

SSSSSS	CCCCC	RRRRRRR	IIIII	BBBBBBB	EEEEEEEEEE
SSSSSSSS	CCCCCCCC	RRRRRRRR	IIIII	BBBBBBBBB	EEEEEEEEEE
SSS SSS	CCC CCC	RRR RRR	III	BBB BBB	EEE EEE
SSS SSS	CCC CCC	RRR RRR	III	BBB BBB	EEE EEE
SSSS	CCC	RRR RRR	III	BBB BBB	EEEE
SSSSSS	CCC	RRRRRR	III	BBBBBBB	EEEE
SSS	CCC	RRR RRR	III	BBB BBB	EEE
SSS SSS	CCC CCC	RRR RRR	III	BBB BBB	EEE EEE
SSS SSS	CCC CCC	RRR RRR	III	BBB BBB	EEE EEE
SSSSSSSS	CCCCCCCC	RRRRR RRRR	IIIII	BBBBBBBBBB	EEEEEEEEEE
SSSSSS	CCCCC	RRRRR RRRR	IIIII	BBBBBBBBBB	EEEEEEEEEE

(A T E X T F O R M A T T I N G P R O G R A M)

BY DAVE EHNEBUSKE & JERRY HUDSON

05/23/74

COMPUTER DIVISION INTERNAL REPORT #20

ANOTHER DAMNED, THICK, SQUARE BOCK
 ALWAYS SCRIBBLE, SCRIBBLE, SCRIBBLE EH
 MR GIBBON?
 -- WILLIAM HENRY, DUKE OF GLOUCESTER
 (IN NOTE TO BOSWELL'S LIFE OF JOHNSON)

OCT 8 1974

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1 INTRODUCTION

"SCRIBE" IS A PROGRAM FOR PRODUCING MANUSCRIPTS FROM PUNCHED CARDS OR PARTITIONED DATA SETS PRODUCED BY THE NRAO PANDORA TEXT EDITOR. OUTPUT IS PRINTED ON THE LINE PRINTER.

GENERALLY, STYLE AND FORMATTING ARE LEFT TO THE PREPARER OF THE TEXT. SEVERAL AUTOMATIC FORMATTING MODES ARE AVAILABLE TO THE WRITER: "COPY", "TYPE", "TYPESET", AND "MASH", WHICH RESPECTIVELY "COPY" ONE-FOR-ONE WHATEVER TEXT IS PRESENTED TO THE SYSTEM, DOWN TO THE VERY COLUMN IN WHICH A CHARACTER APPEARS; "TYPE" THE TEXT IN PARAGRAPHS, BREAKING IT AT SPACES; "TYPESET" THE TEXT, JUSTIFYING BOTH MARGINS, AND "MASH", FOR INDENTING TEXT ACCORDING TO ITS HIERARCHICAL POSITION WITHIN AN OUTLINE. A NUMBER OF COMMANDS ARE RECOGNIZED BY THE SYSTEM, WHICH ALLOW PAGES TO BE SKIPPED, A HEADER TO BE PRINTED AT THE TOP OF EACH PAGE, TITLES TO BE CENTERED, AND THE LIKE.

PRESENTLY, THE TEC TERMINALS USED WITH PANDORA ALLOW THE ENTRY OF ONLY UPPER CASE CHARACTERS; THE LINE PRINTER IS ALSO THUS LIMITED. CONSEQUENTLY, THE SYSTEM IS PERHAPS ONLY OF INTEREST FOR PROGRAM DOCUMENTATION AND PREPARATION OF PAPERS AND MEMORANDA IN DRAFT FORM. THERE IS NOTHING INHERENT IN SCRIBE WHICH LIMITS USERS TO HALF THE ALPHABET, AND IT IS THE HOPE OF THESE AUTHORS THAT EVENTUALLY TERMINALS AND THE REQUISITE PRINT CHAIN FOR THE PRINTER WILL BE OBTAINED, WHICH WILL ENABLE DOCUMENTS TO BE PREPARED IN PRESENTABLE, FINAL FORM.

2 THE FORM OF COMMANDS

COMMANDS TO THE SCRIBE SYSTEM MAY BE INSERTED THROUGHOUT ONE'S TEXT. THIS MEANS THAT A CERTAIN CHARACTER MUST BE SET ASIDE BY THE WRITER TO ALERT THE SCRIBE COMMAND RECOGNIZER THAT A COMMAND, AND NOT JUST TEXT DATA, IS INTENDED. THE NORMAL SYMBOL FOR THIS IS THE % CHARACTER; IT WILL CAUSE THE FOLLOWING CHARACTER STRING TO BE INTERPRETED AS EITHER A COMMAND, OR A MACRO NAME. ONE MAY AVOID THE OBVIOUS DILEMMA OF WANTING TO USE THE SYMBOL FOR OTHER PURPOSES BY TWO WAYS: (1) DOUBLE THE CHARACTER, THUS: %% (2) USE THE %HOT COMMAND (SEE BELOW) TO CHANGE THE "HOT" CHARACTER TO ANOTHER.

