the right), have a function when a reply is entered.

4.40 Entry of "numeric replies".

The user must enter a number several times to the editing program in response to a query; for example, the queries

"From line" ,
"Left margin" and
"First page"

require a "numeric reply". The entry of numbers is effected by using the numerical keys. If a mistake is made or a value is to be altered, Rub is pressed which sets the number to zero and a new value may be entered. When the entry is complete, RETURN is pressed.

If the user presses ESCAPE the editing program will abandon the function being executed, for example, the READ FROM FILE function will not be executed if the user presses ESCAPE in response to the query "To line ".

The reply to the query "Number of sectors ?" (with Operator con-

trolled storage of text) is not entered as a number, but as a text (see section 4.39).

5. The WordWork printing module.

There are two methods of printing texts on the printer: one, a text stored on the disk may be printed using a command in the main command level of WordWork (section 5.2), and two, a text may be printed during an editing session (section 5.4).

5.1 Printing parameters.

In WordWork the output of a text on the printer will always be executed by WordWork´s printing program. To be able to print a text the program must know, for example, the format of the output on the paper, which printer to be used and the page number, if any. This information is defined by the printing parameters. Normally there are a set of editing parameters and a set of printing parameters connected to a text (see ch. 3 and section 4.33). When a text is printed, the printing is controlled by the printing parameters for the text; if these do not exist, the printing parameters belonging to the operator are used instead. Printing parameters may be in text or numeric form and are entered / altered as described in sections 4.39 and 4.40.

The printing parameters are now described in detail :

Printer number : The number of the printer to be used for the output. For installations with only one printer, the printer number is 1, whilst for text processing installations with several printers, the number may be from 1 to 4.

Paper feed : The paper may be fed into the printer in 3 different ways:

1. enter ´T´ for Tractor when the printer uses continuous stationery (i.e. the single sheets are joined together).
2. enter ´S´ for sheet feed when the printer is supplied with single sheet feed (with loose A4 paper, for example). (When using a single sheet feeder the printer will always begin with a page change to ensure that there is a piece of paper in the feeder before printing starts.)
3. enter ´M´ for Manual paper change, i.e. the user personally inserts each sheet of paper in the printer. (With manual paper feed the printing program stops when the printing of a page is complete, and waits until the user inserts a new sheet of paper before continuing with the next page.)

Print memory bank : As stated in "Introduction to WordWork" section 2.1, some text processing installations are equipped with an extra user memory without a corresponding terminal; this may be used when printing. The user can initiate the printing program in the background bank by entering the number of the bank ; the user may then work at the terminal whilst a text is being printed - this is called parallel printing. When parallel printing is not to be used to print a text, the character '*' is entered to inform the printing program that the user memory related to the terminal is to be used.

Standard : The user may choose one of three settings for the no. of characters per inch and line spacing, respectively. These are called 'BI' for 'BIg', 'MI' for 'MIddle' and 'SM' for 'SMall'. The user may also determine the number of lines per inch and the line spacing by not choosing any of the 3 standard settings, (- this is done by entering two spaces instead of BI, MI or SM). The 3 standard settings give:

BIg : 10 characters per inch (10 pitch).
4 lines per inch (line spacing 6/24").

MIddle : 11 characters per inch (11 pitch).
$4\frac{4}{5}$ lines per inch (line spacing 5/24").

SMall : 12 characters per inch (12 pitch).
6 lines per inch (line spacing 4/24").

Characters per inch : The user may define the number of characters per inch. For letter quality printers only 10, 11 and 12 characters per inch will be relevant, but the user may enter other values on condition that the print wheel on the printer caters for them.

Line spacing : The line spacing may be specified in 24ths of an inch.

Left margin : Left margin defines the first character position to be written on the paper. Not only does left margin determine the position of the text on the paper, but also the horizontal position of headings and page numbers (in contrast to the ..MA command - see section 5.5.2). The left margin is defined as 24ths of an inch, but is only set with 1/12th of an inch accuracy, i.e. a left margin of 22/24" and a left margin of 23/24" give the same left margin.

Distance to first line : This value defines how far down on the

paper the first line is to be written. It is measured as the distance from the position where the printer would automatically start printing on a page after a page change, to the position where the user requires the printer to output the first line. The value is used, for example, to move the first line down from the top edge of the paper when using a single sheet feeder. The value is defined in 24ths of an inch.

Distance to last line : States how far down the paper the last line may be written. The value is measured (as for ´distance to first line´) from the position on the paper where the printer would automatically write after a page change. The value is defined in 24ths of an inch.

Page no. : The printing program can automatically number the pages in sequence. The page number to be placed on the first page is stated here. Normally a page number is a digit, but it may also consist of a series of letters followed by a digit - though the total length of the page number must not exceed 16 characters. E.g. a page number may be "5.1", "Page 1", "1 " or " 1". (The page number "5.1" gives the numbers "5.1", "5.2", "5.3"etc. The last two page numbers ("1 " and " 1") give the same page numbers, but in the latter case, the actual position of the page number is moved 4 character positions to the right.) An empty page number (i.e. with spaces only) is assumed to mean that the pages are not to be numbered.

Position (Top,Bottom) : The page number may be placed either at the top or the bottom of the page. When the page number is on top (´T´ for Top) there will be 1 inch from the page number down to the first line of text. If the page number is to be placed at the bottom of the page (´B´ for Bottom), the distance from the last line of text down to the page number will be at least 18/24". If the pages are not to be numbered, the parameter is ignored.

Position (Left,Right.....) : The page number may be placed on the right-hand side of the page (by stating ´R´), on the left-hand side of the paper (by stating ´L´), in the middle of the page (by stating ´M´) and alternately on the left- and the right-hand side of the paper (´1´ gives left/right, whilst ´2´ gives right/left). If the pages are not to be numbered, the parameter is ignored.

First page : The printing program will normally start numbering the pages from the first page, but if the reply 1 is changed to 0, no number is written on the first page, only on the following pages.

If, for example, the digit 3 is given as reply, the printing module will ignore the first two pages when printing and start printing at page 3. A count will be kept of the page numbers, when pages are to be left out. If, for example, the page number is ´page 1´ and the first page to be output is page 3, the number on this page will be ´page 3´.

Last page : ´9999´ may be altered to a smaller number when not all the pages in a text are to be printed.

Copies : The printing program can print several copies of the text, one after the other, on the printer. This parameter usually has the value 1, but if, for example, a letter is to be merged with a list of addresses, another value should be entered (an illustration of merging is given in section 5.8).

5.2 Printing from the main command level.

Printing may be initiated directly from the main command level of WordWork. This is executed by entering ´P´ followed by pressing RETURN. The name of the text file is then entered followed by RETURN. (The name of the text file may be followed by a colon and the disk designation, as in WWINTR:P2.)

