```
RRRRRRRRRRR      UUU          UUU  NNN         NNN     000000000     FFFFFFFFFFFFFFF   FFFFFFFFFFFFFFF
RRRRRRRRRRRR     UUU          UUU  NNN         NNN     000000000     FFFFFFFFFFFFFFF   FFFFFFFFFFFFFFF
RRRRRRRRRRRR     UUU          UUU  NNN         NNN     000000000     FFFFFFFFFFFFFFF   FFFFFFFFFFFFFFF
RRR          RRR UUU          UUU  NNN         NNN  000          000 FFF               FFF
RRR          RRR UUU          UUU  NNN         NNN  000          000 FFF               FFF
RRR          RRR UUU          UUU  NNN         NNN  000          000 FFF               FFF
RRR          RRR UUU          UUU  NNNNNN      NNN  000          000 FFF               FFF
RRR          RRR UUU          UUU  NNNNNN      NNN  000          000 FFF               FFF
RRR          RRR UUU          UUU  NNNNNN      NNN  000          000 FFF               FFF
RRRRRRRRRRR      UUU          UUU  NNN   NNN   NNN  000          000 FFFFFFFFFFF       FFFFFFFFFFF
RRRRRRRRRRRR     UUU          UUU  NNN   NNN   NNN  000          000 FFFFFFFFFFF       FFFFFFFFFFF
RRRRRRRRRRRR     UUU          UUU  NNN   NNN   NNN  000          000 FFFFFFFFFFF       FFFFFFFFFFF
RRR   RRR        UUU          UUU  NNN       NNNNNN 000          000 FFF               FFF
RRR   RRR        UUU          UUU  NNN       NNNNNN 000          000 FFF               FFF
RRR   RRR        UUU          UUU  NNN       NNNNNN 000          000 FFF               FFF
RRR      RRR     UUU          UUU  NNN          NNN 000          000 FFF               FFF
RRR      RRR     UUU          UUU  NNN          NNN 000          000 FFF               FFF
RRR      RRR     UUU          UUU  NNN          NNN 000          000 FFF               FFF
RRR         RRR  UUUUUUUUUUUUUUU  NNN          NNN    000000000     FFF               FFF
RRR         RRR  UUUUUUUUUUUUUUU  NNN          NNN    000000000     FFF               FFF
RRR         RRR  UUUUUUUUUUUUUUU  NNN          NNN    000000000     FFF               FFF
RRR         RRR  UUUUUUUUUUUUUUU  NNN          NNN    000000000     FFF               FFF
RRR         RRR  UUUUUUUUUUUUUUU  NNN          NNN    000000000     FFF               FFF
```

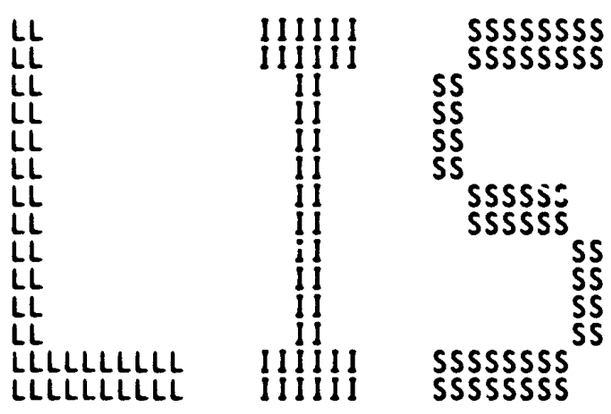
```
_$2

Sym
---
NDX
NDX
NUM
NUM
OPE
OUT
PAC
PAC
PAC
PAC
PAC
PAC
PAC
PAD
PAG
PAG
PAG
PAG
PAG
PAG
PAG
PER
PUT
RCO
RIN

RLI
RNO
RNO
RTY
SAV
STR
STR
STR
STR
STR
STR

STR
STR
STR
STR
STR
STR
STR
STR
STR
STR
STR
STR
STR
STR
STR
STR
```

FILEID**LOEMPH



```
;  1          0001  0 %TITLE 'Line output (emphasis -- bolding and underlining); overstriking'
;  2          0002  0 MODULE LOEMPH (
;  3          0003  0                 IDENT = 'V04-000'
;  4        P 0004  0 %BLISS32[,
;  5        P 0005  0         ADDRESSING_MODE(EXTERNAL=LONG_RELATIVE,NONEXTERNAL=LONG_RELATIVE)
;  6          0006  0         ]
;  7          0007  0                 ) =
;  8          0008  1 BEGIN
;  9          0009  1 !