SOME COMMANDS HAVE PARAMETERS. TWO FORMS ARE RECOGNIZED: THOSE WITHIN SINGLE QUOTES, USED FOR CHARACTER STRINGS OF INDEFINITE LENGTH, AND THOSE WITHIN PARENTHESES, USED FOR NON-TEXTUAL PARAMETERS (SUCH AS MACRO NAMES, PARAGRAPH LEVEL DESIGNATORS, ETC.). WITHIN SINGLE QUOTES, A SINGLE QUOTE MAY BE IMBEDDED BY DOUBLING IT. IN ORDER TO INSERT THE APCSTROPHE WITHIN "SHAKESPEARE'S SONNETS", WHERE IT IS DESIRED TO PASS THE QUOTED PHRASE TO SOME COMMAND, PERHAPS THE %TITLE COMMAND, WE WOULD SAY, %TITLE 'SHAKESPEARE'S SONNETS'. THIS IS ALSO SOMETIMES NECESSARY IN ORDER TO IMBED COMMANDS WITHIN THE PARAMETERS OF COMMANDS.

COMMANDS MAY BE INSERTED WITHIN PARAMETERS, AS MAY MACRO NAMES. FOR EXAMPLE,

```
%HDR 'A STORY ABOUT %KID'S DOG'
```

WOULD, IF WE HAD EARLIER SET %KID = 'TOMMY', BE EQUIVALENT TO:

%FCR 'A STORY ABOUT TOMMY'S DOG'

3 STYLES

FOUR STYLES ARE RECOGNIZED BY SCRIBE: COPY, TYPE, TYPESET, AND MASH. THESE ARE INVOKED BY THE SCRIBE COMMANDS,

%COPY
%TYPE
%TYPESET
%MASH

COPY STYLE IS A ONE-FOR-ONE COPY OF THE INPUT TEXT WITH A PAGE WIDTH OF 72 COLUMNS, COLUMN 1 BEGINNING AT THE DESIGNATED LEFT MARGIN POSITION (SEE "MARG", BELOW). PARTIAL LINES WHICH ARE BLANK ARE NOT COPIED AS SUCH. (THESE MAY OCCUR WHEN ONE OR MORE COMMANDS DO NOT ENTIRELY OCCUPY A LINE.) FULL 72 COLUMN BLANK LINES ARE INTERPRETED AS INTENTIONAL, AND CAUSE AN EQUAL NUMBER OF LINES TO BE SKIPPED IN THE OUTPUT TEXT.

TYPE STYLE FOLLOWS CONVENTIONAL SECRETARIAL PRACTICE OF FILLING THE AVAILABLE PAGE WIDTH SO MUCH AS POSSIBLE, BREAKING TEXT ONLY AT SPACES. THIS MANUAL IS BEING PREPARED IN "TYPE" STYLE. AS WITH COPY STYLE, LINES IN THE OUTPUT ARE SKIPPED ONLY WHEN A FULL 72 COLUMN BLANK LINE IS READ IN THE INPUT TEXT. OTHERWISE, STRINGS OF BLANKS OCCURRING WITHIN TEXT LINES ARE TRIMMED DOWN TO ONE SPACE. FOR EXAMPLE, THE INPUT TEXT APPEARING BELOW:

THE REASONABLE MAN
ADAPTS
HIMSELF TO THE WORLD; THE UNREASONABLE
ONE PERSISTS
IN TRYING TO ADAPT THE WORLD TO HIMSELF. THEREFORE ALL
PROGRESS DEPENDS ON THE UNREASONABLE MAN.
-- (G.B. SHAW, MAN AND SUPERMAN, III)

IS, UNDER "TYPE" STYLE, RE-ARRANGED TO READ:

THE REASONABLE MAN ADAPTS HIMSELF TO THE WORLD; THE
UNREASONABLE ONE PERSISTS IN TRYING TO ADAPT THE WORLD
TO HIMSELF. THEREFORE ALL PROGRESS DEPENDS ON THE
UNREASONABLE MAN. -- (G.B. SHAW, MAN AND SUPERMAN, III)

TYPESET STYLE IS EXACTLY THE SAME AS "TYPE", EXCEPT THAT AN ATTEMPT IS MADE TO JUSTIFY THE RIGHT HAND MARGIN. FOR EXAMPLE, OUR QUOTE FROM SHAW MIGHT APPEAR, THUS:

THE REASONABLE MAN ADAPTS HIMSELF TO THE WORLD; THE
UNREASONABLE ONE PERSISTS IN TRYING TO ADAPT THE WORLD
TO HIMSELF. THEREFORE ALL PROGRESS DEPENDS ON THE
UNREASONABLE MAN. -- (G.B. SHAW, MAN AND SUPERMAN, III)

NOTE THAT BLANKS ARE INSERTED INTO POSITIONS OCCUPIED BY OTHER SPACES IN ORDER TO STRETCH THE LINE OF TEXT TO FILL THE AVAILABLE PAGE WIDTH. A RANDOM NUMBER GENERATOR IS USED TO DECIDE WHICH BLANKS ARE EXTENDED; WORDS ARE ALWAYS LEFT INTACT. WHERE A LINE CONTAINS NO BLANKS TO BEGIN

WITH, NO ATTEMPT IS MADE TO STRETCH IT. LIKEWISE, OUR PRINTER'S DEVIL GIVES UP ON LINES THAT ARE TOO SHORT GRACEFULLY TO FILL THE MARGINS.

"MASH" MODE IS PROVIDED FOR THOSE PREPARING TEXT IN OUTLINE FORM, WHERE IT IS DESIRABLE TO INDENT SECTIONS OF THE TEXT ACCORDING TO THEIR HEIRARCHICAL POSITION WITHIN THE OUTLINE. HEIRARCHICAL POSITION DEPENDS UPON THE PARAGRAPH AND TITLE NUMBERING SCHEME, DESCRIBED BELOW. INDENTATION FOR EACH SUB-LEVEL IS 5 CHARACTER POSITIONS.