If the query "Standard printing (Y,N) : Y" is acknowledged by pressing RETURN, the printing is controlled by the text printing parameters, (if these do not exist, the operator´s printing parameters are used). If ´Y´ is altered to ´N´ before RETURN is pressed, the printing parameters are displayed, and the user has the opportunity of setting them one after the other. These parameters are then used to control the output of the text on the printer. The user and the text parameters are not altered by this action, i.e. this particular set of printing parameters is used only once. (The text printing parameters can only be altered during an editing session - see section 4.33).

For a standard printing the following text is displayed on the screen : (The replies entered by the user are underlined.)

```
**************************
* WordWork PRINT utility *
*      Version 3.        *
**************************

Enter text name    : WWINTR:P2
Standard printout (Y,N) : Y     <—(only RETURN used here.)

The text is being printed
```

For printing where the user sets the printing parameters, the following example of the display on the screen is given:

```
**************************
* WordWork PRINT utility *
*      Version 3.        *
**************************

Enter text name    : WWINTR:P2
Standard printout (Y,N) : N
Enter number of printer : 1
Paper feed (T - Tractor, S - Sheet feed, M - Manual) : T
Number of print memory bank  or '*' for own bank : *
Standard ( SM, MI, BI) :
Print pitch (10 ,11 ,12 ): 11
Line height  ( 1 / 24 ")  :  6
Left margin ( 1 / 24 ")   : 10
Distance from top of page  to - first line :    0
                                last line  :  246
Page number : 5.1
Position of page number : T - Top , B - Bottom of page : T
L - Left, R - Right, M - Middle, 1 - left/right, 2 - right/left : R
Number of first page to print :    1
Number of last page to print  : 9999
Number of copies :    1
The text is being printed
```

5.3 Printing of paragraph characters and hyphens.

The paragraph characters which the user has written in the text are ignored when printing, and are not output. The printing program has access to the information which relates the value of the editing parameter "end of paragraph mark" for the text. Note that the end of paragraph mark will be printed if it is followed by characters other than space on the same line; the user must take care when the text is being set up in columns (see sections 4.26 and 4.29), otherwise the end of paragraph mark will be printed.

The printing program will always output temporary hyphens (shown on the screen by ´_´), and the fixed hyphens (shown as ´-´ on the screen), with the character : ´-´ on the printer. This is so, regardless of the position of the hyphens in the text.

5.4 Printing directly from the editing program.

When the user edits a text this may be printed at the printer without being stored on the disk first, as the printing program can print the contents of the two working areas the editing program uses (see section 4.1).
Printing is initiated by pressing the function key TERMINATE and then entering a ´P´ for printing (see section 4.38). The text will then be printed using the text printing parameters, these may be set by the user with the functions SPECIAL and INFORMATION (see section 4.33).
When the printing program has finished, the editing program rereads the text and shows the TERMINATE menu once more. Pressing RETURN causes the text to reappear on the screen and the editing session may continue. (Note that the text printing parameters are only altered on the disk when the text is stored on the disk by entering ´S´ or ´0´ in the TERMINATE function.)

5.5 Control of the printing.

The user has the possibility of specifying the format of the printout within the actual text. It is possible to define the headers for the pages, titles for paragraphs, page changes where required, get the text moved up or down a half-line and to alter the printing parameters within the text.
This facility is is made possible by the insertion of lines with commands for the printing program. These lines are called period commands and they will be described in detail in the following sections. Chapter 9 of the "Introduction to WordWork" gives a brief

description of all the printing commands.

All period commands, except those for overprinting (..OP commands), must begin in the first character position of a line, and usually there is nothing else on the line except the command itself. The commands may written with both capital and small letters. The printing program does not output the period commands on the printer, but if the program does not recognise a command as being valid, this command will be printed.

5.5.1 Characters per inch and line spacing.

The user may choose one of three sets containing values for characters per inch and line spacing respectively (see under Standard, section 5.1). These three sets exist as period commands:

..BI	BIg setting	: 10 characters per inch. line spacing 6/24".
..MI	MIddle setting	: 11 characters per inch. line spacing 5/24".
..SM	SMall	: 12 characters per inch. line spacing 4/24".

The number of characters per inch and line spacing may also be altered individually:

..CW nn	Character Width	: Print with nn characters per inch.
..LH nn	Line Height	: Print with line spacing of nn/24".

5.5.2 Margin.

Using this period command, the user may alter the left margin for the text on the paper whilst it is being printed. The printing parameter Left Margin (see section 5.1) sets a fixed left margin on the paper. This margin is used to define the position of headers, page numbers and the text; but the left margin for the text may be altered - i.e. the text is pushed further to the right or the left on the paper, whilst printing is being executed. This does not affect the position of headers or page numbers on the page. As for Left Margin, the margin will be set with the accuracy of 1/12" even though it is stated as 24ths of an inch.

..MA nn	MArgin	: Margin for the text is set nn/24"

to the right of the left margin on the paper.

5.5.3 Last line on the page.

The printing parameter which defines the distance from the top of the page to the last line (see section 5.1), may be altered by a period command.

..LL nn Last Line : The last line on the page is to be nn/24 inches down the page. (Measured from that position at the top of the page where the printer would automatically start printing after a page change).

5.5.4 Headers.

The printing module can print up to three header lines on a page automatically. Each of these headers may contain a maximum of 53 characters, (- excess characters are amputated). The header lines are numbered 1 to 3, and the line height of each of the header lines is 4/24 inches. The distance from the line with header 1 to the first text line on the page will always be 1 inch. If there is page numbering on the top of the page, the number will be placed on the same line as header 1, unless the number is to be placed in the middle of the page. In this case the header lines are pushed down one line.

When header 1 has no value or is empty, headers 2 and 3 will only be printed if there is a page number at the top of the page.

If a header is required on the first page, the header commands must appear as the first lines in the text - there must not be lines of normal text in front or the headers will first be printed on page 2.

..HE1 HEader 1 : The text on this line is header number 1. It is automatically printed at the top of each page.

..HE2 HEader 2 : The text on this line is header number 2. It is automatically printed at the top of each page.

..HE3 HEader 3 : The text on this line is header number 3. It is automatically printed at the top of each page.

5.5.5 Title of a paragraph.

When writing reports, for example, it is often required that the title of a paragraph is underlined and that the paragraph does not begin at the very bottom of the page. The following command caters for these demands:

..TI	TItle of a paragraph	: The text on this line is the title of a paragraph and is printed underlined. If there are fewer than 5 lines remaining on the page the page is changed automatically before the paragraph is printed.

5.5.6 Page change.

The user can both inform the printing module to change the page at a fixed place in the text, and to start a new page if there are fewer than a fixed number of lines left on the current page.

As empty lines at the top of the page are automatically removed, (also after a user defined page change), the user may insert a command which suppresses this mechanism - the command (..BL) must occur immediately after the page change command and will only be relevant for this page change. The command (..BL) has no effect on the first page of the text - here the user must use the ..PL command instead (see section 5.5.7).

..PA	PAge	: Change page.
..CP nn	Conditional Page	: Change page if there are less than nn lines left on the page.
..BL	Blank Lines	: Do not suppress blank lines at the top of the page. (inserted after a ..PA or a ..CP command).