; 10          0010  1 !*************************************************************************
; 11          0011  1 !*                                                                       *
; 12          0012  1 !*  COPYRIGHT (c) 1978, 1980, 1982, 1984 BY                              *
; 13          0013  1 !*  DIGITAL EQUIPMENT CORPORATION, MAYNARD, MASSACHUSETTS.               *
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; 22          0022  1 !*                                                                       *
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; 26          0026  1 !*                                                                       *
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; 28          0028  1 !*  SOFTWARE ON EQUIPMENT WHICH IS NOT SUPPLIED BY DIGITAL.               *
; 29          0029  1 !*                                                                       *
; 30          0030  1 !*                                                                       *
; 31          0031  1 !*************************************************************************
; 32          0032  1 !
; 33          0033  1 !++
; 34          0034  1 ! FACILITY:      DSR (Digital Standard RUNOFF) / DSRPLUS
; 35          0035  1 !
; 36          0036  1 ! ABSTRACT: Translation from intermediate format to final output.
; 37          0037  1 !
; 38          0038  1 !
; 39          0039  1 ! ENVIRONMENT: Transportable
; 40          0040  1 !
; 41          0041  1 ! AUTHOR: K. A. Dawson   CREATION DATE: December 1983
; 42          0042  1 !
```

```
;    44          0043  1 %SBTTL 'Revision History'
;    45          0044  1 !
;    46          0045  1 ! MODIFIED BY:
;    47          0046  1 !
;    48          0047  1 !       001     KAD00001        Keith Dawson    22-Mar-1983
;    49          0048  1 !
;    50          0049  1 !--
```

```
;    52          0050  1 %SBTTL 'Module Level Declarations'
;    53          0051  1
;    54          0052  1 !
;    55          0053  1 ! TABLE OF CONTENTS:
;    56          0054  1 !
;    57          0055  1
;    58          0056  1 REQUIRE 'REQ:RNODEF';                    ! RUNOFF variant definitions
;    59          0187  1
;    60          0188  1 FORWARD ROUTINE
;    61          0189  1     bsemph : NOVALUE,
;    62          0190  1     opemph  : NOVALUE
;    63          0191  1 %IF LN01 %THEN                ,
;    64          0192  1     lnemph : NOVALUE
;    65          0193  1 %FI
;    66        U 0194  1 %IF DSRPLUS %THEN           ,
;    67        U 0195  1     vtemph : NOVALUE
;    68          0196  1 %FI
;    69        U 0197  1 %IF FLIP %THEN              ,
;    70        U 0198  1     flemph : NOVALUE
;    71          0199  1 %FI
;    72          0200  1                           ;
;    73          0201  1
;    74          0202  1 !
;    75          0203  1 ! INCLUDE FILES:
;    76          0204  1 !
;    77          0205  1 LIBRARY 'NXPORT:XPORT';                 ! XPORT Library
;    78          0206  1
;    79        U 0207  1 %IF DSRPLUS %THEN
;    80        U 0208  1 LIBRARY 'REQ:DPLLIB';                 ! DSRPLUS BLISS Library
;    81          0209  1 %ELSE
;    82          0210  1 LIBRARY 'REQ:DSRLIB';                 ! DSR BLISS Library
;    83          0211  1 %FI
;    84          0212  1 !
;    85          0213  1 ! MACROS:
;    86          0214  1 !