4 TITLES, HEADERS, AND PARAGRAPHS

4.1 TITLES

TITLES MAY BE PRODUCED WITH THE COMMAND,

%TITLE '<TEXT FOR INCLUSION IN THE TITLE>'

OR

%TITLE (<LEVEL>) '<TEXT FOR INCLUSION IN THE TITLE>'

OR

%TITLE (<LEVEL>,<REF>) '<TEXT FOR INCLUSION IN THE TITLE>'

THE TEXT INCLUDED WITHIN QUOTES (WHICH MAY BE "NULL", THIS INDICATED BY INSERTING NOTHING BETWEEN THE SINGLE QUOTES) MAY BE UP TO 330 CHARACTERS IN LENGTH, AND MAY BE SPREAD OUT OVER MORE THAN ONE LINE. IT, AS WELL AS WITH OTHER COMMANDS REQUIRING PARAMETERS, MUST BEGIN ON THE SAME LINE WITHIN THE INPUT TEXT AS THE COMMAND ITSELF. SCRIBE WILL REMOVE REDUNDANT BLANKS WHERE THE TITLE IS BROKEN AT LINES IN THE INPUT TEXT, AND GENERATE A TITLE BROKEN AT SPACES IN INTERVALS OF THE OUTPUT FILE LINE WIDTH (LESS INDENTATIONS). FOR EXAMPLE,

%TITLE 'A HISTORY OF THE DAMNABLE LIFE AND DESERVED
DEATH OF DOCTOR JOHN FAUSTUS'

WILL BE PRINTED,

A HISTORIE OF THE DAMNABLE LIFE AND DESERVED DEATH OF DOCTOR JOHN
FAUSTUS

THE LEVEL PARAMETER IS USED TO OBTAIN A SECTION NUMBER, WHICH IS GENERATED AUTOMATICALLY BY SCRIBE. THE LEVEL NUMBER INDICATES THE LOGICAL LEVEL THE SECTION TITLE BELONGS TO, WITHIN THE HEIRARCHY OF AN OUTLINE. LEVEL 1 IS THE HIGHEST, OR MOST GENERAL, LEVEL. LEVEL 8 IS THE LOWEST PERMITTED. WHEN TEXT IS INCLUDED (SEE "INCLUDE" COMMAND BELOW), IT IS ASSUMED THAT ALL HEIRARCHICAL LEVELS IN THE INCLUDED TEXT LIE BELOW THE LEVEL OF THE SECTION WHEREIN THE INCLUSION IS MADE. (APPROPRIATE EXAMPLES WILL BE GIVEN LATER). THE FORM OF SECTION NUMBERS IS <NUMBER>.<NUMBER>.<NUMBER>..., FOR AS MANY NUMBERS AS THE LEVEL INDICATES. FOR EXAMPLE, THE SECTION NUMBERS USED IN THIS MANUAL WERE OBTAINED BY CODING AN APPROPRIATE LEVEL NUMBER IN SECTION TITLES.

REFERENCE MAY LATER BE MADE TO THE SECTION NUMBER BY CODING THE MACRC NAME %<REF>. FOR EXAMPLE,

%TITLE (2,EARN) 'THE IMPORTANCE OF BEING EARNEST'

MIGHT, SAY, PRODUCE THE TITLE,

2.1 THE IMPORTANCE OF BEING EARNEST

WHICH MAY BE REFERRED TO AT ANY TIME THEREAFTER BY THE MACRO NAME, "%EARN", THE SUBSTITUTION BEING "2.1".

TITLES MAY BE INCLUDED IN THE TABLE OF CONTENTS BY CODING %CON AND EXCLUDED BY CODING %NOCON. ONLY THOSE TITLES CONTAINING A SECTION LEVEL DESIGNATOR WILL BE INCLUDED IN THE TABLE OF CONTENTS; IF IT IS NOT DESIRED TO HAVE A NUMBER GENERATED, THE LEVEL ITSELF MAY BE LEFT BLANK. FOR EXAMPLE;

%TITLE () 'APPENDIX A. GREEK ALPHABET'

THE DECLARATION, %CON, NEED BE MADE ONLY ONCE, BEFORE THE FIRST TITLE TO BE INCLUDED IN THE TABLE OF CONTENTS. THE %NOCON DECLARATION WILL STOP SUBSEQUENT TITLES WITH SECTION NUMBERS FROM APPEARING, BUT WILL NOT SUPPRESS PREVIOUS TITLES. THE DEFAULT IS "%NOCON", IF NO SUCH DECLARATION IS MADE. ENTRIES WITHIN THE TABLE OF CONTENTS ARE INDENTED ACCORDING TO THE HEIRARCHICAL LEVEL OF THEIR SECTION NUMBERS.

TITLES ARE NORMALLY CENTERED ON THE PAGE. IN "MASH" STYLE, TITLES ARE NOT CENTERED, BUT ARE INSTEAD INDENTED AT THE HEIRARCHICAL LEVEL INDICATED BY THEIR SECTION NUMBERS, OR AT THE HEIRARCHICAL LEVEL OF THE LAST SECTION TO BE GIVEN A NUMBER.

