



1091

Bell Laboratories

subject: A Secretarial Typing
System Using UNIX -
Case 38730-39

date: February 27, 1976

from: E. F. Engelbert

ABSTRACT

This memorandum documents a series of programs for use with the NROFF text processor of UNIX and provides an instruction manual for their use. The programs are designed to be used by secretaries in their day-to-day typing activities. They are presently being successfully used by the secretaries in Center 451.



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MEMORANDUM FOR FILE

Introduction

This memorandum documents a series of macros which have been prepared for the NROFF text processor of UNIX. Although several such packages already exist {1} this one is designed specifically to be used by secretaries for the day-to-day preparation of letters, conference notes, memoranda, etc. The system is presently operational on Center 451's PDP 11/45 and is being used successfully by all of the center's secretaries.

Establishing the System

In order to establish a secretarial typing system it is, of course, necessary to provide the secretaries with user id's on a UNIX system. Each secretary's directory must either contain, or be linked to, three files named pink, final and book. Listings of these three files are contained in Appendix A, B, and C respectively. Also the user must know how to build and modify text files using the UNIX editor. {2}

As for terminals, the system is designed to output draft documents on a DEC line printer and to output final documents on a GSI 300 (or similar) terminal. The author recommends a DATASPEED 40 terminal for inputting and editing text.

Anyone wishing to establish such a system may contact the author for a tape copy of the software. However, there are no plans to support such systems.

{1} See Reference 1.

{2} See Reference 2.

Using the System

The use of the system is documented in the attached instructions. Basically however, text files to be processed must include a series of imbedded commands to indicate such things as titles, letterheads, paragraphs, etc. These commands are interpreted by the system to provide the proper spacing, indentation, pagination, and page number. In fact, the format of the output document can be changed from draft to final by changing one command. An example of what is required is shown in the attached keysheet.

This document is an example of the output produced by the system. However, the author requests that the system not be judged by the quality of the attachments. They represent a special situation because of the difficulty in distinguishing which commands are to be interpreted as text and which are to be interpreted as commands.

Acknowledgement

The author wishes to thank D. M. Lyons, R. J. Moylen, and B. A. Noel for their help in defining the required formats and use-testing the system; and most especially for their patience with the system's growing pains.

E. F. Engelbert
E. F. Engelbert

WH-4513-EFE-rjm

Att.
Instructions
Keysheet
Appendix A-C

Copy (with att) to
All supervision in Center 451
All members of Department 4513
H. W. Bowker
M. M. Chodrow
A. G. Gross
R. G. Hinderliter
G. E. Kreiger
D. M. Lyons
R. L. Martin
R. J. Moylen
B. A. Noel
W. S. Peavler
C. L. Pettijohn

Copy (with att) to
Cont'd next page

Copy (with att) to
E. A. Rosenblum
A. J. Schepis
J. T. Sibilis
J. V. Verrilli

REFERENCES

1. "Typing Documents on UNIX," TM 74-1274-24, by M. Lesk, dated November 22, 1974.
2. "A Tutorial Introduction to the ED Text Editor," by B. W. Kernighan.
3. "NROFF User's Manual - Second Edition," TM 74-1271-13, by J. F. Ossanna, dated September 11, 1974.

SECRETARIAL TYPING SYSTEM

INSTRUCTION MANUAL

STARTING UP

To make a pink, the first line must be:

.so pink

Pinks are designed only to be printed on the high speed line printer.

To make a final, the first line must be:

.so final

To have the output come out in book form (even right side and centered), the second line must be:

.so book

This is designed for book type documents and not for memos.

WRITING THE LETTERHEAD

To enter a memo letterhead, first type

.LH

in capitals on a line by itself. Then comes the hard part. Enter the subject and author on the screen as though you were typing on a typewriter. Start the subject at the left side of the screen. Enter the first author's name on the third line, 47 spaces in from the left, like this:

A secretarial typing system
using UNIX and a pdp 11/45
Computer Case 38730-39

E.F.Engelbert

For an internal letter on a memo letterhead, include the addressees as part of the letterhead text.

To get a general letterhead, type:

.GL "Mr. Jones"

on a line by itself followed by the subject the appropriate number of spaces and the addressees. The name in the quotes will appear at the upper left of all pages after the first, along with the page number.