;    87          0215  1 MACRO
;    88        M 0216  1     write_emphasis =
;    89        M 0217  1         BEGIN
;    90        M 0218  1         LOCAL
;    91        M 0219  1             ptr;
;    92        M 0220  1         ptr = .work_string[STR$A_POINTER];
;    93        M 0221  1         INCR i FROM 1 TO .work_string[STR$H_LENGTH] DO
;    94        M 0222  1             fs_wchar (fra, CH$RCHAR_A(ptr) );
;    95        M 0223  1         END
;    96          0224  1     %;
;    97          0225  1
;    98          0226  1 !
;    99          0227  1 ! EQUATED SYMBOLS:
;   100          0228  1 !
;   101          0229  1
;   102          0230  1 EXTERNAL LITERAL
;   103          0231  1     rintes : UNSIGNED (8);
;   104          0232  1
;   105          0233  1 LITERAL
;   106          0234  1     max_output_line_length = 250,       ! Reasonable maximum length for an output line.
;   107          0235  1     backspace = %O'10',
;   108          0236  1     escape = %O'33';
```

```
;  109          0237  1
;  110          0238  1 !
;  111          0239  1 ! OWN STORAGE:
;  112          0240  1 !
;  113          0241  1 OWN
;  114          0242  1     work_string . $STR_DESCRIPTOR ( CLASS=DYNAMIC, STRING=(0,0) );
;  115          0243  1
;  116          0244  1 !
;  117          0245  1 ! EXTERNAL REFERENCES:
;  118          0246  1 !
;  119          0247  1
;  120          0248  1 EXTERNAL
;  121          0249  1     fra : fixed_string,
;  122          0250  1     outopt : VECTOR [outopt_size],
;  123          0251  1     tsf : tsf_definition;
;  124          0252  1
;  125          0253  1 EXTERNAL ROUTINE
;  126          0254  1     clh,        erms;
```

```
;  128     0255  1 %SBTTL 'BSEMPH -- do emphasis by backspacing'
;  129     0256  1 GLOBAL ROUTINE BSEMPH
;  130     0257  1     ( character
;  131     0258  1     , italics
;  132     0259  1     , adr_emphasis_bits
;  133     0260  1     , overstrike_count
;  134     0261  1     , overstrike_char
;  135     0262  1     , overstrike_seq
;  136     0263  1     , pass_cntr
;  137     0264  1     ) : NOVALUE =
;  138     0265  1
;  139     0266  1 !++
;  140     0267  1 ! FUNCTIONAL DESCRIPTION:
;  141     0268  1 !
;  142     0269  1 !       BSEMPH handles emphasis -- bolding and underlining -- if the
;  143     0270  1 !       user said /BACKSPACE on the command line.
;  144     0271  1 !
;  145     0272  1 ! FORMAL PARAMETERS:
;  146     0273  1 !
;  147     0274  1 !       character       is the current character to be output (emphasized).
;  148     0275  1 !       italics         Not used by this routine -- passed for conformance only.
;  149     0276  1 !       adr_emphasis_bits Address of a word containing information on current-
;  150     0277  1 !                       character and previous-character bold and underline.
;  151     0278  1 !       overstrike_count Number of characters in an overstrike sequence.
;  152     0279  1 !       overstrike_char The character with which to overstrike the previous one.
;  153     0280  1 !       overstrike_seq  CH$PTR to the start of an overstrike sequence.
;  154     0281  1 !       pass_cntr       Count of which pass is happening.
;  155     0282  1 !
;  156     0283  1 ! IMPLICIT INPUTS:      None
;  157     0284  1 !
;  158     0285  1 ! IMPLICIT OUTPUTS:     None
;  159     0286  1 !
;  160     0287  1 ! ROUTINE VALUE:
;  161     0288  1 ! COMPLETION CODES:     None
;  162     0289  1 !