4.2 PAGE HEADERS

PAGE HEADERS MAY BE PRODUCED BY CODING,

%HDR '<TEXT OF PAGE HEADER>'

THE TEXT MUST BE SHORT ENOUGH TO FIT ON ONE LINE, MINUS 3 CHARACTER POSITIONS FOR A PAGE NUMBER. ALL SUBSEQUENT PAGES WILL BE LABELLED WITH THE HEADER; IF %HDR IS USED ON THE FIRST LINE OF THE INPUT TEXT, IT WILL ALSO BE ENTERED ON THE FIRST PAGE OF THE OUTPUT. THE NULL HEADER, THAT IS, NO HEADER AT ALL, MAY BE PRODUCED BY LEAVING OUT TEXT BETWEEN SINGLE QUOTES, THUS:

%HDR ''

TEXT OF A HEADER MUST BEGIN ON THE SAME LINE OF THE INPUT TEXT, BUT MAY OCCUPY MORE THAN ONE LINE. MULTIPLE BLANKS RESULTING FROM A LINE BREAK ARE REDUCED TO A SINGLE SPACE. HEADERS THAT ARE TOO LONG WILL BE TRUNCATED.

4.3 PARAGRAPHS

IN ALL STYLES BUT "COPY", IT IS NECESSARY TO INDICATE PARAGRAPH BOUNDARIES WITH A SPECIFIC SYMBOL OR OPERATOR. THIS MAY BE DONE BY CODING,

%PAR

OR

%PAR (<LEVEL>)

OR

%PAK (<LEVEL>,<REF>)

IF A LEVEL IS GIVEN, THE APPROPRIATE SECTION NUMBER WILL BE ASSIGNED (SEE SECTION ON "TITLES", ABOVE). %PAR CAUSES A NEW LINE TO BE STARTED IN THE OUTPUT TEXT, AND IN TYPE AND TYPESET STYLES, AN INDENTATION OF 5 CHARACTERS WILL BE PLACED AT THE BEGINNING OF THE NEXT LINE. ONE MAY EITHER FOLLOW %PAR WITH TEXT, AS BELOW,

%PAK COMMON SENSE IS THE MOST WIDELY DISTRIBUTED COMMODITY IN
THE WORLD, FOR EVERYONE THINKS HIMSELF SO WELL ENDOWED WITH IT
THAT THOSE WHO ARE HARDEST TO PLEASE IN ANY OTHER RESPECT
GENERALLY HAVE NO DESIRE TO POSSESS MORE OF IT THAN THEY HAVE.
-- (DESCARTES, LE DISCOURS DE LA METHODE, I)

OR SKIP TO A NEW LINE (WHENCE THE 5 CHARACTER INDENTATION IS LOST).

REFERENCE TO THE PARAGRAPH MAY LATER BE MADE BY CODING THE MACRO NAME %<REF>. FOR EXAMPLE, IN THIS DOCUMENT, WE MARKED THE SECTION ON TITLES WITH THE MACRO NAME "TITLES"; WHENEVER WE REFER TO THAT SECTION NUMBER, WE MAY CODE IT AS %TITLES, RESULTING IN THE TEXT, "4.1". SEE SECTION 4.1.

5 MACROS

5.1 DEFINING MACROS

ANY STRING OF UP TO 8 ALPHANUMERIC CHARACTERS, BEGINNING WITH AN ALPHABETIC CHARACTER (A,B,...,Z), THAT IS NOT ALSO A COMMAND NAME, SUCH AS "TITLE", MAY BE USED AS A MACRO NAME. A MACRO IN SCRIBE CONSISTS OF A STRING OF CHARACTERS, INCLUDING COMMANDS AND MACRO REFERENCES, IF DESIRED, THE LENGTH OF WHICH IS LIMITED TO 330 CHARACTERS UPON EXPANSION. THE FORMAT FOR A DEFINITION IS,

%<MACRO_NAME> = '<TEXT>'

IF THE SAME MACRO NAME IS USED AGAIN IN A DEFINITION STATEMENT, THE NEW SUBSTITUTION REPLACES THE OLD. REFERENCE TO A MACRO THEN IS BY MENTION OF ITS NAME, PRECEDED BY THE "HOT" CHARACTER. FOR EXAMPLE:

%LILBRAT = 'JOHNNY' %REL = 'MOTHER'
%LBR = '%LILBRAT'S %REL'

WILL, WHEN REFERENCE APPEARS IN THE CONTEXT

%LILBRAT AND %LBR TOGETHER WENT TO SEARCH FOR HIS DOG.

EXPAND TO:

JOHNNY AND JOHNNY'S MOTHER TOGETHER WENT TO SEARCH FOR HIS DOG.

OR, IN A MORE ELABORATE EXAMPLE, SUPPOSE WE CODE:

```
%VERSE1 = 'OLD MAC DONALD HAD A FARM, EE-I-EE-I-O.'
%VERSE2 = 'AND ON THAT FARM HE HAD SOME %VARMIT, EE-I-EE-I-O.'
%VERSE3 = 'WITH A %NOISE, %NOISE, HERE, AND A %NOISE, %NOISE,
           THERE,'
%VERSE4 = 'HERE A %NOISE, THERE A %NOISE, EVERYWHERE A %NOISE,'
```

FOLLOWED BY:

```
%VARMIT = 'COWS' %NOISE = 'MOO'
```

THE SEQUENCE (IN %COPY STYLE)

```
%VERSE1
%VERSE2
%VERSE3
%VERSE4
%VERSE1
```

WILL EXPAND TO:

```
OLD MAC DONALD HAD A FARM, EE-I-EE-I-O.
AND ON THAT FARM HE HAD SOME COWS, EE-I-EE-I-O.
WITH A MOO, MOO, HERE, AND A MOO, MOO, THERE,
HERE A MOO, THERE A MOO, EVERYWHERE A MOO,
OLD MAC DONALD HAD A FARM, EE-I-EE-I-O.
```

SINCE WE ARE USING SCRIBE TO PRODUCE THIS DOCUMENT, YOU MIGHT SUPPOSE THE METHOD USED IN GENERATING THE MACRO EXPANSIONS.