5.5.7 Absolute placement.

The user can command the printing module to move down the page to a defined vertical position. The command has no effect if the printing is already further down on the page.

..PL nn	PLacement	: The next line is to be placed nn/24" down the page - measured from the top line of the page.

5.5.8 Overprinting

When, for example, m^3 or H_2O_2 are to be printed, overprinting of the line must be executed - half a line up and half a line down, respectively. It is also possible to overprint the actual line to obtain such combinations as ü, é and â, for example.

The overprinting commands do not have to be placed at the beginning of a line - i.e. the printing module will recognise an overprinting command regardless of its position in a line.

..OP	OverPrint	: The text on this line is printed over the next line.
..OP+	OverPrint	: The text on this line is printed half a line above the next line.
..OP-	OverPrint	: The text on this line is printed half a line below the previous line.

Example: The user wishes to write m^2 and H_2O on a line. The contents of the text are as follows:

```
                                        2 .. op+
The pupil should learn that H 0 and m  are not the same.
                                   2   .. op-
Thus the teacher must ensure.....
```

On the printer this text appears as follows:

The pupil should learn that H_2O and m^2 are not the same.
Thus the teacher must ensure.....

5.5.9 Inclusion of texts.

While printing one text, the contents of another text may be included. The included text may contain period commands, but if the include command (..IN) occurs it will be ignored.

..IN NAME INclude text : Include the contents of the text with name NAME at this point in the printing.

5.5.10 Comments.

The user may insert lines with comments in the text. The text on these lines is not printed.

..CO Comment : The text on this line is a comment, it is not to be printed.

5.5.11 Break printing.

If the user wishes to interrupt the printing at a defined point, for example to change the print wheel, a break printing command must be inserted in the text. The text on the command line is displayed on the terminal, and the printing module continues when the operator (the user) presses the RETURN key.

..BR ttt BReak printing : Printing is stopped and the text ttt is displayed on the terminal.

5.5.12 Special printer.

If the printing module is to use a printer which does not behave as the ´normal´ letter quality printers (Diablo and Triumph), the user will be interested in inserting those characters which are to be sent to the printer. This is done by using the special printer command.

..SP a,b.. SPecial printer : The characters which have the decimal values stated on the command line are sent to the printer. The numbers must be separated by commas, and blank characters must not occur in the line.

5.5.13 Merge commands.

Using merge commands in the printing module it is possible to merge, for example, a letter with an address list. An illustration of this is given in section 5.8. The merge commands are as follows:

..ME NAME MErge with text : The text file with the name NAME is to be read from, when merging.

..GE GEt from merge file : Read one line from the merge file and print it. The merge text must not contain commands, (these are not recognised by the printing module).

..GE- GEt from merge file : Read one line from the merge file but do not print it.

5.5.14 Lines of more than 78 characters.

If a line ends with '++', then the following line will be printed as a continuation of the current line. Thus the user may write lines of more than 78 characters to the printer. Note that a maximum of 130 characters is allowed on one line.

Example: If the text contains the lines :

```
This is a line with text, ++
and so is this.
```

the output on the printer will appear thus :

```
This is a line with text, and so is this.
```

5.6 Termination of printing.

If printing is to be stopped, the user may press the ESCAPE key and the printing module will stop printing and ask what is to happen next.

If the printing was initiated from WordWork's main command level, the following message will appear :

```
Print again (P) or Return to main command level (R) : R
```

If the user presses RETURN, WordWork's main command level menu will appear on the screen. If 'P' and RETURN are pressed the text will be printed once again from the beginning.

If the printing was initiated from the editing module (via TERMINATE) the printing module will ask :

```
Print again (P) or return to the editor (E) : E
```

If RETURN is pressed, the TERMINATE menu for the editing module

will appear on the screen, but if ´P´ followed by RETURN is entered the text will be printed from the beginning.

As many printers (e.g. the Diablo printer) have an internal memory to store the characters to be output, it may take up to 30 seconds before a message from the printing module is displayed on the screen. This is caused by the printing module having to wait until the printer is ready before the printing can be stopped. (This pause may be eliminated with the Diablo printer by pressing the key on the printer marked "BREAK" - this clears the printer memory)

The user cannot interrupt printing when parallel printing is used (see under "Memory bank" in section 5.1).

5.7 Printing on the screen.

When the text is printed out, it will automatically be divided into pages. If the user wants to control this chaning of pages, he can so by inserting the ..PA and ..CP commands in the text (see section 5.5.6).

It is possible for the user to see how much text is written on a page, before it is printed on the printer. This is done by selecting printer number 0 (see printer number in section 5.1). Then the text is printed on the screen instead of on the printer - the user is now able to see the text on each page.

The printing on the screen is temporarily stopped by pressing the ESCAPE key, and it will continue whan the user presses the RETURN key. The printing is terminated (as described in section 5.6) if the user presses the ESCAPE key twice.

5.8 Merging.

This section illustrates a method of merging two texts whilst printing. A letter that is to be sent to a series of different people has been chosen as an example.

The letter is stored in the text file with the text name DBLETTER and contains the text:

```
..ME ADDRESS
..GE
..GE
..GE
..GE

att.       .. OP
..MA 12
..GE
..MA 0
                                        Herlev, 22/5-1982.

We can hereby inform you that the goods ordered will be delivered
..GE
If this is not convenient, please contact us as soon as possible.

              Yours sincerely
              The Danish Locomotive Co. Ltd.

              Per Nielsen.
```

The names and addresses that are to merged with the letter are stored in the text file ADDRESS.

```
Danish Railways
Sølvgade 2
1307 Copenhagen K

Erik Klausen.
30th August 1982.
Herlev Railway Club
c/o Peter Christensen
Ved Havnen 3
2730 Herlev
Peter Christensen
12th August 1982.
```

If the textfile DBLETTER is printed in 2 copies (printing parameter 'copies' is 2), the following two letters will be printed:

Danish Railways
Sølvgade 2
1307 Copenhagen K

att. Erik Klausen.

Herlev, 22/5-1982.

We can hereby inform you that the goods ordered will be delivered 30th August 1982.
If this is not convenient, please contact us as soon as possible.

Yours sincerely
The Danish Locomotive Co. Ltd.

Per Nielsen.

Herlev Railway Club
c/o Peter Christensen
Ved Havnen 3
2730 Herlev

att. Peter Christensen

Herlev, 22/5-1982.

We can hereby inform you that the goods ordered will be delivered 12th August 1982.
If this is not convenient, please contact us as soon as possible.

Yours sincerely
The Danish Locomotive Co. Ltd.

Per Nielsen.

(The text is printed with 12 characters per inch.)

6. The WordWork calculator module.

WordWork´s editing program contains a calculator module which can operate on those numbers entered by the user in the text being edited. As well as the usual operations (addition, subtraction, multiplication and division), the calculator module can also execute row and column operations. The calculator module functions in a manner similar to a pocket calculator - there is an accumulator containing a value; this value is calculated upon according to the operation involved.

