PIRATE REFERENCE MANUAL

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tions of the PIRATE library commands and a tutorial introduction to
PROCSY and PIRATE is contained in separate documents.

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PURDUE INTERACTIVE REMOTE ACCESS TERMINAL ENVIRONMENT

R.C. SCHWABEL

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FILE STRUCTURE.
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          PIRATE RECOGNIZES TWO GENERAL CLASSES OF DISC FILES,
INTERNAL AND EXTERNAL. ALL FILES WHICH APPEAR ELSEWHERE IN
THE *MACE* OPERATING SYSTEM ARE CONSIDERED EXTERNAL. THIS
INCLUDES CARD IMAGE TEXT FILES, *MODIFY* OPL FILES, AND
EXECUTABLE BINARY FILES OF ANY TYPE. A *PIRATE* INTERNAL
FILE IS A SPECIAL FILE WHICH IS NOT CURRENTLY RECOGNIZED
BY ANY OTHER PROCESSOR EXCEPT *PED*, THE PURDUE EDITOR. AN
INTERNAL FILE CONTAINS ALL INDEXING INFORMATION NECESSARY
TO ACCESS ANY TEXT LINE IN THE FILE WITH A MAXIMUM OF ONE
CIO CALL. IT IS LOGICALLY COMPOSED OF A SECTION CONTAINING
HEADER BLOCKS, AND A SECTION CONTAINING TEXT BLOCKS. WHILE
AN INTERNAL FILE IS ACTIVE IN A *PIRATE* JOB, ALL THE HEADER
BLOCKS ARE RESIDENT IN CENTRAL MEMORY AS A DOUBLY LINKED
LIST. EACH HEADER BLOCK DESCRIBES ONE TEXT BLOCK, AND
CONTAINS THE DISK ADDRESS OF THE TEXT BLOCK, THE CENTRAL
MEMORY ADDRESS IF THE BLOCK IS IN *CM*, THE FIRST AND LAST
LINE NUMBERS CONTAINED IN THE TEXT BLOCK, AND VARIOUS OTHER
FLAGS USED BY THE PAGING AND TEXT MANAGEMENT ROUTINES.
WHEN AN INTERNAL FILE IS CLOSED, EITHER EXPLICITLY BY A
QCLOSE COMMAND, OR IMPLICITLY BY THE SYSTEM AT LOGOFF
AND OTHER TIMES THE SYSTEM NEEDS THE SPACE OCCUPIED BY THE
FILE, THE HEADER BLOCKS ARE WRITTEN TO THE DISK FILE.

          THE DISK FILE IS PHYSICALLY COMPOSED OF A LEADING
HEADER RECORD WHICH CONTAINS THE HEADER BLOCKS, FOLLOWED BY
AS MANY 4 PRU BLOCKS AS ARE REQUIRED TO CONTAIN ALL THE TEXT
BLOCKS. THE FIRST RECORD CONTAINS AS MANY HEADER BLOCKS AS
WILL FIT IN 4 PRUS ON THE DISK. IF MORE HEADER BLOCKS ARE
PRESENT THAN WILL FIT INTO THE FIRST RECORD, THE LAST WORD
OF THE FIRST RECORD WILL BE A POINTER TO THE DISK ADDRESS OF
THE REST OF THE HEADER BLOCKS.

          PIRATE INTERNAL FILES MAY BE USED IN THE PURDUE
EDITOR WITH A MINIMUM OF SYSTEM OVERHEAD. LIKEWISE, *PED*
CAN GENERATE A *PIRATE* INTERNAL FILE IF THE *I* OPTION IS
SELECTED ON THE *WRITE* COMMAND. THE *PED* *READ* COMMAND
MAY BE USED TO INITIATE AN EDIT OF A *PIRATE* INTERNAL FILE,
BUT A COPY OF THE FILE WILL BE MADE BEFORE THE EDITING BEGINS.
THIS OPTION IS STILL FASTER THAN EDITING AN EXTERNAL FILE WITH
PED. THE *USE* COMMAND IS THE MOST EFFICIENT MEANS
OF ACCESSING A *PIRATE* INTERNAL FILE FROM *PED*. NO COPYING
IS NECESSARY, JUST THE HEADER BLOCKS ARE READ INTO CENTRAL

MEMORY FROM THE FIRST RECORD OF THE FILE. THE *FUF* COMMAND
HAS THE DISADVANTAGE OF NOT PROVIDING A BACKUP OF THE FILE
TO COVER INADVERTENT DESTRUCTION OF TEXT LINES BY AN
INSUFFICIENTLY SPECIFIED CONTEXT.

THE *QDISPLAY* OPERATOR IN *PIRATE* WILL DISPLAY BOTH
INTERNAL AND EXTERNAL TEXT FILES, AND MODIFY OPL FILES.
INTERNAL FILES ARE ACCESSED DIRECTLY, WHERE EXTERNAL FILES
MUST BE SCANNED A LINE AT A TIME IF THE DISPLAY OPERATION
DOES NOT START FROM THE BEGINNING OF THE FILE.

THE *PIRATE* EDITOR REQUIRES INTERNAL MODE FILES AND
WILL CONVERT AN EXTERNAL MODE FILE TO
INTERNAL BEFORE ANY EDITING IS DONE. THE FILE IS LEFT IN
INTERNAL MODE AFTER THE EDITING IS COMPLETE. THE USER MAY
FORCE THE FILE BACK TO EXTERNAL MODE BY USING THE *QWRITE*
OPERATOR. IF NO OPTIONS ARE SPECIFIED FOR THE *QWRITE*
OPERATOR, AND THE FILE IS ALREADY IN EXTERNAL MODE, NO
ACTION WILL BE TAKEN. HOWEVER, LINE NUMBERS MAY BE ADDED,
OR THE FILE MAY BE EXPANDED OR COMPRESSED BY SPECIFYING
THE PROPER OPTIONS ON THE *QWRITE* COMMAND.
AN EXTERNAL FILE MAY BE FORCED INTO INTERNAL MODE FOR
FASTER SCANNING BY THE *QDISPLAY* OPERATOR BY USING THE
QRI OPERATOR. THIS OPERATOR WILL NOT TAKE ANY ACTION IF
IT IS USED ON A FILE WHICH IS ALREADY IN INTERNAL MODE.

DUE TO CENTRAL MEMORY LIMITATIONS, *PIRATE* WILL ONLY KEEP
A LIMITED NUMBER OF FILES IN AN ACTIVE STATUS AT ANY
ONE TIME. THESE FILES ARE KEPT IN A FILE STACK WHICH IS
UPDATED AT EVERY FILE REFERENCE. THE MOST RECENTLY REFERENCED
FILE NAME IS ALWAYS AT THE TOP OF THE STACK. IF THE STACK
BECOMES FULL, THE BOTTOM ENTRY IS DELETED AND THE FILE IS
CLOSED (AS IF THE *QCLOSE* OPERATOR HAD BEEN USED) WHEN
SPACE IS NEEDED FOR A NEW FILE. THE CURRENTLY ACTIVE FILE
NAMES MAY BE DISPLAYED BY USING THE *FILES* OPERATOR.
INFORMATION ABOUT ANY OTHER LOCAL FILES MAY BE OBTAINED BY
USING THE EMESAE PROGRAM *FILETBL*.

FILE NAME REQUIREMENTS
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ALL LOCAL FILE NAMES MAY CONTAIN ONLY LETTERS AND NUMBERS.

ALL JOB FILE NAMES MUST ALSO START WITH A LETTER.

CERTAIN FILE NAMES ARE RESERVED AND MAY NOT BE USED.
INCLUDED IN THIS GROUP ARE:
                INPUT   - SYSTEM *INPUT* FILE
                OUTPUT   - SYSTEM *OUTPUT* FILE
                PIRMAC   - SYSTEM MACRO LIBRARY
                PUNCH   - SYSTEM *PUNCH* FILE

```
        PUNCHB     - SYSTEM *PUNCHB* FILE
        PUNCH8     - SYSTEM *PUNCH8* FILE
        P8         - SYSTEM *P8* FILE
        XEQTINP    - XEQ SYSTEM INPUT FILE
```

PROCSY - PIRATE INCOMPATIBILITIES
------ - ------ -------------------

        THE FOLLOWING *PROCSY* VERSION 1.0 OPERATORS
WERE IMPLEMENTED TO PROVIDE UPWARD COMPATIBILITY ONLY.
THEY WERE REMOVED ON 11/05/73 AS *PIRATE* HAD BECOME FULLY
OPERATIONAL. COMMAND MACROS USING THE OLD FORMS SHOULD BE
CONVERTED TO THE NEW -Q- FORMS AS SOON AS POSSIBLE. THE NEW
-Q- OPERATORS MAY ALSO BE USED FROM COMMAND MODE. THE
ARITHMETIC OPERATORS, QADD, QSUB, QMUL, QDVIDE, AND QCONVERT,
WILL DISPLAY THE VALUE OF THE RESULT AT THE TERMINAL IF THEY
ARE USED FROM COMMAND MODE.

```
ADD      - QADD
CONVERT  - QCONVERT
DIVIDE   - QDVIDE
EXCHANGE - QEXCHANGE
FILES    - QFILES
MULTIPLY - QMULTIPLY
SET      - QASSIGN
SUBTRACT - QSUBTRACT
```

SINCE *PIRATE* ALLOWS 30 PARAMETERS 0≤N≤29 AND *PROCSY* ONLY
ALLOWS 10, 0≤N≤9, THE MEANING OF ^PXYZ (WHERE X,Y,Z ARE
NUMBERS BETWEEN 0 AND 9) IS DIFFERENT UNDER THE TWO SYSTEMS.
PIRATE ALLOWS UP TO TWO DIGITS TO IDENTIFY A PARAMETER
NUMBER. ANY *PROCSY* LINE OF THE FORM ^PXYZ SHOULD BE
REWRITTEN AS ^P0XYZ TO FUNCTION THE SAME UNDER *PIRATE*.