5.2 BUILT-IN MACROS

5.2.1 %DATE

THE CURRENT DATE OF THE SCRIBE PRINTOUT MAY BE OBTAINED BY CODING, %DATE, WHERE DESIRED. THE DATE IS GIVEN IN THE FORM MM/DD/YY. FOR EXAMPLE, THIS MANUAL WAS PRINTED ON 05/23/74. YOU MAY OF COURSE CHANGE THE DATE AS DESIRED, BUT THE DEFAULT VALUE IS NOT RECOVERABLE.

6 INCLUDE COMMAND

TEXT FROM PANDORA PARTITIONED DATA SETS MAY BE INCLUDED AS PART OF THE INPUT TEXT FILE BY CODING,

```
%INCLUDE (<DDNAME>)
```

THE DDNAME MUST BE A DATA DEFINITION NAME AGREEING WITH ONE OF THE DD STATEMENTS ACCOMPANYING THE SCRIBE JOB SUBMISSION. FOR EXAMPLE, THIS TEXT WAS DESCRIBED BY THE DD STATEMENT,

```
//PFUTZ DD DSN=HUDSON.SOURCE(SCRIBBLE),DISP=SHR
```

AND THEN INCLUDED BY THE STATEMENT

```
%INCLUDE (PFUTZ)
```

MEMBERS THAT ARE INCLUDED MAY ALSO INCLUDE OTHERS, UP TO A NESTING LEVEL

OF 8 (DEPENDING ON AVAILABLE CORE; IN A 106K PARTITION, ONLY A COUPLE OF LEVELS OF INCLUSION MAY BE ACCOMMODATED).

PARAGRAPH NUMBERING CONVENTIONS FOR INCLUDED TEXT (ALSO DISCUSSED IN SECTION 4.3, ABOVE) ARE AS FOLLOWS. THE ACTUAL LEVEL USED IN GENERATING SECTION NUMBERS IS THE SUM OF ALL THE CURRENT SECTION LEVELS IN ALL THE INCLUSIONS DOWN TO THE LOWEST NESTING LEVEL OF INCLUDED TEXT. FOR EXAMPLE, IF IN THE MAIN FILE WE WERE AT SECTION LEVEL (2), AND THEN INCLUDED TEXT WHICH PROCEEDED TO DECLARE ITS OWN LEVEL (1), THE EFFECTIVE LEVEL IS NOT (1), BUT (3). IF THE SECTION NUMBER IN THE MAIN TEXT WERE 2.1, THE FIRST LEVEL (1) SECTION INCLUDED WOULD HAVE THE NUMBER "2.1.1". IF A SECOND SECTION LEVEL (1) IS DECLARED (SAY, IN A "TITLE" DECLARATION) THEN ITS NUMBER BECOMES "2.1.2". IF WE RETURN TO THE MAIN TEXT FILE, AND START A SECTION AT LEVEL (2), THE NUMBER IS "2.2" (WE "POPPED" BACK UP FROM THE LOWER LEVEL, TO THE NEXT MORE MAJOR HEADING).

7 LINES, SKIP, PAGE COMMANDS

THE %LINES COMMAND IS USED TO INDICATE THE LINE SPACING OF THE OUTPUT TEXT. THE DESIGNATED NUMBER OF LINES, MINUS 1, WILL BE SPACED BETWEEN LINES. THE PARAMETER MUST BE IN THE RANGE 1 TO 8 (DEFAULT: 1). FORMAT OF THE COMMAND:

%LINES (N)

THE %SKIP COMMAND MAY BE USED TO SKIP LINES OF OUTPUT TEXT, IN MULTIPLES OF THE LINE SPACING. FORMAT:

%SKIP (N)

NOTE THAT N MUST BE IN THE RANGE 1 TO 8.

THE %PAGE COMMAND IS USED TO CAUSE SKIPPING TO THE TOP OF THE NEXT PAGE. NO PARAMETER IS USED.

8 SOURCE FILE LISTING, AND ERROR MESSAGES

THE COMMAND, %SCLIST, WILL CAUSE LISTING OF TEXT IN THE INPUT FILES BEGINNING WITH THE FOLLOWING LINE OF INPUT. ERROR MESSAGES ARE KEYED TO CARD SEQUENCE NUMBERS (THE CONTENTS OF COLUMNS 73 TO 80) AND DD NAMES; THE USE OF %SCLIST ENABLES THESE TO BE MATCHED. OTHERWISE, IF THE TEXT IS KEPT UNDER PANDORA, THE LINE SEQUENCE NUMBERS PANDORA USES WILL MATCH THOSE APPEARING ON THE ERROR PRINTOUT FROM SCRIBE. SCRIBE WILL STOP LISTING SOURCE TEXT FOLLOWING THE LINE UPON WHICH A %NOSCLIST COMMAND APPEARS. NORMALLY, NO SOURCE LISTING IS PROVIDED.