6.1 Start and stop of the calculator module.

The calculator module is started and stopped during an editing session by pressing the function key CALCULATE. When the calculator module is in function only 22 lines of text appear on the screen, as the two top lines are used by the calculator module. The top line, called the calculation line, contains information concerning the calculator module, whilst the next line separates the calculation line from the rest of the text. Even though only 22 lines of text appear on the screen, the editing program will function as though the user had 24 lines. This is caused by the calculation module overwriting the two top lines of the 24 lines displayed by the editing program on the screen. It is possible for the user to see the contents of the two top lines by taking the cursor to the top of the screen with the up arrow key and causing the lines to be rolled down. (The Home key may not be used as this key has special significance - see section 6.2). The user cannot read the first two lines of a text whilst the calculator module is in function, as these two lines cannot be rolled down. It must also be noted that pressing NEXT PAGE, for example, will always give the next 24 lines of text, even though the first two lines of these are not visible as they are overwritten by the calculation line and the separating line.

When the calculator module is in use the following editing functions are not available: REFORMAT, RIGHT JUST., READ FROM FILE and WRITE TO FILE. In order to obtain these facilities again, stop the calculator.

6.2 The calculation line.

When the calculator module has been started, the top line of the screen (called the calculation line) contains data concerning the calculator module. The left part of the line always shows the accumulator, and the right part shows either those commands which are valid for the calculator module or messages for the user.

The left part of the line always shows the accumulator:

"Accumulator : 123456.78 "

In sections 6.4 and 6.5, a description is given concerning the definition by the user of the number of decimal digits used in the accumulator as well the character, (full stop or comma), which is to separate the integer part and the decimal part of the numbers.

When the calculator module is started the right part of the calculation line contains the following text:

"Command : + - * / = ^ "

This text relates that the characters ´+´, ´-´, ´*´, ´/´, ´=´ and ´^´ have a special meaning (see section 6.9).

When the user presses the Home key, the right part of the calculation line contains the following text:

"Command : -> <- <ENTER> Row Column"

The calculator module now expects one of the following in reply: right arrow, left arrow, ENTER, ´R´ or ´C´. A detailed description of the various functions is given in the following sections.

6.3 The pause mode.

The calculator can be put into a pause mode where the characters ´+´, ´-´, ´*´, ´/´, ´=´ and ´^´ are treated as normal characters and not as commands. The right part of the calculation line is empty.

The calculator enters the pause mode when the Home key followed by the left arrow key are pressed. The calculator remains in the pause mode until the user presses the Home key followed by the right arrow key.

6.4 Precision / number of decimals.

The calculator module works with 13 significant digits, and the user defines how many of these digits are to be used as decimals (may be from 0 to 9). The more decimal digits used the smaller the integer part. For example, if the user chooses 8 decimals, the largest integer part that can be represented is 99999.

The number of decimals is set (after the calculator is started) by pressing INFORMATION key followed by ´D´. The new number of decimals is entered followed by RETURN . The accumulator is now displayed with the new number of decimals. If the accumulator contains a value where the integer part is too large (with the new number of decimals), the user receives a warning message and a new and smaller number of decimals must be entered. Immediately after starting, the calculator will always use two decimals.

Note that the calculator often uses more decimals for internal calculations than appear on the screen. The reason for this is that the calculator normalises numbers to the form 0.xxxxxxxxxxxx * 10^{y} where ´x´ is a digit and ´y´ is a number between 0 and 13. The value in the accumulator corresponds to the value represented internally by the calculator and rounded to the number of decimal digits required. If the accumulator shows ´23.45´, for example, the internal value in the calculator may be in the range 23.44500000000 to 23,45499999999. Normally it is only when a division operator has been used, that the number of internal significant decimals is greater than the number of decimals in the accumulator.

6.5 Decimal point /comma.

The calculator can work with values in two notations: English and Danish. Danish notation uses a comma (´,´) to separate whole values from decimals, where English notation uses a decimal point (´.´). The user may specify in the editing parameters which notation is to be used. It is only possible to specify the calculator notation when the calculation module isn´t started. The SPECIAL and INFORMATION function keys are used, the editing parameter "Aritmetic (English,Danish) : " is set to ´E´ for English or ´D´ for Danish (see section 4.33.3 for more details).

6.6 The position character.

The calculator can put a position character for every thousand in in a whole number, for example the value ´23,232,294.71´. With English notation the position character is a ´,´, with Danish notation a ´.´.

Any number the user has written or entered may contain position characters - but it is not necessary. The accumulator is never displayed with position characters, but when the value of the accumulator is output in the text by pressing ´=´ (see section 6.10), the calculator may write the number with position characters.

Initially the calculator will not output position characters in the numbers, but the user may specify that the position character is to be used by pressing the INFORMATION key followed by ´P´. The reply to the query "Position comma (Y,N)" is then changed from ´N´ (for No) to ´Y´ (for Yes) and RETURN is pressed.

6.7 The decimal tabulator.

When the calculator is in use the tabulator acts as a decimal tabulator. All the tabulator stops (the Ts in the tabulator line) will act as decimal tabulator stops.

The decimal tabulator functions as follows : - when the user presses the Tab key the cursor moves to the right to the next tabulator stop, and the message ´no.´ appears in the top right corner of the screen. The number which is now entered is automatically placed so that the whole part of the number is on the left of the tabulator stop, the decimal point (or comma) is on the tabulator stop and the decimals are on the right of the stop. Thus it is easy to enter numbers in columns.

The position of the tabulator stops is used in connection with row and column operations (for more details see sections 6.11 and 6.12).

6.8 Calculation on the calculation line.

The calculator can work with numbers in the text or with numbers entered directly into the calculation line. The latter method will be described in this section.

When the user presses Home the cursor is moved to the right side of the calculation line, and (as described in section 6.2,) the text in the calculation line appears as:

"Command : -> <- <ENTER> Row Column"

If the user presses the ENTER key, the right part of the calculation line shows:

"Enter a number : "

The user may now enter a number. The maximium number of digits in

the integer part is defined by the fact that this plus the number of decimal places must be less than or equal to 13, (as described in section 6.4). The integer part and the decimal part must be separated by the decimal character defined by the user (´English notation´ or ´Danish notation´). The number of decimals must be less than or equal to the chosen number (see section 6.4). If the number does not contain decimals, only the integer need be entered.

The entry of the number is terminated by pressing RETURN, the right side of the calculation line will then show:

"Command : + - * / ^ <esc> "

The user may now enter the operation which is required to be executed on the number. The possible operations are:

´+´ : The number is added to the accumulator.
´-´ : The number is subtracted from the accumulator.
´*´ : The accumulator is multiplied by the number.
´/´ : The accumulator is divided by the number.
´^´ : Transfer the number to the accumulator.
<esc> : The number is not to be operated upon.

When the operation is completed, the right side of the line will again show the message:

"Command : -> <- <ENTER> Row Column" ,

and now the user may either continue executing operations or move the cursor down into the text again by pressing the right arrow key (continue calculation). (The left arrow also moves the cursor down into the text, but the calculator module is then in pause mode (see section 6.3)).