PIRATE ALLOWS MACRO JUMPS BACKWARD AS WELL AS FORWARD.
ALL MACRO JUMPS SHOULD BE CHECKED TO INSURE UNIQUE LABELS.

THE *PAR* PRIMITIVE HAS BEEN SLIGHTLY MODIFIED. THE FIRST
PARAMETER IS THE NUMBER OF PARAMETERS THAT WILL BE ACCEPTED.
IF NON-NULL, THE PARAMETER RANGE SPECIFIED WILL BE NULLED
BEFORE USER INPUT IS ACCEPTED.
THE SECOND PARAMETER IS A PROMPT/REPROMPT CHARACTER STRING
UP TO 10 CHARACTERS IN LENGTH. THIS WILL BE USED TO PROMPT
THE USER FOR INPUT AND AS A REPROMPT (IN CASE A RUBOUT IS
ENTERED).
THE THIRD PARAMETER SUPPRESSES INITIAL CARRIAGE CARRIAGE
CONTROL. IF NON-NULL, THE INITIAL CARRIAGE RETURN/LINE FEED
PRECEEDING THE PROMPT WILL BE SUPPRESSED. ALL REPROMPTS WILL
BE PROCEEDED BY A CARRIAGE RETURN/LINE FEED.
THE DEFAULTS PARAMETERS ARE ^P0-^P9. THE DEFAULT PROMPT/

REPROMPT IS A QUESTION MARK-BLANK. THE DEFAULT CARRIAGE
CONTROL IS NULL.

PIRATE WILL PROCESS COMMANDS EXACTLY LIKE *PROCCY* WITH THE
ADDED FEATURE, THAT ALL COMMANDS NOT IDENTIFIED AS PRIMITIVES,
USER OR SYSTEM MACROS, WILL BE EXECUTED AS EMESAE PROGRAMS.
AS LONG AS THERE ARE NO PRIMITIVE OR MACRO NAME CONFLICTS, THE
USER MAY ENTER A EMESAE PROCESSOR BY ENTERING ITS NAME AS A
COMMAND. (E.G. MUTIL, PED, ALFIE, PFILES)
FOR THIS REASON, SEVERAL OF THE SYSTEM MACROES HAVE BEEN
DELETED. (E.G. ALFIE, PED)

COMMAND LINE SYNTAX.
-------- ---- -------

        ALL COMMAND LINES ARE PARSED BY A COMMON ROUTINE. THIS
ROUTINE ISOLATES THE FIRST STRING OF ALPHANUMERIC CHARACTERS
AND USES IT AS THE COMMAND NAME. EACH SUCCEEDING STRING
OF ALPHANUMERIC CHARACTERS IS TAKEN AS A PARAMETER. EACH
PARAMETER MAY BE UP TO 70 CHARACTERS LONG. HOWEVER, NO
COMMAND MAY BE CONTINUED FROM ONE LINE TO THE NEXT. THE
CHARACTERS WHICH SEPARATE EACH PARAMETER ARE SAVED AND
ARE AVAILABLE TO COMMANDS AS THE -S- PARAMETERS.
PARAMETERS PASSED FROM ONE MACRO TO ANOTHER MAY CONTAIN UP
TO 7 CHARACTERS.

A QUOTE CHARACTER (-Q- PARAMETER) IS DEFINED WHICH ALLOWS
ANY STRING OF CHARACTERS ENCLOSED BY THE QUOTE CHARACTER
TO BE ENTERED AS ONE PARAMETER. THIS ALLOWS A PARAMETER TO
CONTAIN CHARACTERS WHICH ORDINARILY WOULD BE CONSIDERED AS
SEPARATORS.

THE CHARACTER BLANK (OR SPACE) IS CONSIDERED AS A -SOFT-
SEPARATOR. A BLANK BETWEEN TWO ALPHANUMERIC PARAMETERS IS
CONSIDERED AS A SEPARATOR. A BLANK FOLLOWING A SEPARATOR
IS NOT CONSIDERED AS A SEPARATOR. A BLANK PRECEEDING A
SEPARATOR IS NOT CONSIDERED AS A SEPARATOR EITHER.

REFORMATTING OPTIONS
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THESE OPTIONS MAY BE SPECIFIED ON SEVERAL OF THE OPERATORS
TO CONTROL THE REFORMATTING OF LINES IN A FILE.

FILE CONTROL.

LL=NNN - SKIP THE FIRST *NNN-1* LINES ON THE FILE.
         (LOW LINE)
HL=NNN - STOP AFTER THE LINE *NNN*.
         (HIGH LINE)
LR=NNN - SKIP THE FIRST *NNN* RECORDS. (AN END OF FILE IS
         COUNTED AS AN END OF RECORD.)
         (LOW RECORD)
HR=NNN - STOP AFTER RECORD *NNN*.
         (HIGH RECORD)
LF=NNN - SKIP THE FIRST *NNN* FILES.
         (LOW FILE)
HF=NNN - STOP AFTER THE FILE *NNN*.
         (HIGH FILE)

IF -LL-, -LF-, AND -LR- ARE ALL SPECIFIED, FIRST, -LF- FILES
WILL BE SKIPPED, THEN, -LR- RECORDS WILL BE SKIPPED, AND
FINALLY, -LL- LINES WILL BE SKIPPED.

LINE CONTROL.

TR   - TRUNCATE ALL LINES TO A MAXIMUM OF 72 CHARACTERS.

FO   - DO NOT BLANK THE FIRST COLUMN OF EACH LINE AS IF IT
          WERE A PRINTER FORMAT CONTROL CHARACTER.

RS   - SUPPRESS PROCESSING END OF FILES AND END OF
          RECORDS.

LC=NNN - SKIP THE FIRST *NNN-1* COLUMNS OF EACH LINE AND
         TRANSFER COLUMN *NNN* AS THE FIRST COLUMN OF THE
         LINE. THIS COLUMN WILL BE CONVERTED TO A BLANK
         UNLESS THE -FO- OPTION IS ALSO SELECTED TO PRESERVE
         THE FORMAT CONTROL CHARACTER.
         (LEFT COLUMN)
RC=NNN - DO NOT PROCESS THE COLUMNS OF EACH LINE PAST
         COLUMN *NNN*. THE *TR* OPTION IS EQUIVALENT TO
         RC=72.
         (RIGHT COLUMN)
LM=NNN - ADD *NNN* LEADING BLANKS TO EACH LINE.
         (LEFT MARGIN)
RM=NNN - DO NOT ALLOW THE LINE TO EXTEND PAST COLUMN *NNN*.
         (RIGHT MARGIN)

IF -LC-, -RC-, -LM-, AND -RM- ARE ALL SPECIFIED, AND ARE
INCONSISTENT. I.E. RC-LC+LM > RM, THE RIGHT COLUMN, -RC-,
WILL BE REDUCED TO REMOVE THE INCONSISTENCY.

PARAMETER ERROR MESSAGES
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THESE ERROR MESSAGES MAY BE GENERATED BY ANY OPERATOR WHICH
USES A SUBSTITUTABLE PARAMETER NAME AS AN ARGUMENT.

QXX - UNRECOGNIZED PARAMETER NAME - Y
         THE CHARACTER, -Y-, IS NOT THE NAME OF A SUBSTITUTABLE
         PARAMETER.

QXX - INVALID SUBSTITUTABLE PARAMETER NAME - Y
         THE CHARACTER, -Y-, CAN NOT BE THE NAME OF A
         SUBSTITUTABLE PARAMETER BECAUSE IT IS NON-ALPHANUMERIC.

UNEXPECTED EOL IN PARAMETER NAME
         THE PARAMETER ESCAPE CHARACTER WAS THE LAST CHARACTER
         IN A LINE OF TEXT TO BE SUBSTITUTED.

QXX - PARAMETER NUMBER TOO LARGE
         THE NUMBER FOLLOWING A P, G, S, OR Z PARAMETER WAS
         GREATER THAN 29.