To enter a title (ABSTRACT, MEMO FOR FILE, etc.), type,

.TI

in capitals on a line by itself. Then enter the title on the next line. The title must be followed by a paragraph or section heading. If not, the title text must be followed by

.TR

(for title reset) on a line by itself.

If you have used the letterhead commands to prepare an abstract, and you want to prepare a second letterhead for the memo itself, type

.EA

(for End Abstract) on a line by itself. This will automatically prepare a second letterhead on a new page.

WRITING THE TEXT

To start each paragraph, type:

.PA

on a line by itself in capitals. Do NOT indent or skip lines

To place an unnumbered heading, type:

.UH

on a line by itself in capitals. Type the heading on the next line. Do NOT indent or skip lines.

To place a numbered heading, type:

.NH "number"

on a line by itself in capitals. Type the heading on the next line. Number is the section number written in quotes. Do NOT indent or skip lines.

To enter a footnote, type:

.fn

The text of the footnote

.ef

Note that fn and ef are in small letters. They stand for footnote and end footnote respectively. The footnote must be entered right after the word that it refers to even if that word is in the middle of a sentence. After the footnote has been entered, start a new line and continue typing the main text where ever you left off.

In general, spacing, indenting and margins will automatically be taken care of. However, the following commands can be used in special cases such as the construction of tables. They must be placed on a line by themselves.

Command	Name	Function
-----	----	-----
.bp	begin page	Forces the start of a new page
.br	break	Causes the next text to start a new line
.ce	center	Centers the next line of output
.in x	indent	Causes x spaces to be printed before each line This can be canceled by typing .in 0 or just .in
.ti x	temporary indent	Causes x extra blanks to be printed before the next line only
.ne x	need	Keeps the next x lines of output together even if it means starting a new page
.nf	no fill	Prints the output exactly as it was typed in
.fi	fill	Cancels no fill (.nf)
.nh	no hyphen	Turns off hyphenation
.sp x	space	Outputs x blank lines

.ul

underline

Undelins whatever is on the
next line of input

FINISHING OFF

To close a memo (put in the signiture, typed by, etc.), type:

.CL

in capitals on a line by itself. Then type the signiture, etc. as though the terminal was a regular typewriter. This is similar to the way letterheads are typed in. Assume that the first column on the terminal corresponds to the first tab. This command automatically leaves three blank lines after the main text.

To enter a distribution list, type:

.dl "(with att.)"
the list of names
.ed

where .dl stands for distribution list and .ed stands for end distribution list. The words between the quotes will be automatically placed between "Copy" and "to". The quotes may be omitted entirely if there are no attachments.

To enter a bibliography, type:

.BI

on a line by itself. Then enter the text as you would on a typewriter assuming the first column on the terminal is the first tab on the typewriter.

To make a reference section, type:

.RF

on a line by itself. Then type in the list of references.

To make an attachment, type:

.AT

in capitals on a line by itself. This will start a new page and space down eight lines. Then type the attachment as though you were using a regular typewriter.

To type an appendix, type:

.AP "letter"

on a line by itself, in capitals. "Letter" is the letter of the appendix. (.AP "A" will produce APPENDIX A etc.) Then enter the text of the appendix using the above commands (.PA, .fn, etc.) as appropriate.

GETTING OUTPUT

To print a pink on the high speed printer, go to the computer room, log on a terminal and make sure no one else is using the printer. Type on the terminal:

```
nroff jobname | lpr
```

where jobname is the name of the file you want printed out and | is the double vertical bar. Go to the printer and wait for your job. When it is finished push the "ready on/off line" button on the printer. Then push the "top of form" button twice and then push the "ready on/off line" button again. go to the back of the printer and tear off the paper. Finally, go back to the terminal and log off using control-d.

To print a final on the GSI terminal change the first line of the program from ".so pink" to ".so final". Then type:

```
nroff -s jobname
```

followed by return. (The -s means stop and wait for each page of paper to be inserted.) Insert the letterhead sheet line up the typehead on "Subject:" back up ten lines and hit return. When the page is finished, insert a new piece of paper and hit return. It may take a little practice to get the paper lined up in the terminal correctly.