;  163     0290  1 ! SIDE EFFECTS:         None
;  164     0291  1 !--
;  165     0292  1
;  166     0293  2     BEGIN
;  167     0294  2
;  168     0295  2     BIND emphasis_bits = .adr_emphasis_bits;
;  169     0296  2
;  170     0297  2     LOCAL
;  171     0298  2         count;
;  172     0299  2
;  173     0300  2     ! Before processing the character, make sure that (1) there will be sufficient space in the
;  174     0301  2     ! output buffer, and (2) the output line is not too long for the operating system to handle.
;  175     0302  3     IF .fs_length (fra) GTR (.fs_maxsize (fra) - 20)    ! Need at least 20 characters.
;  176     0303  2         OR
;  177     0304  2         .fs_length (fra) GTR max_output_line_length     ! Reasonable output-line maximum length
;  178     0305  2     THEN
;  179     0306  3         BEGIN                       ! Output what's been built up
;  180     0307  3         clh (clh_out_nocrlf);       ! so far and start filling a
;  181     0308  3         fs_init (fra);              ! new buffer
;  182     0309  2         END;
;  183     0310  2
;  184     0311  2     IF .emph_current_bold
```

```
;  185     0312  2      THEN
;  186     0313  2          ! Protective code against /BOLD:<ridiculous amount> and
;  187     0314  2          count = MIN (10, .outopt_bldn + 1) ! stops buffer overflow.
;  188     0315  2      ELSE
;  189     0316  2          count = 1;
;  190     0317  2
;  191     0318  2      ! Repeatedly process the character as many times as it is
;  192     0319  2      ! to output. In most cases, this is once.  But if the
;  193     0320  2      ! character is bolded it will be scanned several times.
;  194     0321  2      INCR i FROM 1 TO .count DO
;  195     0322  3          BEGIN
;  196     0323  3          ! If bolding, output a backspace before each re-scan
;  197     0324  3          ! of the character.
;  198     0325  3          IF .i GTR 1
;  199     0326  3          THEN
;  200     0327  3              fs_wchar (fra, backspace);
;  201     0328  3
;  202     0329  3          ! Look for underlining
;  203     0330  3          IF .emph_current_underline
;  204     0331  3          THEN
;  205     0332  4              BEGIN
;  206     0333  4              fs_wchar (fra, .outopt_und_char);
;  207     0334  4
;  208     0335  4              ! Don't backspace if underscore is non-spacing.
;  209     0336  4              IF NOT .outopt_und_nosp
;  210     0337  4              THEN
;  211     0338  5                  fs_wchar (fra, backspace)
;  212     0339  3              END;
;  213     0340  3
;  214     0341  3          ! Output the deferred character.
;  215     0342  3          fs_wchar (fra, .character);
;  216     0343  3
;  217     0344  3          ! Look for overstrike.
;  218     0345  3          IF .overstrike_count NEQ 0
;  219     0346  3          THEN
;  220     0347  4              BEGIN
;  221     0348  4              LOCAL
;  222     0349  4                  temp_seq_ptr;
;  223     0350  4              temp_seq_ptr = .overstrike_seq;
;  224     0351  4
;  225     0352  4              INCR i FROM 1 TO .overstrike_count DO
;  226     0353  5                  BEGIN
;  227     0354  5                  ! Rescan overstrike sequence to take care of
;  228     0355  5                  ! multiple overstriking.