9 THE FU COUNTERS: %FIG, %EQN

TWO COUNTERS, %FIG AND %EQN, ARE PROVIDED FOR NUMBERING FIGURES AND EQUATIONS (OR ANY OTHER PURPOSE THE AUTHOR HAS IN MIND). THEIR APPEARANCE IN THE TEXT WILL BE REPLACED BY A NUMBER OF THE FORM, "M.N" WHERE M IS THE NUMBER OF THE HIGHEST LEVEL SECTION IN WHICH THE COMMAND APPEARS, AND N IS THE SEQUENTIAL NUMBERING OF THE %FIG OR %EQN IN THAT SECTION. FOR EXAMPLE, SUPPOSE WE ARE NOW IN SECTION 2.1.3, AND FIRST USE %FIG WITHIN THAT MAJOR SECTION. THE RESULT IS: "2.1". THE NEXT USE OF %FIG WILL RESULT IN "2.2", AND SO ON. WHEN THE MAJOR SECTION NUMBER

ADVANCES TO 3, THE NUMBERING WILL START OVER. THE FORMAT IN GENERAL IS:

 %FIG
OR
 %FIG (<REF>)
OR
 %EQN
OR
 %EQN (<REF>)

WHERE <REF> IS ANY MACRO NAME. SUBSEQUENT REFERENCE TO THAT MACRO NAME WOULD CAUSE THE FIGURE OR EQUATION NUMBER TO BE PRINTED. SEE SECTION 4.1 FOR EXPLANATION AND EXAMPLES.

10 CHANGING THE HOT CHARACTER

THE "HOT CHARACTER", USED TO DESIGNATE COMMANDS AND MACRO REFERENCES, MAY BE CHANGED BY CODING,

 %HOT (<NEW_CHAR>)

WHERE THE NEW CHARACTER MAY BE ONE OF THE 4 CHARACTERS: # \$ % @ . SOME CAUTION IS SUGGESTED FOR USING THE HOT CHARACTER IN CONJUNCTION WITH INSTRUCTIONS IMBEDDED WITHIN MACRO DEFINITIONS. FOR EXAMPLE, IF WE CODE

 %CLDMODE = '%TYPE'

AND LATER INDICATE:

 %HOT (#)

THE INVOCATION

 #CLDMODE

WILL EXPAND TO "%TYPE", WHICH WILL NOT BE RECOGNIZED AS A COMMAND.

11 APPENDICES

APPENDIX A. SUMMARY OF SCRIBE COMMANDS

IN THE TABLE BELOW, LET % STAND FOR THE HOT CHARACTER.

COMMAND	EXPLANATION
%CON	TURN ON TABLE OF CONTENTS FLAG FOR TITLES.
%COPY	SET COPY MODE. (DON'T RE-ARRANGE WORDS)
%EQN	EQUATION NUMBER (FORMAT: M.N, WHERE M IS MAJOR SECTION, N THE EQUATION).
%EQN (<REF>)	THE OPTIONAL REFERENCE WILL DEFINE A MACRO WHOSE SUBSTITUTION IS M.N
%FIG	FIGURE NUMBER (SEE %EQN, ABOVE)
%FIG (<REF>)	
%HDR '<HEADER TEXT>'	PLACE HEADER TEXT AT TOP OF EACH PAGE
%HOT (<HOT_CHAR>)	MAKE <HOT_CHAR> THE HOT CHARACTER. MUST BE: # \$ % ^
%INCLUDE (<DDNAME>)	INCLUDE TEXT FROM MEMBER ASSIGNED BY DD STATEMENT WITH DDNAME. ALSO, SUBORDINATE ANY SECTION LEVELS WITHIN THE INCLUDED TEXT.
%LINES (<NR>)	SET LINE SPACING TO NUMBER (1 TO 8)
%MASH	SET MASH MODE. INDENT SECTIONS ACCORDING TO THEIR LEVEL NUMBERS.
%NUCCN	TURN OFF TABLE OF CONTENTS FLAG
%NOSCLIST	TURN OFF SOURCE LISTING
%PAGE	SKIP TO NEXT PAGE IN OUTPUT
%PAR	INTRODUCE NEW PARAGRAPH. INDENT 5 SPACES. NUMBER ACCORDING TO SECTION LEVEL. MAY REFERENCE PAR # IF DESIRED.
%PAR (<LEVEL>)	
%PAR (<LEV>,<REF>)	
%SCLIST	TURN ON SOURCE LISTING.
%SKIP (<NR>)	SKIP NUMBER OF MULTIPLES OF THE LINE SPACING.
%TITLE '<TITLE TEXT>'	INTRODUCE TITLE. CENTER IF IN %COPY, %TYPE, %TYPESET MODES. ASSIGN LEVEL NUMBER, IF PROVIDED, AND PLACE IN TABLE OF CONTENTS. MAY REFERENCE SECTION # IF DESIRED.
%TITLE (<LEVEL>) '<TEXT>'	
%TITLE (<LEV>,<REF>)	
%TITLE (<LEV>,<REF>) '<TITLE TEXT>'	
%TYPE	SET TYPE MODE. WORDS ARE RE-ARRANGED INTO PARAGRAPHS, WITHOUT BREAKING WORDS
%TYPESET	SET TYPESET MODE. SAME AS ABOVE, ONLY JUSTIFY BOTH MARGINS.