The user may enter the required operation immediately after the entry of the number and before pressing RETURN, thus omitting the message with the arithmetical operators.

Note: It is not possible to stop the calculator module when the cursor is positioned on the calculation line; if it is required to exit from the calculator module, the user must ensure that the cursor is positioned down in the text, by pressing the right or the left arrow key if necessary, and then the SHIFT and CALCULATION keys.

6.9 Calculation with numbers in the text.

Apart from operating on numbers entered in the calculation line, the calculator can also operate on numbers present in the text. This method is described in the following section.

If the calculator is to use a number present in the text, this number must have a blank character both before and behind, (i.e. the number is limited by blank characters). As in section 6.8, the number has a fixed maximum number of digits in the integer and the decimal parts. The cursor is moved to the character which separates the integer and decimal parts, then the required operation key is pressed. If the number does not contain a decimal part, the cursor is placed immediately after the integer.
The valid arithmetical operations are displayed on the right side of the calculation line:

'+' : The number is added to the accumulator.
'-' : The number is subtracted from the accumulator.
'*' : The accumulator is multiplied by the number.
'/' : The accumulator is divided by the number.
'^' : The number is transferred to the accumulator.

The decimal tabulator simplifies the use of an entered number in a calculation : - when Tab is pressed the message 'no.' appears in the top right corner of the screen and the decimal tabulator is in function. The user enters a number and whilst the message 'no.' appears on the screen, the calculator will operate directly on the number when the user chooses one of the above operations, despite the position of the cursor - this is moved automatically to the correct position (the decimal point/comma), before the operation is executed.

6.10 Entry of the accumulator contents in the text.

The calculator can enter the contents of the accumulator into the text. The cursor is positioned at the place where the value is to be entered. Pressing the key '=' causes the number to be inserted with the integer part to the left of the cursor, the decimal point/comma at the cursor position and the decimal part to the right of the cursor.
The number is always written with the defined number of decimals and will also contain a position character for every thousand if required by the user (see section 6.6).

Note: the calculator enters the contents of the accumulator regardless of what exists at the position of the cursor. The user must thus ensure that there is enough space for the value being entered.

6.11 Row operations.

The calculator can automatically execute an arithmetic operation on a row of numbers. This is done as follows:

The tabulator line is adjusted so that there is a tabulator stop for each number in the row; i.e. in that position which separates the integer part and the decimal part of each number in the row. With a row operation the calculator will only operate on those numbers which are positioned at the tabulator stops. If a tabulator stop is incorrectly placed, the calculator will terminate the row operation with the message "Not a valid number." on the right side of the calculation line (see section 6.13). If the characters at a tabulator stop are empty, this number is assumed to be zero.

The row operation is initiated by pressing Home, the cursor is then positioned on the right part of the calculation line. This contains the message:

"Command : -> <- <ENTER> Row Column" .

Now, if necessary the user clears the accumulator before the row operation; (this is done by pressing ENTER followed by ´^´). The row operation is then started by pressing ´R´ followed by the required operation - all four operations are available. The cursor shows the progress of the calculator as it runs through the row . When the row operation is completed the accumulator contains the result and the cursor is positioned down in the row again.

If the character at, and the character immediately prior to, the cursor position are both blank characters when the user initiated the row operation, the calculator will automatically terminate the row operation by entering the contents of the accumulator at the cursor position. If the character at the cursor position is not blank the result of the row operation is not entered - the user must enter the contents of the accumulator in the text with the ´=´ operation (see section 6.10).

6.12 Column operations.

The calculator can also execute column operations, i.e. work on figures in a column.

It is required that the cursor points to the top number in the column when the column operation is initiated. The calculator stops working when it comes to the end of the figures in the column, i.e. an empty position.

A column operation is initiated by pressing Home, the cursor will then be positioned in the right part of the calculation line. This contains the message:

"Command : -> <- <ENTER> Row Column" .

Now, if necessary, the user clears the accumulator, (this is done by pressing ENTER followed by ´^´). The column operation is then started by pressing ´C´ followed by the required operation - all four arithmetic operations are available. The cursor shows the progress of the calculator as it runs through the column. When the column operation is completed, the accumulator contains the result and the cursor is placed at the first empty position in the column. The cursor can now be moved to the position where the result of the column operation is to be placed, and using the ´=´ operation enters the result in the text.

6.13 Error messages from the calculator module.

The calculator module may output various error messages on the right part of the calculation line. Explanations for these are given in the following:

message:	explanation:
"Illegal number."	The number to be operated on does not obey the rules: 1. The number has not got a blank char. both before and behind. 2. The number of decimals is too large. 3. Integer and decimal part are divided by an incorrect char. 4. The integer is too large (with the defined no. of decimals). 5. The position character is incorrectly placed or is an incorrect character.
"Overflow in accumulator."	The result of an arithmetic operation (usually multiplication or addition) is too large for the accumulator. The number of decimals must be decreased to enable the number to be held in the accumulator. Note: the accumulator is cleared.
"Column position not allowed."	A column operation can only be executed when the tabulator line contains a stop at the character position between the integer and decimal parts of the numbers in the column.
"Division by zero not allowed."	The user has tried to divide the accumulator by the number 0.

7. Copying text files.

The user may copy text files from one disk to another, for example when a seldom used text file is to be moved from a fixed disk over to a diskette.

To copy a text file the command ´C´ followed by RETURN is given in WordWork´s main command level. WordWork´s module for the copying of text files is then initiated.

The user is asked to enter the designation (identification) for the disk to be copied from, and for the disk to be copied onto. The following queries:

"Source disc id : P" and
"Destination disc id : P"

are acknowledged with the designations of the disks. (The disk designations are "P1", ´P2", "P3" etc.).
The message

"Master text name : "

is acknowledged with the name of the text to be copied followed by RETURN. The required text is then copied. The copying is executed in two stages, as both the text and the text parameters have to be copied (see the example below). As the copying begins the program displays the name of the text on the screen, and when the text has been copied the message "copied" appears on the screen; i.e. a text has been copied only when then name followed by the message "copied" appears on the screen. (If the program tries to copy a non-existent text, for example, the message "copied" will not appear).

When the copying of one text file is finished, the program again asks for a text name. A new name may be entered. If the user just presses RETURN (without entering a name), the program will ask for the names of the disks to be copied from/to.

The program is terminated by pressing ESCAPE in response to one of the queries. The menu for WordWork´s main command level then reappears on the screen.

The program enables the user to copy a series of text files at the same time, as it is possible to replace one or more of the 8 characters in the text file name with an asterisk. This asterisk acts as a substitute, and is valid as an arbitrary character at the required position. For example, if the user has a group of text files to be copied, and the names of all of them begin with "WW", they could be copied by entering the name "WW******". If 8 asterisks are entered as a text file name, all the texts on the disk will be copied.