;  229     0356  5                  LOCAL
;  230     0357  5                      x;
;  231     0358  5
;  232     0359  5                  x = CH$RCHAR_A (temp_seq_ptr);  ! Point to the 'o';
;  233     0360  5                  x = CH$RCHAR_A (temp_seq_ptr);  ! Point to overstrike character
;  234     0361  5                  x = CH$RCHAR_A (temp_seq_ptr);  ! Get character, advance
;  235     0362  5                  fs_wchar (fra, backspace);
;  236     0363  5                  fs_wchar (fra, .x);
;  237     0364  4                  END;
;  238     0365  4              END
;  239     0366  3          END
;  240     0367  1      END;                                        ! End of BSEMPH
```

```
;                                                       .TITLE  LOEMPH Line output (emphasis -- bolding and und
                                                                        erlinin
                                                        .IDENT  \V04-000\

                                                        .PSECT  $OWN$,NOEXE,2

                                        0000  00000 WORK_STRING:
                                                        .WORD   0
                                      02  0E  00002            .BYTE   14, 2                                   ;
                                00000000  00004            .LONG   0                                       ;

                                                        .EXTRN  RINTFS, FRA, OUTOPT
                                                        .EXTRN  TSF, CLH, ERMS

                                                        .PSECT  $CODE$,NOWRT,2

                                          007C  00000           .ENTRY  BSEMPH, Save R2,R3,R4,R5,R6             ; 0256
                          56  00000000G   EF   9E  00002        MOVAB   OUTOPT+20, R6                           ;
                          55  00000000G   EF   9E  00009        MOVAB   FRA+4, R5                               ;
                50    04    A5           14   C3  00010        SUBL3   #20, FRA+8, R0                          ; 0302
                            50      08    A5   D1  00015        CMPL    FRA+12, R0                              ;
                                          0A   14  00019        BGTR    1$                                      ;
                000000FA    8F      08    A5   D1  0001B        CMPL    FRA+12, #250                            ; 0304
                                          15   15  00023        BLEQ    2$                                      ;
                                          0B   DD  00025  1$:    PUSHL   #11                                     ; 0307
                00000000G   EF            01   FB  00027        CALLS   #1, CLH                                 ;
                                    08    A5   D4  0002E        CLRL    FRA+12                                  ; 0308
                          FC    A5    0C    A5   9E  00031        MOVAB   FRA+16, FRA                             ;
                                65    FC    A5   D0  00036        MOVL    FRA, FRA+4                              ;
                11        0C    BC          01   E1  0003A  2$:    BBC     #1, @ADR_EMPHASIS_BITS, 4$              ; 0311
                50              66          01   C1  0003F        ADDL3   #1, OUTOPT+20, R0                       ; 0314
                                0A          50   D1  00043        CMPL    R0, #10                                 ;
                                            03   15  00046        BLEQ    3$                                      ;
                                50          0A   D0  00048        MOVL    #10, R0                                 ;
                                54          50   D0  0004B  3$:    MOVL    R0, COUNT                               ;
                                            03   11  0004E        BRB     5$                                      ;
                                54          01   D0  00050  4$:    MOVL    #1, COUNT                               ; 0316
                                            52   D4  00053  5$:    CLRL    I                                       ; 0345
                                            61   11  00055        BRB     11$                                     ;
                                01          52   D1  00057  6$:    CMPL    I, #1                                   ; 0325
                                            09   15  0005A        BLEQ    7$                                      ;
                          00    B5          08   90  0005C        MOVB    #8, @FRA+4                              ; 0327
                                            65   D6  00060        INCL    FRA+4                                   ;
                                    08    A5   D6  00062        INCL    FRA+12                                  ;
                17        0C    BC          02   E1  00065  7$:    BBC     #2, @ADR_EMPHASIS_BITS, 8$              ; 0330