QXX - INVALID WIDTH PARAMETER NAME
         THE NUMBER FOLLOWING A ^W WAS GREATER THAN 1.

PARAMETER SUBSTITUTION.
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PARAMETER NAMES.

A   USER ACCOUNT NUMBER   (READ ONLY)
C   CURRENT TIME OF DAY CLOCK -HH:MM:SS-   (READ ONLY)
D   CURRENT DATE -MM/DD/YY-   (READ ONLY)
E   PARAMETER ESCAPE CHARACTER (^)
F   LAST *QINSERTED* FILE NAME   (READ ONLY)
G(NN)   USER GLOBAL PARAMETERS (0≤NN≤29)
         (7 CHARACTERS OR LESS)
I   USER IDENTIFIER   (READ ONLY)
J   INTEGRAL PART OF LAST LINE NUMBER *QINSERTED*
         IN THE FILE ^F   (READ ONLY)
L   MESA PROGRAM NEST LEVEL   (READ ONLY)
P(NN)   USER MACRO PARAMETERS (0≤NN≤29)
Q   QUOTE CHARACTER (≠)
R   1 RANDOM DIGIT FOR EACH REFERENCE   (READ ONLY)
S(NN)   SEPARATOR CHARACTERS USED ON THE LAST MACRO
         CALL. (0≤NN≤29)
T   TERMINAL IDENTIFIER (3 DIGITS)   (READ ONLY)
U   NUMBER OF ACTIVE USERS   (READ ONLY)
V   ACCOUNT NUMBER PASSWORD   (READ ONLY)
W(N)   WIDTH PARAMETER (IF N=0 OR IS OMITTED, IT IS
         THE WIDTH OF PARAMETERS CHECKED ON COMPARISONS
         IF N=1, IT IS THE WIDTH OF FILE NAMES TO

```
           BE SCANNED FOR COMMANDS)
X          EDIT CONTROL CHARACTER (POUND SIGN)
Y          CURRENT MACRO FILE NAME                    (READ ONLY)
Z(NN)      SYSTEM SCRATCH PARAMETERS (AVAILABLE FOR USER
           USE, BUT MAY BE USED BY THE SYSTEM AT ANY
           TIME FOR ERROR MESSAGES) (0≤NN≤29)
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RESERVED FOR FUTURE USE

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K          PARAMETER CONCATENATION CHARACTER
O(NN)      OCTAL TO CHARACTER CONVERSION
```

BROADCAST - SEND A MESSAGE TO THE MONITOR TERMINAL

QBROADCAST - SEND A MESSAGE TO MONITOR TERMINAL

BRO[ADCAST]

        THE USER WILL BE ISSUED A PROMPT TO ENTER ITS MESSAGE.

CHECK - TEST FOR LOCAL FILE EXISTENCE

CHE[CK],FILE-NAME,LABEL

        IF *FILE-NAME* IS A LOCAL FILE, SKIP TO *LABEL*,
        OTHERWISE CONTINUE.

CTL   - SET CONTROL - B RESPONSE

CTL,X,Y,Z
        WHERE: X IS THE COMMAND LINE TO BE EXECUTED AFTER
                     A CONTROL-B.
                  Y IF PRESENT, WILL FORCE EXECUTION OF THE
                     NEXT COMMAND IN THE CURRENT MACRO.
                  Z IF PRESENT, WILL FORCE A SKIP TO THE LINE
                     LINE *X* IN THE CURRENT MACRO, WHERE
                     X IS A LABEL OR INTEGER LINE NUMBER.

GOTO - MACRO LINE TRANSFER PROCESSOR

GOT[O],LINE
            WHERE: LINE WILL BE TAKEN AS A LINE NUMBER IF IT
                        IS NUMERIC. IT WILL BE TAKEN AS THE
                        FIRST CHARACTERS OF A LINE IF
                        ALPHANUMERIC.

IFEQUAL - MACRO PARAMETER EQUALITY TEST

IFE[Q],A,B,LABEL
            IF *A* IS EQUAL TO *B*, TRANSFER TO LINE, *LABEL*.
            IF *LABEL* IS NON-NUMERIC, IT SPECIFIES THE FIRST
            CHARACTERS OF A LINE IN THE MACRO. IF NUMERIC, IT
            SPECIFIES THE LINE NUMBER TO BE PROCESSED NEXT.

IFGT   - MACRO GREATER THAN TEST

IFG[T],A,B,LABEL

            IF *A* IS GREATER THAN *B*, TRANSFER TO LINE, *LABEL*.
            IF *LABEL* IS NON-NUMERIC, IT SPECIFIES THE FIRST
            CHARACTER OF A LINE. OTHERWISE IT SPECIFIES A LINE
            NUMBER.

IFLT   - MACRO PARAMETER LESS THAN TEST

IFL[T],A,B,LABEL

            IF *A* IS LESS THAN *B*, TRANSFER TO THE LINE *LABEL*.
            IF *LABEL* IS NON-NUMERIC, IT SPECIFIES THE FIRST
            CHARACTERS OF A LINE IN THE MACRO. IF NUMERIC, IT
            SPECIFIES A LINE NUMBER IN THE MACRO.

IFNOTEQUAL - MACRO PARAMETER VALUE NOT EQUAL TEST

IFN[E],A,B,LABEL
            IF *A* IS NOT EQUAL TO *B*, TRANSFER TO LINE, *LABEL*.

IF *LABEL* IS NON-NUMERIC, IT SPECIFIES THE FIRST
CHARACTERS OF A LINE. OTHERWISE IT SPECIFIES A LINE
NUMBER.

JOBCARD - INITIALIZE *JOBCA* FILE

JOB[CA][,A=ACCT,NAME][,JOBCARD PARAMETERS]

INITIALIZE THE FILE *JOBCA* WITH A JOBCARD. IF THE
A=ACCT,NAME OPTION IS SPECIFIED, THE JOBCARD WILL USE
-ACCT-, AND -NAME-. IF IT IS NOT SPECIFIED, THE CURRENT
VALUES OF THE PARAMETERS -A- AND -N- WILL BE USED. THE
JOBCARD PARAMETERS PASSED AS OPTIONS ON THE -JOBCARD-
OPERATOR MAY BE ANY OPTIONS FOR A STANDARD EMACEE JOBCARD.
NO VALIDATION IS DONE BY THE -JOBCA- OPERATOR.

IF THE FIRST CHARACTERS SPECIFIED AFTER THE COMMAND NAME
ARE *G=TEXT* THE TERMINAL NUMBER AND NAME AND ACCOUNT NUMBER
WILL BE OMITTED. THE STRING *TEXT* WILL BE THE ONLY CONTENTS
OF THE FIRST LINE OF THE JOBCARD FILE.

LABEL - DEFINE A MACRO TRANSFER LABEL

LABXXX
        DEFINES THE LABEL *LABXXX*

LOG - LOGOFF PROCESSOR

PARAMETERS - REQUEST USER PARAMETER ENTRY

PAR[AMETERS,PARNAME,[Q PROMPT/REPROMPT Q],[SUPPRESS]

REQUEST A LINE OF INPUT FROM THE TERMINAL AND BREAK IT DOWN
INTO PARAMETERS. *PARMNAME* IS THE NUMBER OF PARAMETERS THAT
WILL BE ACCEPTED FROM THE LINE. ALL PARAMETERS DESIGNATED
WILL BE MADE NULL BEFORE ENTRY. IF MORE PARAMETERS ARE
ENTERED, THEY WILL BE IGNORED.
PARNAME MAY BE EITHER: (DEFAULT IS P10)

1. *NN*: A NUMBER BETWEEN 1 AND 30, TO STORE THE
         RESULTS IN THE FIRST *NN* USER (P)
         PARAMETERS.
2. *PNN*: WHERE *NN* IS A NUMBER BETWEEN 1 AND 30, TO
         STORE THE RESULTS IN THE FIRST *NN* *P*
         PARAMETERS ALSO.
3. *GNN*: WHERE *NN* IS A NUMBER BETWEEN 1 AND 30, TO
         STORE THE RESULTS IN THE FIRST *NN*
         GLOBAL (G) PARAMETERS.

IF A *PROMPT/REPROMPT* CHARACTER STRING IS ENTERED, THE
FIRST TEN CHARACTERS WILL BE USED TO PROMPT/REPROMPT THE USER.
IF THE *SUPPRESS* PARAMETER IS NON-NULL, THE CARRIAGE
RETURN/LINE FEED WHICH NORMALLY PRECEEDS THE INITIAL PROMPT
WILL BE SUPPRESSED. REPROMPTS WILL ALWAYS BE PREFEEDED BY A
CARRIAGE RETURN/LINE FEED.

ERROR MESSAGES:

        PAR - ILLEGAL ARGUMENT - XX
              THE PARAMETER, -XX- MAY NOT BE CHANGED.