Other useful nroff options are:

nroff jobname Doesn't stop for pages

nroff +x jobname Starts with first page whose page
 number is x

nroff -x jobname Stops after first page whose page
 number is x

nroff jobpartA jobpartB Combines two files into a
 single document

These options may be combined. For example,

nroff +3 -4 -s jobname

will print the third and fourth page of a job and will stop for each page to be inserted. The user is cautioned that the abstract page, the first page of the memo and the first page of each appendix are all number as page 1.

If it is desired to print a pink on the DASI terminal, the first two lines of the program must be:

```
.so pink
.pl 66
```

in order to have the proper page length.

KEYSHEET

.so final

.LH

A secretarial typing system
using UNIX Case 38730-39

E. F. Engelbert

.TI

ABSTRACT

.PA

Enter the text for the abstract

.EA

.TI

MEMORANDUM FOR FILE

.NH "I"

Section Heading

.PA

Enter the text for this paragraph.

.PA

Enter the text

.fn

Enter the footnote

.ef

for this paragraph.

.NH "II"

Section Heading

.PA

Enter the text for this paragraph

.CL

WH-4513-EFE-efe

E. F. Engelbert

Atts.

References

Appendix A

.dl "(with att.)"

Names on distribution list

.ed

.RF

Enter list of references

.AP "A"

.TI

Title of appendix A

.PA

Enter the text for this paragraph of the appendix.

.PA

Enter the text for this paragraph of the appendix

APPENDIX A

PINK MACROS

```
.**** Set hyphination
.hy 14
.**** Set letterhead indicator
.nr 1 0
.**** Set paragraph counter
.nr t 0
.nr p 0 1
.**** Title set
.de TS
.po -2
..
.**** Title reset
.de TR
.sp2
.po +2
.nr t 0
..
.**** Double space
.ls 2
.**** Adjust margins
.na
.pl 64
.ll 61
.lt 55
.po 14
.**** Start paragraph
.de PA
.br
.if \ng-1 .lr
.if \nl-1 .pl
.if \nt-2 .TR
.ne 3
.ti +10
..
.**** Numbered section heading
.de NH
.if \ng-1 .lr
.if \nl-1 .pl
.br
```

Appendix A - 2

```
.if \nt-2 .TR
.ne 5
\sl
.ul
..
**** Unnumbered section heading
.de UH
.if \ng-1 .lr
.if \nl-1 .pl
.br
.if \nt-2 .TR
.ne 5
.ul
..
**** Page header
.ds c - % -
.ds r D R A F T
.de HD
.if \n%-1 'so3
.if \n%-1 .tl '\#1'\#c'\#r'
.if \n%-1 'sp 3
.if \n%-1 .ns
.nr x 0 1
.nr y 0 1
.if \n(dn .if \nz .rz
.nr z 0
..
.wh 0 HD
**** Page footer
.de FO
.ev2
.na
.ll 61
.nf
.if \nx .xf
.di
.ev
.cn FO \na
'bp
..
.wh -11 FO
**** Compose letterhead
.de LH
.nr 1 2
Bell
.sp
.po -2.
.ce
D R A F T
```

```

.po +2
.tl 40
Bell Laboratories
.sp 2
.nf
.ls 1
.di ld
..
**** Enter title
.de Tl
.if \nl-1 .pl
.nr t 3
.TS
.sp 3
.ce
.ul
..
**** End of abstract
.de EA
.nr p 0 1
.bp 1
.RL
..
**** Footnote series (requires MD andrO)
.nr m -11
**** Save footnote that doesn't fit
.de fz
.ff
.nf
.fy
.fi
.ef
..
**** Expand footnote
.de xf
.\n+y
.rm \ny
.if \nx-\ny .xf
..
.de fx
.if \nx-\ny .di fy
.if \nx-\ny .nr z 1
..
**** Start footnote
.de fn
.if !\n+x-1 .if !\n(nl-59 .nr f 1
.if \nf .ne S
.if \nf .nr x 1
.if \nf .nr f 0