                          00    B5    EC    A6   90  0006A        MOVB    OUTOPT, @FRA+4                          ; 0333
                                            65   D6  0006F        INCL    FRA+4                                   ;
                                    08    A5   D6  00071        INCL    FRA+12                                  ;
                                09  F0    A6   E8  00074        BLBS    OUTOPT+4, 8$                            ; 0336
                          00    B5          08   90  00078        MOVB    #8, @FRA+4                              ; 0338
                                            65   D6  0007C        INCL    FRA+4                                   ;
                                    08    A5   D6  0007E        INCL    FRA+12                                  ;
                          00    B5    04    AC   90  00081  8$:    MOVB    CHARACTER, @FRA+4                       ; 0342
                                            65   D6  00086        INCL    FRA+4                                   ;
                                    08    A5   D6  00088        INCL    FRA+12                                  ;
                                    10    AC   D5  0008B        TSTL    OVERSTRIKE_COUNT                        ; 0345
```

```
                                  28 13 0008E          BEQL     11$                                 ;
                    50       18   AC D0 00090          MOVL     OVERSTRIKE_SEQ, TEMP_SEQ_PTR        ; 0350
                                  51 D4 00094          CLRL     I                                   ; 0352
                                  1B 11 00096          BRB      10$                                 ;
                    53            80 9A 00098 9$:      MOVZBL   (TEMP_SEQ_PTR)+, X                  ; 0359
                    53            80 9A 0009B          MOVZBL   (TEMP_SEQ_PTR)+, X                  ; 0360
                    53            80 9A 0009E          MOVZBL   (TEMP_SEQ_PTR)+, X                  ; 0361
               00   B5            08 90 000A1          MOVB     #8, @FRA+4                          ; 0362
                                  65 D6 000A5          INCL     FRA+4                               ;
                             08   A5 D6 000A7          INCL     FRA+12                              ;
               00   B5            53 90 000AA          MOVB     X, @FRA+4                           ; 0363
                                  65 D6 000AE          INCL     FRA+4                               ;
                             08   A5 D6 000B0          INCL     FRA+12                              ;
          E0        51       10   AC F3 000B3 10$:     AOBLEQ   OVERSTRIKE_COUNT, I, 9$             ; 0352
          9B        52            54 F3 000B8 11$:     AOBLEQ   COUNT, I, 6$                        ; 0345
                                     04 000BC          RET                                          ; 0367

; Routine Size:  189 bytes,    Routine Base:  $CODE$ + 0000
```

```
;  242     0368  1 %SBTTL 'OPEMPH -- do emphasis by overprinting'
;  243     0369  1 GLOBAL ROUTINE OPEMPH
;  244     0370  1     ( character
;  245     0371  1     , italics
;  246     0372  1     , adr_emphasis_bits
;  247     0373  1     , overstrike_count
;  248     0374  1     , overstrike_char
;  249     0375  1     , overstrike_seq
;  250     0376  1     , pass_cntr
;  251     0377  1     ) : NOVALUE =
;  252     0378  1
;  253     0379  1 !++
;  254     0380  1 ! FUNCTIONAL DESCRIPTION:
;  255     0381  1 !
;  256     0382  1 !       OPEMPH processes emphasis -- bolding and underlining -- for
;  257     0383  1 !       the normal case in which the user did not say either /BACK,
;  258     0384  1 !       /DEC_INTERNAL=FLIP, /DEVICE=VT100, or DEVICE=LN01[e].
;  259     0385  1 !
;  260     0386  1 ! FORMAL PARAMETERS:
;  261     0387  1 !
;  262     0388  1 !       character       is the current character to be output (emphasized).
;  263     0389  1 !       italics         Not used by this routine -- passed for conformance only.
;  264     0390  1 !       adr_emphasis_bits Address of a word containing information on current-
;  265     0391  1 !                       character and previous-character bold and underline.
;  266     0392  1 !       overstrike_count Number of characters in an overstrike sequence
;  267     0393  1 !                       (passed for conformacne only).
;  268     0394  1 !       overstrike_char The character with which to overstrike the previous one.
;  269     0395  1 !       overstrike_seq  CH$PTR to the start of an overstrike sequence.
;  270     0396  1 !       pass_cntr       Count of which pass is happening.
;  271     0397  1 !
;  272     0398  1 ! IMPLICIT INPUTS:      None
;  273     0399  1 !
;  274     0400  1 ! IMPLICIT OUTPUTS:     None
;  275     0401  1 !
;  276     0402  1 ! ROUTINE VALUE:
;  277     0403  1 ! COMPLETION CODES:     None
;  278     0404  1 !