QACCESS - ACCESS A JOB FROM THE BATCH SYSTEM

QAC[CESS],JOBNAME[,OPTIONS]

WHERE:

        JOBNAME = THE NAME OF THE DESIRED JOB OUTPUT. THIS
              NAME MUST MATCH THE NAME USED TO *SEND* THE
              JOB TO THE BATCH SYSTEM AND IS THE NAME
              RETURNED AS THE RESULT OF A *STATUS* COMMAND.

        OPTIONS = AN ARBITRARY NUMBER OF FORMAT CONTROL
              OPTIONS. FROM 0 TO 29 OPTIONS MAY BE
              SPECIFIED AND MAY BE IN ANY ORDER. OPTIONS
              SHOULD BE SEPARATED BY SEPARATOR CHARACTERS.

AVAILABLE OPTIONS: (IF STATED, MEANS...)

        SA - SAVE THE BATCH JOB OUTPUT FILE. NORMALLY THIS
              FILE IS RELEASED AFTER BEING ACCESSED.

        NO - SUPPRESS THE INITIAL DAYFILE PRINTOUT.

        NW - DO NOT WAIT IF THE FILE IS NOT IN THE PRINT
              QUEUE.

        PR - ACCESS PRINT (OUTPUT) QUEUE FILE.

PH - ACCESS PUNCH (HOLLERITH) QUEUE FILE.

PB - ACCESS PUNCH (BINARY) QUEUE FILE.

P8 - ACCESS PUNCH (80 COLUMN) QUEUE FILE.

TR - TRUNCATE ALL LINES RETRIEVED TO A MAXIMUM OF
       72 CHARACTERS.

FO - PRESERVE THE PRINTER FORMAT CONTROL CHARACTER ON
       EACH LINE OF OUTPUT DATA.

RS - SUPPRESS PRINTING OF *EOR AND *EOF MESSAGES AT
       END OF RECORD AND END OF FILE POINTS IN THE
       OUTPUT FILE. THE END OF RECORD AND END OF
       FILE MARKS ARE LIKEWISE NOT TRANSFERRED TO THE
       LOCAL FILE.

LLNNN - START LINE RETRIEVAL AT LINE NNN.

HLNNN - STOP LINE RETRIEVAL AT LINE NNN.

LRNNN - START LINE RETRIEVAL AT RECORD NNN.
         THE FIRST RECORD IS NUMBERED 00.
         BOTH END OF RECORD AND END OF FILES ARE
         COUNTED DURING THE SKIPPING PROCESS.

HRNNN - STOP LINE RETRIEVAL AT RECORD NNN.

LFNNN - START LINE RETRIEVAL AT FILE NNN.
         THE FIRST FILE IS NUMBERED 00.
         ONLY END OF FILES ARE COUNTED DURING THE
         SKIPPING PROCESS.

HFNNN - STOP LINE RETRIEVAL AT FILE NNN.

LCNNN - NNN IS THE LEFTMOST COLUMN OF EACH LINE IMAGE
         IN THE BATCH JOB OUTPUT FILE TO BE SENT TO THE
         TERMINAL DATA FILE.
         COLUMN NNN WILL BE RELOCATED TO THE COLUMN 0
         POSITION AND WILL BE SUBJECT TO FORMAT
         CHARACTER SUPPRESSION UNLESS SUPPRESSION IS
         NEGATED BY THE ≠FO≠ OPTION.

RCNNN - NNN IS THE RIGHTMOST COLUMN TO BE SENT.

LMNNN - NNN IS THE LEFT MARGIN POSITION FOR THE
         OUTPUT LINE IMAGE AT THE TERMINAL.

RMNNN - NNN IS THE RIGHT MARGIN. CHARACTERS IN THE
         ORIGINAL LINE IMAGE THAT WOULD HAVE PRINTED TO
         THE RIGHT OF NNN WILL NOT BE RETRIEVED FROM
         THE BATCH OUTPUT FILE.

ANY PARAMETER OF THE FORM *XXNNN* MAY BE ENTERED AS:
XX=NNN.

DEFAULTS:

        SA - RELEASE THE OUTPUT FILE AFTER RETRIEVAL.
        NO - RETURN DAYFILE DATA BEFORE AND AFTER THE OUTPUT
                DATA FROM THE BATCH JOB.
        NW - WAIT FOR THE JOB TO COMPLETE, IF NOT ALREADY IN
                OUTPUT QUEUE.
        PR - ACCESS PRINT (OUTPUT) QUEUE FILE.
        TR - NOT SET - RETURN THE FULL LINE IMAGE.
        FO - REPLACE FORMAT CHARACTERS WITH A BLANK.
        RS - PRINT ▸EOR AND ▸EOF MESSAGES.
        LLNNN - NNN = 000
        HLNNN - NNN = 262,143
        LRNNN - NNN = 000
        HRNNN - NNN = 262,143
        LFNNN - NNN = 000
        HFNNN - NNN = 262,143
        LCNNN - NNN = 000
        RCNNN - NNN = 140
        LMNNN - NNN = 000
        RMNNN - NNN = 070

ERROR MESSAGES:

        QAC - ILLEGAL COMMAND FROM BATCH
                BATCH MODE *PIRATE* IS NOT ALLOWED TO
                SEND OR ACCESS JOBS FROM THE BATCH SYSTEM.

        QAC - INVALID JOB NAME - (NAME)
                THE SUPPLIED JOBNAME CONTAINED SPECIAL
                CHARACTERS WHICH ARE NOT LEGAL IN A JOB
                NAME IN THE MACE OPERATING SYSTEM.

        QAC - NULL JOB NAME
                NO JOBNAME WAS SPECIFIED.

        QAC - (IIINAME) IS A LOCAL FILE
                THE FILE NAME FORMED BY CONCATENATING THE
                3 CHARACTER USER ID WITH THE SUPPLIED
                JOB NAME ALREADY EXISTED AS A LOCAL FILE.

        QAC - INVALID OPTION - XX
                THE OPTION, -XX-, IS NOT A VALID OPTION
                FOR THE *QACCESS* OPERATOR.

NOTES:

- AFTER *QACCESS* HAS BEEN TYPED THE TERMINAL WILL BE
  INTERLOCKED UNTIL THE DATA RETRIEVAL OPERATION HAS
  BEEN COMPLETED.
  FOR LARGE FILES THIS MAY BE SEVERAL MINUTES.

- CTRL-B MAY BE STRUCK AT ANY TIME DURING *QACCESS*.
  IF THE RESPONSE IS NOT IMMEDIATE THE FILE IS IN THE
  PROCESS OF BEING COPIED TO A LOCAL DATA FILE AND
  CANNOT BE INTERUPTED.

- AFTER STRIKING CTRL-B, A *FILES* OPERATOR SHOULD BE
  USED TO CHECK FOR COMPLETION OF THE ABORTED ACCESS
  AND CONSEQUENT ENTRY OF THE DATA FILE NAME INTO THE
  USERS FILE CATALOG.

- AVAILABILITY OF OUTPUT FILES MAY BE DETERMINED BY
  TYPING *STATUS*. ONLY FILES IN THE OUTPUT QUEUE
  MAY BE RETRIEVED WITHOUT SUBSTANTIAL INTERLOCK
  DELAY TIMES.

- THE *NW* OPTION MAY BE USED IN A MACRO TO PROVIDE
  CONDITIONAL ACCESS OF A JOB. THE *CHECK* OPERATOR
  CAN BE USED AFTER THE *QACCESS* OPERATOR TO DETERMINE
  IF THE JOB WAS ACCESSED OR NOT. THE MACRO CAN THEN
  ASK WHETHER THE USER WISHES TO TRY AGAIN OR ATTEMPT
  THE ACCESS LATER.

QADD - ADD PARAMETER VALUES

QAD[D],PARM1[,PARM2][,8][,R]
          WHERE PARM2 WILL DEFAULT TO THE VALUE *1* IF OMITTED,
          IF *8* IS THE THIRD PARAMETER, OCTAL BASE ARITHMETIC
                              WILL BE USED,
          AND, IF *R* IS THE FOURTH PARAMETER, THE RESULT WILL
                    BE LEFT RIGHT JUSTIFIED IN THE PARAMETER.

ERROR MESSAGES:

          QAD - ILLEGAL RESULT PARAMETER - X
                    THE PARAMETER X MAY NOT BE CHANGED.

QAPPEND - APPEND ONE FILE TO ANOTHER

QAP[PEND],FROM,TO[,OPTIONS]

          WHERE:

                        -FROM- IS THE FILE TO BE COPIED FROM.
                        -TO- IS THE FILE TO BE COPIED TO. IF -TO-
                              EXISTS, IT WILL BE POSITIONED BEFORE ITS
                              END-OF-INFORMATION BEFORE THE -FROM-
                              FILE IS APPENDED TO IT.
                        -OPTIONS- MAY BE ANY -QACCESS- OPTION, AND

                        -IN=NNN- SET THE INCREMENT BETWEEN LINES
                              TO -NNN-. IF NOT SPECIFIED, THE INCREMENT
                              WILL BE TAKEN FROM THE DIFFERENCE
                              BETWEEN EACH SUCCESSIVE PAIR OF LINES
                              ON THE FILE -FROM-.