During a copying session the disk being copied to may run out of space. If this happens the program will display the following message on the terminal, for example:

"No more room on P3
Insert new disk at P3 and press RETURN to continue: "

When a diskette is being used for copying, the user may insert a new diskette and copying will continue when RETURN is pressed. If ESCAPE is used instead of RETURN the copying is terminated.

Example: The user requires to copy the text file with the name ABCDEFGH from P1 to P3. The following text will appear on the screen (the data entered by the user is shown underlined):

```
*******************************
* WordWork Text Copy Utility *
*         Version 3.          *
*******************************

Copying from disk  : P1
Copying to disk    : P3
Enter text name  : abcdefgh
ABCDEFGH  K  copied
ABCDEFGH  T  copied
Enter text name  : <ESCAPE>
```

First the text is copied, and then the text editing and printing parameters are copied onto the P3 disk.

Files other than text files (of type K and T) may also be copied. This is effected by entering the name of the file followed by a colon and the type. E.g. WW (of type 1) is copied by entering "WW:1".

8. Deleting text files.

A text file may be deleted by entering ´D´ for Delete followed by RETURN in WordWork´s main command level. WordWork´s module for deleting text files is then initiated.

A text file is deleted by responding to the query

"Master text name :"

with the name of the text which is to be deleted followed by RETURN. The following query appears

"Enter disc identification : P"

the designation of the disk where the text file is stored is given in reply, followed by RETURN. (Disk designations are : "P1", "P2", "P3 etc.)

The program deletes the required text file, and the name of the text is shown on the screen. The deletion is executed in two stages as both the text and the text parameters are to be deleted on the disk. (See the example below).

When one text file is deleted the program again asks for the name of a text file.

The program is terminated by pressing ESCAPE in response to one of the queries. The menu for WordWork´s main command level then reappears on the screen.

The program enables the user to delete several text files at the same time, as it is possible to replace one or more of the 8 characters in the text file name with an asterisk. This asterisk acts as a substitute, and is valid as an arbitrary character at the required position. For example, if the user has a group of text files to be deleted, and the names of all of them begin with "DIM", they could be deleted by entering the name "DIM*****". Be careful : there is a risk that files other than those required may be deleted using this function. Never enter 8 asterisks as all the text files on the disk will be deleted! The user should make backup copies of the disks at frequent intervals.

Example: The user wishes to delete a text file called ABCDEFGH found on the disk with the designation P2. The following appears on the screen (the replies entered by the user are shown underlined):

```
*********************************
* WordWork Text Delete Utility *
*         Version 3.            *
*********************************

Master text name  : abcdefgh
Enter disc identification : P2
ABCDEFGH  K  deleted
ABCDEFGH  T  deleted
Enter text name  : <ESCAPE>
```

First the text is deleted and then the editing and printing parameters for the text are deleted from the disk.

It is possible to delete files other than text files (of type K and T) using this module. This is effected by entering the name followed by a colon and the type. E.g. WWPRIK (of type 1) is deleted by entering "WWPRIK:1".

9. Renaming text files.

The name of a text file may be altered by initiating the program in WordWork for renaming text files : the command ´R´ followed by RETURN is given in WordWork´s main command level.

The user is asked to enter the designation (identification) for the disk containing the text file, in reply to the query :

"Enter disc identification : P".

(The disk designations are "P1", "P2", "P3" osv.).

The old name of the text file is entered in response to the query:

"Enter old text name :" .

Pressing RETURN gives the query:

"Enter new text name :" .

The new name of the text file followed by RETURN are entered in response. The text file is now renamed in two stages, as both the text and the text parameters must be renamed on the disk (see the example below).

When the renaming is completed, the program will again ask for the name of a text file to be renamed. A new name may be entered. If only RETURN is pressed (no name entered), the program will again ask for the name of the disk which contains a file to be renamed.

The program is terminated by pressing ESCAPE in response to one of the questions. The menu for WordWork´s main command level then appears on the screen.

Example: The user requires the text on P1 with the name ABCDEFGH to be renamed as IJKL. The following messages appear on the screen (the replies entered by the user are shown underlined):

```
**********************************
* WordWork Text Rename Utility *
*         Version 3.             *
**********************************

Enter disc identification : P2
Enter old text name       : abcdefgh
Enter new text name       : ijkl
ABCDEFGH  K  new name :      IJKL
ABCDEFGH  T  new name :      IJKL
Enter old text name       : <ESCAPE>
```

First the text is renamed and then the editing and printing parameters for the text are renamed on P2.

Files other than text files (of type K and T) may also be renamed. This is effected by entering the name of the file followed by a colon and the type. E.g. QQ (of type 1) is renamed by entering "QQ:1".

10. Catalogue of text files on a disk.

The catalogue of the text files on a disk may be output either to the terminal screen or to the printer - this output is initiated by entering the command ´L´ followed by RETURN in the main command level of WordWork. The user may choose whether the catalogue listing is to be output to the terminal screen or the printer. If the response to the query

"Output on Terminal or Printer ? T "

is only RETURN, the catalogue will be displayed on the screen (as the program suggests ´T´ for Terminal), whereas if the user enters ´P´ for Printer and presses RETURN, the catalogue will be prined at the printer.

When the printer is to be used for the listing, the user must give the number of the printer in reply to the query

"Enter number of printer desired: ".

The printer in question must be switched on, otherwise the following error message will appear on the top line of the screen:

"**** PRINTER NOT READY ****"

The message disappears again when the printer is ready.

If the printer is of type Diablo, Triumph or Qume, the user will have to reply to the following two questions :

"Left margin (1/24") :" and

"Paper feed (Tractor or Sheet feed) :".

These questions correspond to the same questions asked in connection with WordWork´s printing module (see chapter 5). The left margin is set in 24ths of an inch, and the paper feed is defined as ´T´ for Tractor or ´S´ for sheet feed.

Finally the designation of the disk, for which the catalogue listing is to be output, is given in response to the query

"Enter disk identification : P" .

(The disk designations are "P1", "P2", "P3" etc.). The designation of the disk is followed by RETURN.

If you want a total catalogue printout, you press the RETURN key, if not you type "N" for no - to the following question:

"Complete catalogue printout (Y,N) : "

If you only want a minor catalogue, you can choose between a catalogue determied by a text name or by an operator name. The question asked is:

"Catalogue determined by name of operator or text (O,T) : O"

If the user replies by pressing the RETURN key, the catalogue printout will show the texts, which have a certain operator name. the operator name is entered as an answer to the question:

"Enter name of opeartor : DDE"

A catalogue determined by a text name is obtained by changing the "O" to a "T" in the above mentioned question. Then you will be asked to :

"Enter name of text : "

Finally press the RETURN key.

It is possible to get a catalogue printout of texts having names starting with for instance the letters "KL" by entering the text name "KL******". The asterisk acts as a substitute, and is valid as an arbitrary characterat the required position. This can also be used in connection with the entering of an operatot name. For instance the operator name "***" result in a total catalogue printout.