;  279     0405  1 ! SIDE EFFECTS:         None
;  280     0406  1 !--
;  281     0407  1
;  282     0408  2     BEGIN
;  283     0409  2
;  284     0410  2     BIND emphasis_bits = .adr_emphasis_bits;
;  285     0411  2
;  286     0412  2     SELECT .pass_cntr OF
;  287     0413  2         SET
;  288     0414  2
;  289     0415  2         [pass_setup, pass_bold] :
;  290     0416  3             BEGIN
;  291     0417  3             ! Generate non-spacing underscore if requested
;  292     0418  3
;  293     0419  4             IF (.emph_current_underline
;  294     0420  4                 AND .outopt_und_nosp
;  295     0421  4                 AND NOT .outopt_und_sep)
;  296     0422  3             THEN
;  297     0423  3                 IF (.pass_cntr EQL pass_setup) OR .emph_current_bold
;  298     0424  3                 THEN
```

```
;  299     0425  3                    fs_wchar (fra, .outopt_und_char);
;  300     0426  3
;  301     0427  3            ! Generate character
;  302     0428  4            IF (.pass_cntr EQL pass_setup) OR (.emph_current_bold)
;  303     0429  3            THEN
;  304     0430  4                fs_wchar (fra, .character)
;  305     0431  3            ELSE
;  306     0432  4                fs_wchar (fra, %C' ')
;  307     0433  2            END;
;  308     0434  2
;  309     0435  2        [pass_overstrike, pass_bold_overstrike] :
;  310     0436  2            ! Process overstriking. At this point it is only known that this
;  311     0437  2            !character is a special character, and that overstriking is being
;  312     0438  2            !processed.  It has not yet been determined whether or not this
;  313     0439  2            !character is to be overstruck.  Just putting out overstrike_char
;  314     0440  2            !will result in NULLs being output if this character is not to be
;  315     0441  2            !overstruck, but is none-the-less a special character.  Using MAX
;  316     0442  2            !makes sure that NULL never gets output.  This makes an implicit
;  317     0443  2            !restriction, i.e., that the user will never try to overstrike
;  318     0444  2            !with a character LSS %C' '. If this is unduly restrictive, MAX can
;  319     0445  2            !be replaced with a simple test to see if overstrike_char is NULL
;  320     0446  2            !or not.
;  321     0447  2
;  322     0448  3            IF (.pass_cntr EQL pass_overstrike) OR (.emph_current_bold)
;  323     0449  2            THEN
;  324     0450  3                fs_wchar (fra, MAX(%C' ', .overstrike_char))
;  325     0451  2            ELSE
;  326     0452  2                fs_wchar (fra, %C' ');
;  327     0453  2
;  328     0454  2        [pass_underline] :
;  329     0455  2            ! Process underlining.
;  330     0456  2            IF .emph_current_underline
;  331     0457  2            THEN
;  332     0458  3                fs_wchar (fra, .outopt_und_char)
;  333     0459  2            ELSE
;  334     0460  2                fs_wchar (fra, %C' ');
;  335     0461  2
;  336     0462  2        [pass_bold_underline] :
;  337     0463  2            ! Process underlining if also bold.