                        ALL FILE POSITIONING AND REFORMATTING
                              OPTIONS ARE VALID, AND APPLY TO THE FILE
                              -FROM-.

     ERROR MESSAGES:

          QAP - NO DESTINATION FILE
                        THE DESTINATION FILE NAME WAS MISSING OR
                        NULL.

          QAP - NULL SOURCE FILE NAME
                        THE SOURCE FILE NAME WAS NULL.

          QAP - INVALID OPTION -XX
                        THE OPTION, -XX-, IS NOT A VALID FILE
                        REFORMATTING OPTION RECOGNIZED BY *QAPPEND*

     QASSIGN - ASSIGN VALUE TO PARAMETERS

     QAS[SIGN],PARM-NAME,VALUE

     ASSIGN THE STRING *VALUE* TO THE PARAMETER *PARM-NAME*.

     PARAMETER NAMES WHICH CAN BE SET USING THE *QASSIGN* OPERATOR:

     P0 - P29 - MACRO ARGUMENT PARAMETERS.
     G0 - G29 - GLOBAL PARAMETERS.
     E   - PARAMETER ESCAPE CHARACTER (^)
     Q   - QUOTE CHARACTER (≠)
     W[0]   - WIDTH OF PARAMETER NAMES CHECKED BY THE COMPARISON
                        OPERATORS (36). IF THE VALUE IS SET TO
                        ZERO OR GREATER THAN 42, THE ENTIRE
                        PARAMETER VALUE WILL BE SCANNED.
     W1   - BIT WIDTH OF FILE NAMES USED AS COMMANDS (30). IF
                        SET TO ZERO OR GREATER THAN 42, THE ENTIRE
                        NAME WILL BE USED.
     X   - EDIT CONTROL CHARACTER (↦).

Z0 - Z29 - SYSTEM SCRATCH PARAMETERS

IF EDIT, QUOTE, OR ESCAPE CHARACTER IS ASSIGNED A NULL VALUE,
ITS DEFAULT WILL BE ASSUMED.

ERROR MESSAGES:

          QAS - ILLEGAL ARGUMENT - XX
                    THE PARAMETER, -XX-, MAY NOT BE CHANGED.

QCLOSE - CLOSE ACTIVE LOCAL FILES

QCL[OSE],FILE1[,FILE2.......FILEN]

REMOVES THE FILE ENTRIES FROM THE USER#S LOCAL FILE CATALOG,
BUT DOES NOT RETURN THE DISK SPACE TO THE SYSTEM.
INSURES THAT THE FILE IS REWOUND.

THIS FUNCTION MUST BE USED BEFORE EXECUTING ANOTHER EMESAE
PROGRAM. ALL FILES WHICH ARE TO BE USED BY THE OTHER EMESAE
PROGRAM MUST BE CLOSED BEFORE THE -QRUN- REQUEST.

     IF THE FILE IS THE CURRENT MACRO INPUT FILE, CONTROL WILL
RETURN TO COMMAND MODE AFTER THIS OPERATOR.

QCONVERT - CONVERT PARAMETER VALUE

QCO[NVERT],NUMBER,[IN-TYPE],[OUT-TYPE],PARM-NAME

          WHERE: NUMBER IS THE NUMERIC CHARACTER STRING TO
                           BE CONVERTED.
                        IN-TYPE IS THE MODE OF THE INPUT CHARACTER
                           STRING,   B - OCTAL, OR
                                     D - DECIMAL, OR
                                     A - ALPHANUMERIC.
                        OUT-TYPE IS THE MODE OF THE OUTPUT
                                     B - OCTAL,
                                     D - DECIMAL, OR
                                     A - ALPHANUMERIC.
                        PARM-NAME IS THE NAME OF THE PARAMETER
                           WHICH WILL RECEIVE THE RESULT.
          DEFAULTS: IN-TYPE = B (OCTAL)
                        OUT-TYPE = D (DECIMAL)

ERROR MESSAGES:

QCO - ILLEGAL RESULT PARAMETER - XX
            THE PARAMETER -XX- MAY NOT BE CHANGED.

QCO - NULL RESULT PARAMETER NAME
            THE RESULT PARAMETER NAME MAY NOT BE NULL.

QCO - INVALID NUMBER (NNNNN)
            THE NUMBER SUPPLIED COULD NOT BE CONVERTED
            TO BINARY UNDER THE CONVERSION MODE
            SPECIFIED.

QCREATE - CREATE A NEW LOCAL FILE

QCR[EATE],LFN[,OPTIONS]

        WHERE *OPTIONS* MAY BE ANY OF THE FOLLOWING:
                TR = TRUNCATE THE LINES TO A MAXIMUM OF
                    72 CHARACTERS.
                LCNNN = DO NOT USE THE FIRST *NNN*
                    CHARACTERS OF EACH LINE ENTERED.
                RCNNN = TRUNCATE EACH LINE AT COLUMN
                    NNN.
                LMNNN = INSERT *NNN* LEADING BLANKS AT
                    THE BEGINNING OF EACH LINE ENTERED.

ERRORS:
        QCR - INVALID OPTION - XX
                INVALID OPTION SPECIFIED IN QCREATE CALL

QDELETE - DELETE LOCAL FILES

QDE[LETE],FILE1[,FILE2][, ...][,FILEN]

DELETES ALL DISK SPACE OCCUPIED BY A LOCAL FILE. PERMANENT
AND COMMON FILES ARE RETURNED TO THE SYSTEM AND ARE NO LONGER
ACCESSABLE.
        1. FILE NAMES > 9999999 WILL NOT BE DELETED.
        2. IF THE CURRENT MACRO INPUT FILE IS TO BE DELETED,
           CONTROL WILL RETURN TO THE COMMAND MODE.
        3. IF ANY OF THE FILES HAS BEEN DECLARED AS A MACRO
           LIBRARY FILE, THE MACRO LIBRARY DIRECTORY ENTRIES
           FOR ALL RECORDS IN THE FILE WILL BE DELETED.
        4. RESERVED FILE NAMES WILL NOT BE DELETED.

QDISPLAY - DISPLAY A LOCAL FILE

QDI[SPLAY],FILE[,LINE1][,LINE2][,OPTIONS]

WHERE:

LINE1 AND *LINE2*, IF SPECIFIED, MAY BE EITHER
INTEGER OR DECIMAL NUMERIC LINE NUMBERS, OR A QUOTED
CHARACTER STRING IDENTIFING A LINE. IF EITHER
CHARACTER STRING IS ALL ALPHANUMERIC AND STARTS IN
COLUMN 1 OF THE LINE, IT NEED NOT BE ENCLOSED IN
QUOTES. IF THE COLUMN THAT THE CHARACTER STRING
STARTS IN IS KNOWN, IT MAY BE SPECIFIED IMMEDIATELY
FOLLOWING THE TERMINATING QUOTE OF THE STRING. IF NO
COLUMN NUMBER IS SPECIFIED FOR A QUOTED STRING, THE
ENTIRE LINE WILL BE SEARCHED FOR THE CHARACTER STRING.

OPTIONS MAY BE ANY OF THE FILE REFORMATTING OPTIONS
EXCEPT, -LL-, AND -HL-. IN ADDITION, THE FOLLOWING
OPTIONS ARE RECOGNIZED BY -QDISPLAY-.
SUP - TO SUPPRESS LINE NUMBER PRINTOUT, AND
PAR,N - TO CRACK THE LINE INTO PARAMETERS AS IF IT
          HAD BEEN ENTERED WITH THE *PAR* OPERATOR.

ERROR MESSAGES:

QDI - INVALID OPTION - XX
      THE OPTION, -XX-, HAS NO MEANING FOR THE
      QDISPLAY OPERATOR.

QDVIDE - DIVIDE PARAMETER VALUES

QDV[IDE],PARM1[,PARM2][,8][,R]
ARGUMENTS ARE IDENTICAL TO *ADD*.

QEDIT - EDIT A LOCAL FILE

QED[IT],FILE

COMMAND SYNTAX:

OPTIONAL PARTS OF THE EDITOR DIRECTIVES ARE ENCLOSED IN SQUARE
BRACKETS -[ ]-.

ONLY THE FIRST CHARACTER OF ALL EDIT COMMANDS EXCEPT -EOR-,
-EOF-, AND -EOI- IS SIGNIFICANT. ANY ALPHANUMERIC CHARACTERS

FOLLOWING THE FIRST WILL BE IGNORED.

LN=(LINE TEXT)(CR) ENTER OR REPLACE LINE NUMBER *LN*
LN,INCR=(LINE TEXT)(CR)   ENTER OR REPLACE LINE NUMBER
                    LN AND PROMPT WITH INCREMENTS OF *INCR*.