For each text file a catalogue listing contains : the name of the file, the date when the text was last altered, the text note (entered when the file was stored - see section 4.38), the number of lines in the text file, the name of the operator who last altered the text and finally, the version number of the text file (an example is given on the next page). The listing is terminated with data concerning the disk label, date of the last security backup and the number of unused sectors (each 256 characters) remaining on the disk - i.e. how much space left on the disk.

If the text note states "No information found.", the reason may be that the editing parameter "Save informations (Y,N) :" was ´N´ (for No) when the text was edited. The text note "Only old information found." relates that the text file has been edited with a previous version (1.x or 2.x) of WordWork´s text editing module. A listing of, for example, the disk containing the WordWork programs will show that for each of the programs in WordWork there exists both a program and a P-code with the same name; (the P-code is used as data for the program.)

The output of a catalogue listing may be terminated by pressing an arbitrary function key. When the catalogue listing is complete or has been terminated, the message "Press RETURN : " will appear on the terminal screen. The menu for WordWork´s main command level will reappear on the screen when RETURN is pressed.

Example: The user requires a catalogue listing for P1 output on a Diablo printer with sheet feed:

```
**********************************
* WordWork Disk Catalogue Utility *
*          Version 3.             *
**********************************

Output on Terminal or Printer? p
Enter number of printer desired:  1

Left margin  (1/24" ) :           8
Paper feed ( Tractor or Sheet feed ) : s
Blank lines at the top of the page :   3

Enter disk identification : P1

Press RETURN : <RETURN>
```

The following output appears on the printer:

```
Text       Date        Text note          Disc P1  Page 0001   Lines  Opr. Vers

WWINTRO4   22.05.1982  WordWork introduction chap. 4              182  DI   007
WWINTRO6   20.05.1982  WordWork introduction chap.6               102  DDE  012
WWVERS24   ..........  Only old information found.               ....  ...  ...
WWPARAM    ..........  No information saved.                     ....  ...  ...
WW         ..........  Program.                                  ....  ...  ...
WW         ..........  P-code for program.                       ....  ...  ...
WWINTRFO   19.05.1982  WordWork introduction front page            20  DI   001

Disc : P1. Label : DDE       . Date of last backup: 29.05.1982
Number of unused sectors (with 256 chars)  : 00232.
```

On the disk the 2 text files called WWINTRO4 and WWINTRFO were last altered by a user with the name "DI". The text file WWINTRO6 was last altered by the user with the name "DDE". The text file, WWVERS24, has been edited using a previous version of WordWork´s editing module, and the text file WWPARAM does not have any parameters (i.e. no text note and no editing or printing parameters). Finally the disk contains the WordWork program called WW.

The catalogue listing is primarily designed for disks with text files, (of type K and T). The text itself is stored in a file of type K, and the text parameters are stored in a file of type T. When the catalogue listing appears the data concerning these two files is merged together in one line. If the T part does not exist the contents of the text note will read: "No information found". If files other than text files are stored on the disk, and these are neither of type 1 or P (program or P-code), the text note will state the type - e.g. "Type : R.".

11. Security backup.

The security backup for fixed disks and diskettes is executed in different ways. Therefore it is important to remember the following : WordWork´s program for security backup is only for security copying of the contents of one diskette onto another diskette (of the same type). In word processing systems with fixed disks (like Winchester disks) the user must use a special program, (called either WCOPY or WBACK).

Entering the ´B´ command followed by RETURN in the main command level of WordWork initiates the security copying program. The questions

"Source disk identification: P " and
"Destination disk identification: P "

are answered with the designations of the disk to be copied from and of the disk to be copied onto. (The disk designations are "P1", "P2", "P3" etc.). The entry of a designation is terminated by pressing RETURN.

The security backup program acknowledges the disk designations with the question:

"Source disk is Px, destination disk Py.
OK (Y/N) ? ".

The user may now insert the diskette to be copied from and the diskette to be copied onto. ´Y´ for Yes is then entered followed by RETURN to start the copying. If the user does not wish to make the copy, ´N´ is entered followed by RETURN. The program will again ask for disk designations.

The user is kept informed as to the progress of the copying whilst this is in function. (The copying is completed when the number of the current track is the same as the number of the last track). When the copying is completed the menu for WordWork´s main command level reappears on the screen.

If the user regrets having initiated the security backup, pressing ESCAPE instead of RETURN as response to any of the questions will cause the menu from WordWork´s main command level to reappear on the screen.

Example: The user wishes to security copy the WordWork diskette on P1. It is to be copied onto the diskette on P2. (The user's replies are shown underlined):

```
**********************************
* WordWork Disk Backup Utility *
*         Version 3.             *
**********************************


Source disk identification: P1
Destination disk identification: P2
Source disk is P1, destination disk P2.
OK (Y/N) ? Y                    <- ( the diskette was loaded
                                     on P2 before replying )

Current track no.:              Last track no.:

     0066                            0069
```

12. Disk packing.

When texts have been deleted from a disk, the space that the text files have occupied is not available for use until the disk has been packed. Normally, packing (compressing) the disk is necessary when the number of unused blocks on the disk is nearly used up (see the catalogue listing in ch. 10).

Disk packing must not be executed when another user is working on the disk, i.e disk packing must never be initiated whilst there are other users working at the computer. Disk packing puts a heavy work load on the computer´s central processor and therefore should only be done on a multi-user system when other users are not working with the system.

The WordWork disk packing utility is initiated by entering the command ´S´ followed by RETURN in the main command level of WordWork. The user must reply to the question :

"Disk identification: P"

with the designation of the disk followed by RETURN. (Disk designations are "P1", "P2", "P3" etc.).

As with security backup, the user is kept informed of the progress of the packing program (see ch. 11). (When the current track number is the same value as the last track number, the packing is complete).

The menu for WordWork´s main command level reappears on the screen when the disk packing program has terminated.

Example: The user wishes to pack the P2 disk, to regain the space used by deleted text files. (The user´s replies are shown underlined):

```
**********************************
* WordWork Disk Compress Utility *
*           Version 3.           *
**********************************

Disk identification: P2

Current track no.:          Last track no.:

     0066                        0069
```

13. User programs.

In the main command level it is possible for the user to initiate any of WordWork´s programs. The user may also initiate a program which does not belong to WordWork, this is done by pressing ´U´ followed by RETURN in WordWork´s main command level. This program behaves as a normal WordWork program insomuch as the menu for WordWork´s main command level appears on the screen when the program is terminated.

It is possible to initiate up to 8 different programs from WordWork. The names of these programs are displayed on the screen together with a program number. The user initiates a program by entering a number followed by RETURN.

Information concerning the programs (also called user programs), which may be initiated from WordWork, is stored in a text file with the name WWPARAM. There is a line for each program in WWPARAM with information about the program name and number, on which disk the program is stored and parameters, if any, for the program.

A line in WWPARAM describing a user program must contain the following data:

"USERx: " <program name> ":Py" ("," program parameters)

where: x is a number between 1 and 8, stating the program no.
Py is the designation for the disk containing the program.

It is necessary that the line in WWPARAM only contains the above shown and that there is exactly one blank character in front of the program name. If parameters are required for the user program, these may written after the disk designation.