```

Appendix A - 4

```
{\nx}
.di \nx
.ev 1
.in 4
.ll 61
.na
.if !\nx-1 .fs
.if \nx-1 .sp
.ti -4
{\nx}

.
.*** Space first footnote
.de fs
.ti 0
.sp 2
-----
.br
.
.*** End footnote
.de ef
.br
.ev
.di
.ch FO x
.
.oe ff
.di \n+x
.ev 1
.in 4
.ll 61
.na
.if !\nx-1 .fs
.if \nx-1 .sp
.
.ch FO 500
.wh -11 fx
.ch FO -11
.*** Repeated letterhead
.de RL
.nr 1 2
Bell
.sp
.po -2
.ce
D R A F T
.po +2
.ti 40
Bell Laboratories
.sp 2
```

Appendix A - 5

```
.nf
.ls 1
..
**** Close
.de CL
.sp 2
.nf
.ls 1
..
**** Appendix
.de AP
.br
.fi
.ls 2
.ds c
.ds 1 Appendix \s1 - %
.bp 1
Bell
.sp 0
.po -2
.ce
APPENDIX \s1
.po +2
..
**** Print letterhead
.de pl
.ci
.la
.ls 2
.fi
.nr 1 0
..
**** Bibliography
.de bl
.ds 1
.ds c
.ds r
.bp
.sp 7
.po -2
.ce
.ul
BIBLIOGRAPHY
.po +2
.sp 2
.ls 2
..
**** General letterhead
.de GL
```

Appendix A - 6

```
.ds r
.ds c
.ds 1 \s1 - %
.po -2
.ce
D R A F T
.po +2
.ti 40
Bell Laboratories
.nf
.ls 1
.nr 9 2
..
**** General letterhead reset
.de lr
.fi
.sp
.nr 9 0
.ls 2
..
**** Distribution list
.de dl
.br
.nf
.ds at " \s1
.nr ad 2
.rn FU F
.rn CF FU
.ne 5
.nr d 2
.sp
Copy\*(at to
.br
..
**** Second page of copy to
.de ct
.br
.sp
Copy\*(at to
.br
Cont'd next page
.br
.nr s 2
..
.nr d 0
**** End distribution list
.de ed
.nr d 0
.nr dd 0
```

Appendix A - 7

```
.rn FU CF
.rn F FU
.fi
..
**** Copy to on next page
.de cn
.br
Copy\*(at to
.br
See next page
.sp
..
**** Make attachment
.de A1
.ds 1
.ds c
.ds r
.bp
.ls 1
.sp 7
..
**** References
.de RF
.ds 1
.ds c
.ds r
.bp
.sp 7
.po -2
.ce
.ul
REFERENCES
.po +2
.sp 2
.ls 2
..
**** Footer for distribution list
.de CF
.cn fx -5
.if \nd-1 .ct
.if \n(dd-1 .if !\na .cn
.ev2
.na
.ll 61
.nf
.if \nx .xf
.di
.ev
.cn FU \nm
```

```
.bp  
.if \ns-1 Copy\*(at to  
..
```

APPENDIX B

FINAL MACROS

```
.**** Set hyphination
.hy 14
.**** Set letterhead indicator
.nr 1 0
.**** Set paragraph counter
.nr t 0
.nr p 0 1
.**** title set
.de TS
.po -2
..
.***** title reset
.de TR
.sp 2
.po +2
.nr t 0
..
.**** Adjust margins
.na
.pl 66
.ll 61
.lt 55
.po 14
.**** Start paragraph
.de PA
.br
.if \ng-1 .lr
.if \nl-1 .pl
.if \nt-2 .FR
.sp
.ne 2
..
.**** Numbered section heading
.de NH
.if \ng-1 .lr
.if \nl-1 .pl
.sp
.if \nt-2 .FR
.ne 5
```

Appendix B - 2

```
\s1
.ul
..
**** Unnumbered section heading
.de Uh
.if \ng-1 .lr
.if \nl-1 .pl
.sp
.if \nt-2 .TR
.ne 5
.ul
..
**** page header
.ds c - % -
.de HD
.if \n%-1 'so3
.if \n%-1 .tl '\#1'\#c'\#r'
.if \n%-1 'sp 3
.if \n%-1 .ns
.nr x 0 1
.nr y 0 1
.if \n(an .if \nz .iz
.nr z 0
..
.wh 0 HD
**** Page footer
.de FU
.ev2
.na
.ll 6l
.nf
.if \nx .xt
.di
.ev
.ch FU \nm
'bp
..
.wh -1l FU
**** Compose letterhead
.de LH
.nr 1 2
Bell
.sp 8
.nf
.di ld
..
**** Enter title
.de 1l
.if \nl-1 .pl
```