APPENDIX B. COMMAND DEFAULTS

COMMAND	DEFAULT
%CON %NOCON	NO TABLE OF CONTENTS
%COPY %MASH %TYPE %TYPESET	COPY STYLE
%HDR '<HEADER TEXT>'	NULL HEADER
%HUT (<HCT CHARACTER>)	%
%LINES (<NUMBER>) %SKIP (<NUMBER>)	1
%SCLIST %NOSCLIST	NO SOURCE LISTING

APPENDIX C. PROGRAM MESSAGES

IF ANY MESSAGES (WHETHER DIAGNOSTIC OR INFORMATIONAL) ARE LOGGED BY SCRIBE, THESE WILL BE PRINTED TOGETHER IN A SECTION UNDER THE HEADING, "SCRIBE ERROR MESSAGE LOG". IN THIS LOG WILL APPEAR THE SOURCE FILE NAME (DC NAME), THE LINE SEQUENCE NUMBER IN THE SOURCE FILE, IF PRESENT, AN ERROR MESSAGE NUMBER, A "SEVERITY" CODE, AND SOME TEXT, HOPEFULLY EXPLAINING THE SITUATION. THE SEVERITY CODES ARE AS FOLLOWS:

- I -- INFORMATIONAL (THERE PROBABLY WAS NO ERROR, BUT SCRIBE WANTED TO CALL YOUR ATTENTION TO A SITUATION.)
- W -- WARNING. SOMETHING IS GOING TO HAPPEN WHICH YOU MAY NOT APPROVE OF. CHECK YOUR TEXT.
- E -- AN OUTRIGHT ERROR CONDITION. PROBABLY INCORRECT USE OF A COMMAND.
- S -- SEVERE ERROR CONDITION. INCORRECT USE OF A COMMAND OR MACRO. POSSIBLE LOSS OF INFORMATION, SETTING OF AN UNINTENDED MODE, ETC.

WE HAVE NOT BEEN TOO STRINGENT IN ASSIGNING THESE CODES; THE DISTINCTION BETWEEN "E" AND "S", FOR EXAMPLE, IS QUITE FUZZY.

%TITLE 'TABLE OF ERROR AND DIAGNOSTIC MESSAGES'

MESSAGE			EXPLANATION
COP01	W	LINE TOO LONG TO COPY. TRUNCATED.	INPUT LINE LONGER THAN OUTPUT LINE, AND SCRIBE WAS IN COPY MODE. DID YOU USE ANY MACROS OR PARAGRAPH NUMBERS? THESE COULD PUSH TEXT OFF THE LINE.
EXP01	E	MACRO <NAME> UNDEFINED. NO ACTION TAKEN.	DID YOU USE A MACRO NAME BEFORE DEFINING IT? FORWARD REFERENCES AREN'T POSSIBLE. DID YOU MIS- SPELL A COMMAND? ALL UNRECOGNIZED COMMANDS ARE TREATED AS MACRO NAMES.
EXP02	S	MACRO <NAME> TOO LONG TO EXPAND. MACRO REQUEST DELETED.	THERE IS A FINITE LIMIT TO THE AMOUNT OF TEXT WHICH CAN BE HELD IN TEMPORARY STORAGE DURING MACRO EXPANSION (330 CHARS).
EXP03	S	TEXT FOLLOWING MACRO EXPANSION WOULD OVERFLOW TREATED AS SEPARATE WORD	CONCATENATION OF MACRO WITH A VERY LONG TEXT STRING. BROKEN UP WITH A BLANK IN BETWEEN.
FIG01	E	TEXT FOLLOWING "FIG" OR "EQN" COMMAND WOULD OVERFLOW TEXT BUFFER. TREATED AS SEPARATE WORD	SIMILAR TO EXP03, ABOVE.

ERROR AND DIAGNOSTIC MESSAGES, CONT.

MESSAGE		EXPLANATION
FCR01	W STRING COULD NOT BE DIVIDED AT A BLANK FOR OUTPUT.	IN A TITLE OR TABLE OF CONTENTS ENTRY, OR POSSIBLY IN A LINE OF TEXT IN "COPY" MODE, IT WAS NOT POSSIBLE TO DIVIDE TEXT AT A BLANK. TRY HYPHENATING.
HCR01	E NO HEADER OR MISSING ''	HEADER TEXT MUST BE SET IN SINGLE QUOTES; PARAMETER MUST BEGIN ON SAME LINE AS COMMAND. IF A NULL HEADER IS DESIRED, SAY, %HDR ''
HDR02	W HDR TEXT > LINE WIDTH-3. TRUNCATED.	HEADERS ARE LIMITED TO ONE LINE, AND NEED TO LEAVE ROOM FOR PAGE#
HCT01	E BAD OR MISSING HOT CHARACTER SPECIFICATION OR MISSING (). IGNORED.	USE () TO INTRODUCE HOT CHAR.
HCT02	E <CHAR> NOT A LEGAL HOT CHARACTER; IGNORED.	MAY ONLY USE # \$ @ % AS HOT CHAR.
INC01	S DD CARD FOR FILE <NAME> MISSING. %INCLUDE IGNORED.	THE JCL FOLLOWING YOUR INVOCATION OF THE SCRIBE PROGRAM MUST CONTAIN A DD CARD DESCRIBING INPUT. SEE SECTION 6 (ABOVE)
INC02	S OPEN FAILED FOR FILE <NAME>; %INCLUDE IGNORED ONCODE WAS <ON-CODE>.	CHECK YOUR JCL. THE PL/I ON-CODE MAY BE HELPFUL; LOOK IT UP. OTHERWISE SEE THE AUTHORS.
INC03	S MISSING DD NAME OR (ON %INCLUDE. %INCLUDE IGNORED.	%INCLUDE NEEDS A DD NAME IN ().
INC04	E REMAINDER OF LINE AFTER %INCLUDE TOO LONG TO SAVE. TRUNCATED AFTER <SUBSTRING>.	SCRIBE TRIES TO SAVE THE TEXT (IF ANY) ON THE LINE CONTAINING THE %INCLUDE COMMAND. IT WILL BE PRINTED FOLLOWING THE END OF FILE IN THE INCLUDED TEXT.
INC05	S INVALID FILE NAME ON %INCLUDE COMMAND. %INCLUDE IGNORED.	MAL-FORMED FILE NAME. SEE SECTION 6 (ABOVE)
INC07	W %INCLUDE FILE NAME TOO LONG; ONLY FIRST 8 CHARACTERS USED.	DD NAMES MUST BE 8 OR FEWER CHAR.
INC08	S %INCLUDE COMMANDS NESTED DEEPER THAN 8. %INCLUDE IGNORED.	CHECK TO SEE WHETHER YOU INCLUDED TEXT FROM A FILE WHICH ALLOWS INCLUSION OF THE ORIGINAL FILE. INFINITE INCLUSIONS NOT ALLOWED
LSK01	S INVALID PARAMETER TO "LINES" OR "SKIP" COMMAND. NUMBER EXPECTED	DEFAULT IS 1.
LSK02	S INVALID NUMBER OF LINES. DEFAULTED.	