D,LN(CR)   DELETES LINE NUMBER *LN*
D,LN1,LN2(CR)   DELETES LINE NUMBER *LN1* THROUGH *LN2*
LN1[,LN2]D(CR)   (DITTO)

R,LN(CR)   REPLACES LINE NUMBER *LN*
[LN]R(CR)   (DITTO)

A(CR)   ADDS LINES OF TEXT AT THE END OF THE FILE
A,LN(CR)   ADDS LINES OF TEXT AFTER *LN*
A,LN,INCR(CR)   ADDS LINES OF TEXT STARTING AT *LN* WITH
                    AN INCREMENT OF *INCR*
[LN[,INCR]]A(CR)   (DITTO)

I,LN(CR)   INSERTS LINES OF TEXT STARTING AT *LN* WITH
                    INCREMENT OF 0.01
I,LN,INCR(CR)   INSERTS LINES OF TEXT STARTING AT *LN*
                    WITH INCREMENT *INCR*.
[LN[,INCR]]I(CR)   (DITTO)

EOR(CR)   WRITES AN END OF RECORD ON THE FILE
EOF(CR)   WRITES AN END OF FILE ON THE FILE
EOI(CR)   TERMINATES THE EDITING SESSION

S(CR)   TERMINATES THE EDITING SESSION.

[PRINT](CR)   PRINTS THE CURRENT LINE.
P[RINT],LN(CR)   PRINTS LINE -LN-.
P[RINT],LN,LN2(CR) PRINTS LINE -LN- THROUGH LINE -LN2-.
[LN[,LN2]][PRINT](CR)   (DITTO)

NOTE: THE CHARACTER Q IN THE FOLLOWING COMMANDS REPRESENTS
        THE CURRENT QUOTE CHARACTER. IF THE DESIRED STRING
        DOES NOT CONTAIN ANY SEPARATOR CHARACTERS AND STARTS
        IN COLUMN 1, THE QUOTES MAY BE OMITTED.

[LN]C[HANGE],Q STRING1 Q[COL]=Q STRING2 Q(CR)
        CHANGES THE OCCURANCE OF -STRING1- IN COLUMN -COL- TO
        -STRING2-. IF NO COLUMN NUMBER, -COL-, IS SPECIFIED,
        THE FIRST OCCURANCE OF -STRING1- IN THE LINE WILL BE
        CHANGED.

[LN[,LN2]]F[IND],Q STRING Q[COL](CR)
        FINDS THE FIRST OCCURANCE OF STRING -STRING- STARTING
        IN COLUMN -COL- IN THE FILE BETWEEN LINE -LN- AND
        LINE -LN2-. IF -LN2- IS NOT SPECIFIED, THE END OF THE
        FILE WILL BE ASSUMED. IF -LN- IS NOT SPECIFIED, THE
        LINE AFTER THE MOST RECENTLY USED LINE WILL BE USED.
        IF -COL- IS NOT SPECIFIED, ALL COLUMNS OF THE LINES

WILL BE SEARCHED FOR THE STRING.

THE QUOTE CHARACTER MAY BE CHANGED DURING THE EXECUTION OF
THE EDITOR WITH THE FOLLOWING COMMAND.

Q(UOTE)=C(CR)

THE CHARACTER -C- WILL BE TAKEN AS THE QUOTE CHARACTER FOR
THE REMAINDER OF THE EDITOR SESSION. THE ORIGINAL QUOTE
CHARACTER WILL BE RESTORED UPON EXITING THE EDITOR.

NOTE:

ANY LINE WHICH BEGINS WITH A LINE NUMBER PROMPT MUST HAVE THE
EDIT CONTROL CHARACTER AS THE FIRST COLUMN, FOLLOWED BY THE
EDIT COMMAND.

ERROR MESSAGES:

        ILLEGAL CURRENT COMMAND FILE EDIT
                THE CURRENT COMMAND MACRO FILE MAY NOT
                BE EDITED WHILE IT IS BEING USED FOR MACRO
                COMMAND INPUT.

        QED - (NAME) DOES NOT EXIST
                THE FILE TO BE EDITED MUST BE EITHER A
                LOCAL FILE OR A LIBRARY MACRO RECORD
                NAME.

        ILLEGAL SYNTAX
                THE LAST COMMAND WAS NOT RECOGNIZED BY THE
                EDITOR.

        NO SUCH LINE
                THE EDITOR FAILED TO FIND THE REQUESTED
                LINE.

        NO SUCH SUBSTRING
                THE CHANGE FUNCTION COULD NOT LOCATE
                STRING1.

QEN - SET ENVIROMENT VARIABLES FOR TERMINAL

QEN [P1][,P2]...[,PN]

WHERE: PN ARE EQUIVALENCED PARAMETERS OF ONE OF THE FOLLOWING
       FORMS:
1. PARAM = VALUE   ASSIGN THE VALUE TO THE NAMED PARAMETER
2. PARAM   RESET THE PARAM TO THE DEFAULT VALUE

THE LEGAL PARAMS AND VALUES ARE:
        (FOR THE FOLLOWING, NN REPRESENTS A DECIMAL NUMBER)

WIDTH=NN   PAGE WIDTH IN COLUMNS (0≤WI≤143)
DEPTH=NN   PAGE DEPTH FOR CRT DEVICES
EJECT=NN   EJECT COUNT FOR TTY DEVICES
                (NUMBER OF LINES TO SPACE AFTER -DEPTH- LINES.)
DUPLEX=FULL/HALF   SET TRANSMISSION MODE TO FULL (HALF) DUPLEX

        (FOR THE FOLLOWING, NN REPRESENTS AN OCTAL NUMBER)
EOL=NN / ON / OFF SET END OF LINE CHARACTER
RUBOUT=NN / ON / OFF   SET RUBOUT CHARACTER
BKSP=NN / ON / OFF SET BACKSPACE CHARACTER

CRLF=ON / OFF   DISABLE AUTO CR/LF INSERTION
PR1=ON / OFF   PROCSY1 COMPATIBILITY MODE.
SUSPEND=ON / OFF   ENABLE (DISABLE) SUSPEND
TAPE=ON / OFF   ENABLE (DISABLE) PAPER TAPE MODE

EXAMPLE:
    QEN BKSP=10,EOL=OFF
NOTES:
        1. IF THE SAME PARAMETER NAME IS USED MORE THAN ONCE
        IN THE SAME COMMAND LINE -- ONLY THE LAST OCCURRENCE OF
        OF THE PARAMETER WILL BE CHANGED. FOR EXAMPLE,
                QEN BKSP=10,BKSP=OFF
        WILL MERELY DISABLE THE USE OF BACKSPACE. IT WILL NOT
        CHANGE THE VALUE OF THE BACKSPACE CHARACTER TO 10.
        2. THE WORDS *ON* AND *ENABLE* ARE SYNONYMOUS AS ARE
        OFF AND *DISABLE*.
        3. NOTE THAT OCTAL VALUES, WHERE USED, ARE NOT
        SUFFIXED BY A *B*.

QERROR - SET OPERATOR ERROR RESPONSE

QER[ROR],X,Y,Z
        WHERE: X = THE COMMAND TO BE EXECUTED AFTER A
                           COMMAND ERROR.
                       Y = IF PRESENT, WILL FORCE THE EXECUTION OF
                           THE NEXT LINE IN THE CURRENT MACRO
                           AFTER THE FIRST COMMAND ERROR.
                       Z = IF PRESENT, WILL FORCE A SKIP TO THE
                           LINE *X* IN THE CURRENT MACRO, WHERE
                           X IS A LABEL OR INTEGER LINE NUMBER.

QEXCHANGE - EXCHANGE PARAMETER ENTRIES

QEX[CHANGE],PARM1[,PARM2]

EXCHANGE THE VALUES OF *PARM1* AND *PARM2*.
        IF *PARM2* IS NOT SPECIFIED, *PARM1* WILL BE CLEARED.
SEE THE *QASSIGN* OPERATOR FOR A LIST OF PARAMETERS WHICH MAY
        BE USED AS -PARM1- AND -PARM2-.

ERROR MESSAGES:

        QEX - INSUFFICIENT NUMBER OF ARGUMENTS
                AT LEAST ONE ARGUMENT MUST BE SUPPLIED.

        QEX - ILLEGAL ARGUMENT -XX
                THE PARAMETER, -XX-, MAY NOT BE CHANGED.

QFILES - DISPLAY ACTIVE LOCAL FILE NAMES

QFI[LES][,FILE-NAME]

THE NAMES OF THE ACTIVE FILES WILL BE WRITTEN ON THE FILE,
FILE-NAME, IF PRESENT. OTHERWISE, THEY WILL BE WRITTEN
TO THE TERMINAL.

THE FORM OF THE OUTPUT IS:

FNAME   MODE   LINE NUMBER

        WHERE:
                        FNAME IS THE NAME OF THE FILE.
                        MODE IS *I* FOR AN INTERNAL (EDITOR) FILE
                                OR *E* FOR AN EXTERNAL (DISK IMAGE)
                                MODE FILE.
                        LINE NUMBER IS THE LINE NUMBER OF THE
                                CURRENT FILE POSITION.