Appendix B - 3

```
.nr t 3
.TS
.sp 3
.ti -2
.ce
.ul
..
**** End of abstract
.de EA
.nr p 0 1
.bp 1
.RL
..
**** Footnote series (requires HD and FU)
.nr m -11
**** Save footnote that doesn't fit
.de fz
.ff
.nf
.fy
.fi
.ef
..
**** Expand footnotes
.de xf
.\n+y
.rm \ny
.if \nx-\ny .xf
..
.de fx
.if \nx-\ny .di fy
.if \nx-\ny .nr z 1
..
**** Start footnote
.de fn
.if !\nx-1 .if !\n(1-59 .nr f 1
.iff \nf .ne 5
.if \nr .nr x 1
.if \nf .nr f 0
{\nx}
.di \nx
.ev1
.in 4
.ll 61
.na
.if !\nx-1 .fs
.if \nx-1 .sp
.ti -4
{\nx}
```

```

**** Space first footnote
.de fs
.tl 0
.sp 3
-----
.br
**** End footnote
.de ef
.or
.ev
.di
.ch FU x
****
.ch FU 500
.wn -11 fx
.ch FU -11
**** Repeated letterhead
.de RL
.nr 1 2
Bell
.sp 8
.nf
****
.de ff
.di \nx
.ev1
.in 4
.ll 61
.na
.if !\nx-1 .fs
.if \nx-1 .sp
**** Close
.de CL
.sp 3
.nf
**** Appendix
.de AP
.fl
.ds c
.ds 1 Appendix \s1 - %
.op 1
Bell
.sp 6
.po -2
.ce

```

APPENDIX \s1

.po +2

.sp

.**** Print letterhead

.de pl

.di

.ld

.nr 1 0

.fi

.**** Bibliography

.de B1

.as 1

.ds c

.ds r

.bp

.sp 7

.po -2

.ce

.ul

BIBLIOGRAPHY

.po +2

.sp 3

.**** General letterhead

.de GL

.as r

.ds c

.ds 1 \s1 - %

Bell

.sp 2

.nr 9 2

.nf

.**** General letterhead reset

.de lr

.nr 9 0

.fi

.**** Distribution list

.de ol

.br

.nf

.ds at " \s1

.nr da 2

.rn FO F

.rn CF FO

.ne 5

```
.nr d 2
.sp
Copy\*(at to
.br
..
**** Second page of copy to
.de ct
.br
.sp
Copy\*(at to
.br
Cont'd next page
.br
.nr s 2
..
**** Footer for distribution list
.nr d 0
.de Cr
.if \nd-1 .ct
.if \n(da-1 .if !\nd .cn
.ev2
.na
.ll ol
.nf
.if \nx .xf
.di
.ev
.cn FU \nm
.bp
.if \ns-1 Copy\*(at to
.ns
..
**** End distribution list
.de ed
.nr d 0
.nr ad 0
.rn FU Cr
.rn F FU
..
**** Copy to on next page
.de cn
.br
Copy\*(at to
.br
See next page
.sp
..
**** Make attachment
.de AT
```

.ds 1
.ds c
.ds r
.bp
.sp 7
..

**** References

.de RF
.ds 1
.ds c
.ds r
.bp
.sp 7
.po -2
.ce
.ul

REFERENCES

.po +2
.sp 3
..

APPENDIX C

BOOK MACROS

```
**** Align right margin and center page
.ad
.po 13
.ll 59
.lt 59
**** Modify title adjustments
.rm TS
.de TR
.sp3
.nr t 0

**
**** Fix footnote for line length
.de FU
.ev2
.ll 59
.nf
.if \nx .xf
.di
.ev
.ch FU \nm
.op

**
.de fn
[\n+x]
.di \nx
.ev 1
.ll 59
.if !\nx-1 .ts
.if \nx-1 .sp
[\nx]

**
.de ff
.di \n+x
.ev1
.ll 59
.if !\nx-1 .fs
.if \nx-1 .sp
**
```