Example: There are 3 user programs : TELEX (on P1), RAPPORT (on P2) - this requires the parameters "S,D,T" and WWINDEX (on P1). The lines in WWPARAM with data concerning the user programs appear as follows:

```
USER1: TELEX:P1
USER2: RAPPORT:P2,S,D,T
USER3: WWINDEX:P1
```

```
(Char.position  12345678901234567890123456789 0    )
```

When the user wants to initiate the program RAPPORT, the following will appear on the screen after the command ´U´ has been given in the main command level:

```
*******************************
* WordWork Start User Program *
*         Version 3.          *
*******************************
```

You may choose one of the following programs :

Program 1 - TELEX
Program 2 - RAPPORT
Program 3 - WWINDEX

Start program no. : 2

When a user program is initiated, a message is also given to the operating system with the information that WordWork´s main command level is to be entered when the user program is terminated. The user does not require this in some cases. If the program name begins with a ´$´ character, the main command level of WordWork will not be re-entered, and then the user program itself must return to WordWork. If the member registration system MAGI is initiated, WordWork is not re-entered automatically.

14. WWPARAM - WordWork´s system data.

WWPARAM is the name of the file containing information concerning the text processing system. Usually this file will be found on the same disk as the WordWork programs (P1). Four different classes of information are contained in WWPARAM:

14.1 Text editing files.

When the user edits a text file, it is stored in two editing files. These editing files are called *EDITFIL, where ´*´ is a letter between ´A´ and ´R´. Each work station has two defined editing files attached. Work station (terminal) no. 1 has thus AEDITFIL and BEDITFIL; work station no.2 has CEDITFIL and DEDITFIL etc.

WWPARAM contains the designation of the disk holding the editing files. For example, if the editing files are on P1, WWPARAM will contain the following line:

```
                EDIT:P1
(Char. position 12345678901234567890123456789012345678901234567890)
```

14.2 Printers.

WWPARAM must contain information concerning the printers used in the text processing system. This ensures that the user only uses those printers which are designed for text processing.

In a system where printer 1 is a Diablo printer and printer 2 is a Triumph printer, WWPARAM will contain the following line:

```
                PRT1: D PRT2: R PRT3:   PRT4:  .
(Char. position 12345678901234567890123456789012345678901234567890)
```

The letters which are inserted beside the numbers for the individual printers are the same as those written on the label of the "SYSTEM DISC" (see "Introduction to WordWork" chapter 3). In the example the Diablo and Triumph printers are characterised by ´D´ and ´R´ respectively. If a printer does not exist in the system or may not be used for printing, no letter is entered. (It is not possible to output to printers 3 and 4 in the example above.)

It is not possible to print text files, if the line referring to the printers does not exist in WWPARAM.

14.3 User names.

WordWork´s main command level stores the entered user name in WWPARAM (see ch. 3). For each work station, the name of the last text file to be edited is also stored together with the user name.
E.g. the line referring to terminal no. 2 could look like this:

```
                TERM:2DDEWWBREV:P2
(Char. position 12345678901234567890123456789012345678901234567890)
```

In the example shown, the user name at terminal 2 is "DDE", and WWBREV on P2 was edited last.

The user must neither correct nor alter the lines with infomation referring to work stations, as errors in these lines will prevent WordWork programs functioning as intended.

14.4 User programs.

As described in chapter 13, the user may initiate user programs from WordWork. The names of the programs which can be initiated from WordWork are stored in WWPARAM. The contents of these lines are described in chapter 13.

For example, if the user requires that program no. 2 is to be a program called TELEX stored on P3, WWPARAM will contain the line:

```
                USER2: TELEX:P3
(Char. position 12345678901234567890123456789012345678901234567890)
```

14.5 Creation of WWPARAM.

If WWPARAM gets deleted or the contents destroyed, a new WWPARAM may be created as follows:

1. Delete the old text file called WWPARAM, if it exists.
2. Initiate the editing program; (this outputs an error message relating that WWPARAM is not found). The program searches for the editing files on the P1 disk.
3. Enter the text name WWPARAM (without disk designation).
4. The editing program must now inform that the text does not exist - entry of new text is initiated. (The message that WWPARAM is not found reappears.)
5. Enter the two lines described in sections 14.1 and 14.2.

6. Enter lines referring to user programs, if any, as described in section 14.4.
7. Press TERMINATE and enter the command "OR".
8. Create WWPARAM on the P1 disk, for example, with 1 block (of 256 char.). "WordWork´s information " may be entered as a text note.
9. When the menu for WordWork´s main command level reappears on the screen, the ´New operator´ ("N") command must be executed for all work stations. This ensures that the information concerning the user name for each work station is stored in WWPARAM. Never try to insert this information in WWPARAM personally.

15. Error messages and error codes.

When using WordWork, the user may receive error messages from the programs - e.g that the door on a diskette drive is not shut. Many of these errors messages are displayed on the screen with self-explanatory text, but in some cases the user only receives an error code. The explanation of these error codes is given in the following table:

Error code	Explanation
1	The text or program not found.
2	A text with the given name already exists.
3	The disk is full (- perhaps it can be packed).
5	The text is being accessed by an another user.
6	The program has not opened the text for input/output.
8	Extension of the text has been attempted more than 60 times (use a greater number of blocks (of 256 char.)).
9	The text or program name is invalid.
10	The disk designation in the name is incorrect.
14	The catalogue on the disk is full.
19	The end marker at the end of the text is missing.
30	The control system cannot reserve more resources, i.e. the text cannot be input / the program cannot start.
40	The disk is not ready.
42	Hard error on the disk (there may be a scratch or dirt on the disk, the disk may not be inserted correctly).
44	The disk is write protected.
50	An attempt to read / write outside the space on the disk. (The contents of the disk may be destroyed).
52	Invalid disk designation.
61	The control system cannot start more programs at the moment.
63	The program is too large for the user memory, (perhaps a part of the memory is missing).
69	When the program was to be started there was no room to send a message to the program. The system must be restarted before the user can continue working at the terminal.

The error codes 4, 11, 12, 13, 15, 16, 17, 18, 62, 64 and 65 are ommitted from the table as these will never appear in connection with WordWork.

Apart from these error codes and messages from WordWork, the user may also receive error messages from the operating system. There are 3 different types of error message, output by the operating system, which may appear on the screen in connection with WordWork programs. They appear as follows:

RUN TIME ERROR x NEAR LINE yyyy

USER I/O ERROR zz NEAR LINE yyyy

PASCAL-FILE SYSTEM ERROR zz

where : x is a letter
yyyy is a number between 0000 and 9999
zz is one of the error codes stated in the table.

If one of these error messages from the operating system appears, it should be noted by the user together with a description of the circumstances under which the error arose. Then the supplier or DDE should be informed of the error. This enables any error in the system to be removed from the WordWork programs.

The message "ERROR zz" may also appear on the screen in connection with communication with the operating system. Here zz is also one of the error codes stated in the table. The error message has no connection with the execution of WordWork programs in the system.