ACTIVE FILE STACK WILL BE LISTED BY THE *QFI* OPERATOR.
THESE FILES WILL BE LISTED IN THE ORDER OF MOST RECENT USE.
FOR A COMPLETE LIST OF LOCAL FILES USE THE PROGRAM EFTLETBLE.

QFLUSH - FLUSH OUTPUT TERMINAL BUFFER

QFL[USH][,WAIT]

FLUSH THE OUTPUT BUFFER TO THE TERMINAL.

IF THE WAIT PARAMETER IS NON-NULL, WAIT UNTIL TERMINAL
OUTPUT IS COMPLETE BEFORE CONTINUING.

QHOLD - INACTIVATE TERMINAL

QHO[LD]

QINSERT - INSERT LINES IN A FILE

QIN[SERT] Q TEXT STRING Q[,FILE][,LINE]

WHERE: *Q* IS THE CURRENT QUOTE CHARACTER.
       TEXT STRING IS THE TEXT LINE TO BE INSERTED
                 (MUST NOT CONTAIN THE CURRENT QUOTE
                 CHARACTER)
       FILE IS THE FILE THAT THE LINE SHOULD BE INSERTED
                 INTO. DEFAULTS TO *JOBCA*.
       LINE IS THE LINE NUMBER TO BE USED. DEFAULTS TO THE
                 NEXT INTEGRAL LINE NUMBER AFTER THE END OF
                 THE FILE.

QIQUIRE - INQUIRE ABOUT BATCH SYSTEM JOBS

QIQ[UIRE][,FILENAME][,JOBNAME1][...][,JOBNAMEN]

WRITE THE STATUS OF THE REQUESTED JOBS ON *FILENAME*.
       1. IF NO JOBNAMES ARE SUPPLIED, ALL JOBS FROM THIS
          TERMINAL WILL BE FOUND.
       2. IF NO FILENAME IS SUPPLIED, THE JOB STATUS WILL
          BE WRITTEN DIRECTLY TO THE TERMINAL.

QLIBRARY - DECLARE A MACRO LIBRARY FILE

QLI[BRARY],FILE1[,FILE2][......][,FILEN]

DECLARES FILE1,FILE2,......FILEN AS MACRO LIBRARY FILES WITH
A LIBEDIT DIRECTORY AT THE END.
ALL RECORDS OF TYPE *TEXT* OR *OPL* ON THE LIBRARY FILES MAY

BE USED AS MACRO NAMES.
THE FILES ARE PROCESSED IN A LEFT TO RIGHT ORDER. IF AN
ERROR IS DETECTED WHILE PROCESSING ANY OF THE FILES, THE
REMAINING FILES WILL NOT BE PROCESSED.

ERROR MESSAGES:

              QLI - (NAME) DOES NOT EXIST
                        THE FILE *NAME* IS NOT A LOCAL FILE.

              QLI - NO LIBRARY DIRECTORY FOUND - (NAME)
                        THE FILE *NAME* DID NOT HAVE A *LIBEDIT*
                        DIRECTORY AS ITS LAST RECORD.

      QLL - LIBRARY LIST

      QLL,[FILENAME][,LIBRARY1]...[,LIBRARYN]

      LISTS THE DIRECTORIES FOR THE SPECIFIED LOCAL LIBRARIES
      ONTO FILE *FILENAME*. IF *FILENAME* IS NULL, THE DIRECTORIES
      WILL BE LISTED AT THE TERMINAL. IF NO LIBRARY NAMES ARE
      SPECIFIED, THEN ALL DIRECTORIES WILL BE LISTED.

      QMULTIPLY - MULTIPLY PARAMETER VALUES.

      QMU[LTIPLY],PARM1[,PARM2][,8][,R]
      ARGUMENTS ARE IDENTICAL TO *ADD*.

      QPAUSE - INACTIVATE TERMINAL FOR A PREDETERMINED TIME

      QPA[USE],TIME

            - HAS NO EFFECT IN BATCH MODE
            - TIME DEFAULTS TO 300 SECONDS IF LARGER VALUE GIVEN

      QRENAME - RENAME A LOCAL FILE

      QRE[NAME],OLDNAME,NEWNAME

1. IF THE OLD FILE HAS BEEN DECLARED AS A MACRO LIBRARY
   FILE, THE MACRO LIBRARY DIRECTORY ENTRIES FOR ALL
   RECORDS ON THE FILE WILL BE DELETED.
2. FILE NAMES > 9999999 WILL NOT BE RENAMED.
3. LOCKED (READ ONLY) FILES WILL NOT BE RENAMED.
4. IF THE FILE TO BE RENAMED IS THE CURRENT MACRO INPUT
   FILE, THE MACRO INPUT WILL CONTINUE FROM THE FILE
   WITH THE NEW NAME.
5. FILES WILL NOT BE GIVEN NAMES > 9999999.
6. RESERVED FILES WILL NOT BE RENAMED.

ERROR MESSAGES:

QRE - FILE [(NAME)] DOES NOT EXIST
        THE OLD FILE COULD NOT BE LOCATED.

QRE - (NAME) ALREADY EXISTS
        THE NEW FILE NAME ALREADY EXISTS AS A LOCAL
        FILE.

QRE - NULL OLD FILE NAME
        THE OLD FILE NAME MUST BE NON-NULL.

QRE - LOCKED FILE [(NAME)] NOT RENAMED
        THE FILE *NAME* WAS NOT RENAMED BECAUSE
        IT WAS WRITE PROTECTED (LOCKED).

QRE - NULL NEW FILE NAME
        NO NEW FILE NAME WAS SPECIFIED.

QRI   - READ FILE INTO INTERNAL FORMAT

QRI,FILE[,OPTIONS]

        CONVERTS A FILE FROM EXTERNAL MODE TO INTERNAL MODE FOR
        EDITING AND FASTER SCANNING FOR LINE NUMBERS.

        WHERE: -OPTIONS- MAY BE ANY OF THE FILE OR LINE
                 REFORMATTING OPTIONS.

    IF THE FILE IS THE CURRENT MACRO INPUT FILE, CONTROL WILL
RETURN TO COMMAND MODE AFTER THIS OPERATOR.

ERROR MESSAGES:

        QRI - (NAME) DOES NOT EXIST
                THE FILE *NAME* IS NOT A LOCAL FILE OR A
                LIBRARY MACRO RECORD NAME.

QRI - INVALID OPTION - XX
                    THE OPTION -XX- WAS NOT A VALID FILE
                    REFORMATTING OPTION RECOGNIZED BY *QRI*.

QRP - RESTORE SYSTEM PARAMETERS

QRP

RESTORES THE SYSTEM PARAMETERS -E-,-Q-,-W-,-W1-, AND -X-
TO THE VALUES USED BEFORE THE LAST USE OF THE *QS?* OPERATOR.

QRUN - RUN ANOTHER EMESAE PROGRAM

QRU[N],PNAME[,ARG1][,ARG2] ... [,ARGN]

WHERE:
        PNAME IS THE NAME OF A EMESAE PROGRAM TO BE EXECUTED.
        ARG1 - *ARGN* ARE THE OPTIONAL ARGUMENTS FOR THE
                    PROGRAM AS THEY WOULD OCCUR ON A STANDARD
                    MACE CONTROL CARD.
        A TERMINATOR CHARACTER IS NOT REQUIRED AFTER THE LAST
        ARGUMENT.

ERROR MESSAGES:

        QRU - ERROR DETECTED BY (PNAME)
                    THE EMESAE PROGRAM -PNAME- RETURNED WITH
                    AN ABORT RESPONSE.

QSEND - SEND A JOB TO THE BATCH SYSTEM

QSE[ND],JOBNAME[,DATA1][,DATA2] ... [DATAN]

        THE FILE *JOBCA* WILL BE USED AS THE CONTROL CARD
        RECORD FOR THE JOB.
        THE FIRST LINE OF THE FILE *JOBCA* MUST CONTAIN A VALID
        EMACEE JOBCARD. THE SECOND LINE MUST CONTAIN A
        PASSWORD CARD IF THE ACCOUNT NUMBER IS PROTECTED
        WITH A NON-NULL PASSWORD.

ERROR MESSAGES:

QSE - NO JOBNAME
          THE JOBNAME WAS NULL OR OMITTED.

QSE - ILLEGAL COMMAND FROM BATCH
          NO JOBS MAY BE SENT TO OR ACCESSED FROM
          THE BATCH SYSTEM FROM A BATCH PIRATE JOB.

QSE - NO JOBCARD FILE
          THERE WAS NO FILE CONTAINING THE JOBCARD
          AND CONTROL CARDS FOR THE JOB.