ERROR AND DIAGNOSTIC MESSAGES, CONT.

MESSAGE			EXPLANATION
MCD01	S	EXPECTED MACRO NAME MISSING. NO ACTION TAKEN	SEE SECTION 5.1 FOR MACRO DEFS.
MCD02	E	MACRO NAME TOO LONG. TRUNCATED TO <NAME>.	8 OR FEWER CHARACTERS
UTH01	S	MACRO DEFINITION TOO LONG. IGNORED.	LIMIT: 330 CHARACTERS.
UTH02	S	MACRO DEFINITION MISSING SUBSTITUTION STRING OR '	SEE SECTION 5.1
UTH01	I	<COMMAND> UNIMPLEMENTED. NO ACTION TAKEN.	(SORRY ABOUT THE CONFUSION IN ERROR NUMBERS.)
PNR01	S	BAD PARAGRAPH DESIGNATOR IGNORED.	APPLIES EQUALLY TO SECTION NUMBER APPEARING IN A TITLE.
PNR02	S	PARAGRAPH LEVEL OUTSIDE RANGE 1 TO 8. IGNORED.	SEE SECTION 4 (ABOVE)
PNR03	S	PARAGRAPH LEVEL, DUE TO INCLUSIONS, OUTSIDE RANGE 1 TO 8. IGNORED.	TOO MANY HIERARCHICAL LEVELS IN YOUR TEXT, DUE TO INCLUSIONS. SEE SECTION 6 (ABOVE)
PNR04	I	AT LEAST 1 PARAGRAPH LEVEL WAS SKIPPED; A GUESS WAS MADE.	YOU ATTEMPTED TO GO, SAY, FROM A MAJOR SECTION (A CHAPTER) TO A SUB-SUB-SECTION WITHOUT ANY INTERVENING SUB-SECTION. THE "GUESS" IS THAT YOU WILL BE CONTENT WITH NUMBERING SKIPPED SECTIONS WITH THE LAST NUMBERS USED AT THEIR LEVELS.
PRM01	S	PARAMETER TOO LONG, OR MISSING ' OR). 0 LENGTH PARAM ASSUMED.	SEE SECTION 2 (ABOVE)
SCR01	S	INCOMPLETE COMMAND WITHIN A PARAMETER STRING. IGNORED.	AN ATTEMPT IS ALWAYS MADE TO EXPAND ANY MACROS, OR CARRY OUT COMMANDS RECURSIVELY, WHEN THESE APPEAR IN PARAMETERS. ONE OF YOUR COMMANDS HAD AN INCOMPLETE OR MISSING PARAMETER. SOME COMMANDS HAVE OPTIONAL PARMS; THESE WILL BE CONSIDERED INCOMPLETE UNLESS SUPPLIED WITH NULL PARMS, SUCH AS '' OR ().
TIT01	W	PARAGRAPH NUMBERING PARAMETER TOO LONG. TRUNCATED.	LIMIT: 15 CHARACTERS.

ERROR AND DIAGNOSTIC MESSAGES, CONT.

MESSAGE			EXPLANATION
TXT01	S	INDENTATION WOULD CAUSE PRINT LINES TO BE TOO SHORT. INDENTATION IGNORED.	YOU HAVE SET A PAGE WIDTH WHICH DOES NOT ALLOW SUFFICIENT SPACE FOR INDENTATIONS (DUE TO HEIRARCHICAL SECTION OR PAR. NUMBERS) IN TABLE OF CONTENTS, OR IN MAIN TEXT UNDER MASH MODE
TYP01	w	ACHTUNG: DER VORGE- SCHRIEBENEN SATZ ENHAELT EINEN VON MEHERERTEILCHEN KOMPONIERTE WORT. ABGESCHNITTEN.	ONLY HEAVY USERS OF ARCAE COM- POUND WORDS NEED FEAR THIS CONDITION.