QSE - (NAME) IS A LOCAL FILE
          THE NAME FORMED BY CONCATENATING THE
          TERMINAL ID CHARACTERS TO THE NAME GIVEN
          AS THE JOBNAME ALREADY EXISTED AS A LOCAL
          FILE.

QSE - (NAME) IS NOT A LOCAL FILE
          THE FILE, *NAME*, WHICH WAS SPECIFIED AS A
          DATA FILE FOR THE JOB WAS NOT A LOCAL
          FILE.

QSE - NULL JOBCARD RECORD ON (NAME)
          THE FIRST LINE READ FROM THE FILE, *NAME*,
          WAS AN END OF RECORD.

QSE - EXCESSIVE JOBS IN BATCH SYSTEM
          NO MORE JOBS MAY BE SUBMITTED UNTIL THE
          NUMBER OF BATCH JOBS FROM THIS TERMINAL HAS
          DECREASED.

JOBCARD ERROR ...   XXXXXXXXXXXXXXXXXXXXXXX
          THE JOBCARD OF THE JOB WAS NOT LEGAL FOR
          THE REASON GIVEN. THE JOB WAS NOT SENT TO
          THE BATCH SYSTEM.

QSHOW - SHOW PARAMETER VALUES

QSH[OW],PARM1[-PARM2]

DISPLAYS THE VALUES OF ANY SUBSTITUTABLE PARAMETER OR RANGE
OF PARAMETERS.

     WHERE: PARM1 IS THE NAME OF THE FIRST PARAMETER
                VALUE TO BE DISPLAYED.
                PARM2, IF SPECIFIED, IS THE NAME OF THE
                LAST PARAMETER VALUE TO BE DISPLAYED.

ERROR MESSAGES:

                  QSH - ILLEGAL ARGUMENT RANGE, XX - YY
                        -XX- AND -YY- MUST BE FROM THE SAME
                        PARAMETER NAME.

QSP   - SAVE SYSTEM PARAMETERS

QSP[,FORCE]

SAVES THE SYSTEM PARAMETERS -E-, -Q-, -W-, -W1-, AND -X- AND
SETS THE CURRENT VALUES TO THE SYSTEM DEFAULTS.

IF A PARAMETER IS NOT SUPPLIED, THE PARAMETERS WILL ONLY BE
SAVED IF NO OTHER *QSP* OPERATOR HAS BEEN USED SINCE THE
LAST USE OF THE *QRP* OPERATOR.
IF AN ARGUMENT IS SUPPLIED, THE CURRENT PARAMETERS WILL BE
SAVED, DESTROYING ANY PREVIOUSLY SAVED VALUES.

QSTATISTICS - LIST RUN STATISTICS

QST[ATISTICS][,<OPT>]

          WHERE: <OPT> MAY BE ANY OF THE FOLLOWING
                      -ALL- LIST ALL STATISTICS
                      -COUNT- LIST OPERATOR AND COMMAND COUNTS
                      -CHARS- LIST CONTROL CHARACTERS
                      -STORAGE- LIST STORAGE MANAGEMENT COUNTS
                      -SYSTEM- LIST SYSTEM REQUEST COUNTS
                      -TIME- LIST CP TIME AND IO UNITS USED
-COUNT- IS ASSUMED IF NO ARGUMENTS ARE SUPPLIED.
ONLY THE FIRST TWO CHARACTERS ARE SIGNIFICANT.

UNRECOGNIZED OPTIONS WILL BE IGNORED WITHOUT COMMENT.

QSUBTRACT - SUBTRACT PARAMETER VALUES

QSU[BTRACT],PARM1[,PARM2][,8][,R]
ARGUMENTS ARE IDENTICAL TO *ADD*.

QTMESSAGE - SEND A MESSAGE TO THE USER TERMINAL

QTM Q MESSAGE Q

WHERE:
        Q IS THE CURRENT QUOTE CHARACTER.

QTRACE - SET MACRO COMMAND TRACE

QTR[ACE],[SW][,SUP]

        SW = ACTIVATION/DEACTIVATION FLAG
           -ON- TURNS TRACE ON
           -OFF- TURNS TRACE OFF.
           -(NULL)- TOGGLES TRACE FLAG OFF/ON/OFF
           UNRECOGNIZED ARGUMENTS ARE CONSIDERED AS -ON-.
        SUP = LINE NUMBER SUPPRESSION FLAG. IF -SUP- LINE
           NUMBERS WILL NOT BE INCLUDED ON TRACE OUTPUT. IF
           ANY OTHER NON-NULL ARGUMENT, IT WILL FORCE LINE
           NUMBERS TO BE INCLUDED ON TRACE OUTPUT.

QTYPE - SET TERMINAL TYPE CHARACTERISTICS

QTY[PE],[DEVICE],[DUPLEX],[WIDTH],[DEPTH],[EJECT]

        DEVICE = DEVICE CODE:
             K = KSR TELETYPE OR EQUIVALENT.
             T = ASR PAPER TAPE CAPABLE TELETYPE.
             I = IBM 1050 TERMINAL.
             E = EBCDIC TERMINAL.
             C = PTTC CORRESPONDENCE CODE TERMINAL.

        DUPLEX = DUPLEX MODE:
                 H = SET HALF DUPLEX.
                 F = SET FULL DUPLEX.

        WIDTH = PAGE WIDTH IN CHARACTERS. (0≤W<148)
        DEPTH = NUMBER OF LINES PER TEXT PAGE FOR CRT DEVICES.
        EJECT = NUMBER OF LINES TO SPACE AFTER -DEPTH- LINES
                   FOR TTY TYPE DEVICES.

ERROR MESSAGES:

        QTY - INVALID DUPLEX - DD
                  DUPLEX SPECIFIED NOT *HALF* OR *FULL*.

         QTY - INVALID PAGE WIDTH - WW
                    THE PAGE WIDTH SPECIFIED COULD NOT BE
                    CONVERTED TO A DECIMAL INTEGER.

         QTY - ILLEGAL PAGE DEPTH - DD
                    THE PAGE DEPTH VALUE SPECIFIED COULD NOT
                    BE CONVERTED TO A DECIMAL INTEGER.

         QTY - INVALID EJECT COUNT - EF
                    THE SPECIFIED EJECT LINE COUNT COULD NOT
                    BE CONVERTED TO A DECIMAL INTEGER.

IN THE FUTURE *QTY* WILL BE REPLACED BY THE MORE GENERALIZED

QEN. SEE DOCUMENTATION ON PREVIOUS PAGES.

QWRITE - WRITE A FILE IN EXTERNAL MODE

QWR[ITE],FILE[,OPTIONS]

FILE WILL BE WRITTEN IN EXTERNAL MODE WITH THE OPTIONS
SPECIFIED. IF NO OPTIONS ARE SPECIFIED AND THE FILE IS
ALREADY IN EXTERNAL MODE, NO ACTION WILL BE TAKEN.

OPTIONS MAY BE ANY FILE OR LINE REFORMATTING OPTION, AND
CO TO WRITE THE FILE IN COMPRESSED FORMAT.

   IF THE FILE IS THE CURRENT MACRO INPUT FILE, CONTROL WILL
RETURN TO COMMAND MODE AFTER THIS OPERATOR.

ERROR MESSAGES:

       QWR - MISSING FILE NAME
                    NO FILE NAME WAS SPECIFIED.

       QWR - (NAME) DOES NOT EXIST
                    NAME WAS NOT A LOCAL FILE.

       QWR - INVALID OPTION - XX
                    THE OPTION -XX- IS NOT A VALID FILE
                    REFORMATTING OPTION RECOGNIZED BY *QWRITE*.

       QWR - NO LINES WRITTEN FROM - (NAME)
                    THE FIRST LINE SPECIFIED OF THE FILE,
                    NAME, COULD NOT BE LOCATED.

QXCOMNT - SEND A MESSAGE TO USER TERMINAL WITH IMMEDIATE

                COMMAND ENTRY.

QXC[OMNT] Q MESSAGE Q [Q REPROMPT MESSAGE Q]

            WHERE: *Q* IS THE QUOTE CHARACTER.
            QXC WILL WAIT FOR USER INPUT OF A COMMAND.
            IF A *RUBOUT* CHARACTER IS ENTERED BY THE USER,
            THE FIRST TEN CHARACTERS OF THE REPROMPT MESSAGE WILL
            BE ISSUED.

QXMIT - TRANSMIT A JOB TO THE BATCH SYSTEM

QXM[IT],JOBNAME,CCFILE[,DATA1][,DATA2] ... [,DATAN]

            CCFILE MUST CONTAIN A VALID JOBCARD AS ITS FIRST CARD.

THE ERROR MESSAGES FOR *QXMIT* ARE IDENTICAL TO THE ERROR
MESSAGES FOR *QSEND* EXCEPT FOR THE FIRST 3 CHARACTERS WHICH
WILL BE -QXM- FOR ALL -QXMIT- ERRORS.

USERS - DISPLAY NUMBER OF ACTIVE USERS

USE[RS]