;  338     0464  2            IF .emph_current_underline AND .emph_current_bold
;  339     0465  2            THEN
;  340     0466  3                fs_wchar (fra, .outopt_und_char)
;  341     0467  2            ELSE
;  342     0468  2                fs_wchar (fra, %C' ');
;  343     0469  2
;  344     0470  2        [pass_real_text] :
;  345     0471  2            fs_wchar (fra, .character);
;  346     0472  2
;  347     0473  2        TES;
;  348     0474  2
;  349     0475  1    END;                                    ! End of OPEMPH


                           001C 00000         .ENTRY  OPEMPH, Save R2,R3,R4                    ; 0369
```

```
                     54 00000000G   EF  9E 00002          MOVAB   OUTOPT, R4                                ;
                     53 00000000G   EF  9E 00009          MOVAB   FRA+4, R3                               ;
                     52         0C  AC  D0 00010          MOVL    ADR_EMPHASIS_BITS, R2                   ; 0410
                     51         1C  AC  D0 00014          MOVL    PASS_CNTR, R1                           ; 0412
                                    3C  15 00018          BLEQ    6$                                      ; 0415
                     02             51  D1 0001A          CMPL    R1, #2                                  ;
                                    37  14 0001D          BGTR    6$                                      ;
                1A   62             02  E1 0001F          BBC     #2, (R2), 2$                            ; 0419
                     16         04  A4  E9 00023          BLBC    OUTOPT+4, 2$                            ; 0420
                     12         08  A4  E8 00027          BLBS    OUTOPT+8, 2$                            ; 0421
                     01             51  D1 0002B          CMPL    R1, #1                                  ; 0423
                                    04  13 0002E          BEQL    1$                                      ;
                09   62             01  E1 00030          BBC     #1, (R2), 2$                            ;
                00   B3             64  90 00034 1$:      MOVB    OUTOPT, @FRA+4                          ; 0425
                                    63  D6 00038          INCL    FRA+4                                   ;
                               08   A3  D6 0003A          INCL    FRA+12                                  ;
                     01             51  D1 0003D 2$:      CMPL    R1, #1                                  ; 0428
                                    04  13 00040          BEQL    3$                                      ;
                07   62             01  E1 00042          BBC     #1, (R2), 4$                            ;
                00   B3         04  AC  90 00046 3$:      MOVB    CHARACTER, @FRA+4                       ; 0430
                                    04  11 0004B          BRB     5$                                      ;
                00   B3             20  90 0004D 4$:      MOVB    #32, @FRA+4                             ; 0432
                                    63  D6 00051 5$:      INCL    FRA+4                                   ;
                               08   A3  D6 00053          INCL    FRA+12                                  ; 0430
                     05             51  D1 00056 6$:      CMPL    R1, #5                                  ; 0435
                                    29  19 00059          BLSS    11$                                     ;
                     06             51  D1 0005B          CMPL    R1, #6                                  ;
                                    24  14 0005E          BGTR    11$                                     ;
                     05             51  D1 00060          CMPL    R1, #5                                  ; 0448
                                    04  13 00063          BEQL    7$                                      ;
           12        62             01  E1 00065          BBC     #1, (R2), 9$                            ;
                     50         14  AC  D0 00069 7$:      MOVL    OVERSTRIKE_CHAR, R0                     ; 0450
                     20             50  D1 0006D          CMPL    R0, #32                                 ;
                                    03  18 00070          BGEQ    8$                                      ;
                     50             20  D0 00072          MOVL    #32, R0                                 ;
                00   B3             50  90 00075 8$:      MOVB    R0, @FRA+4                              ;
                                    04  11 00079          BRB     10$                                     ;
                00   B3             20  90 0007B 9$:      MOVB    #32, @FRA+4                             ; 0452
                                    63  D6 0007F 10$:     INCL    FRA+4                                   ;
                               08   A3  D6 00081          INCL    FRA+12                                  ; 0450
                     03             51  D1 00084 11$:     CMPL    R1, #3                                  ; 0454
                                    13  12 00087          BNEQ    14$                                     ;
           06        62             02  E1 00089          BBC     #2, (R2), 12$                           ; 0456
                00   B3             64  90 0008D          MOVB    OUTOPT, @FRA+4                          ; 0458
                                    04  11 00091          BRB     13$                                     ;
                00   B3             20  90 00093 12$:     MOVB    #32, @FRA+4                             ; 0460
                                    63  D6 00097 13$:     INCL    FRA+4                                   ;
                               08   A3  D6 00099          INCL    FRA+12                                  ; 0458
                     04             51  D1 0009C 14$:     CMPL    R1, #4                                  ; 0462
                                    17  12 0009F          BNEQ    17$                                     ;
           0A        62             02  E1 000A1          BBC     #2, (R2), 15$                           ; 0464
           06        62             01  E1 000A5          BBC     #1, (R2), 15$                           ;
                00   B3             64  90 000A9          MOVB    OUTOPT, @FRA+4                          ; 0466
                                    04  11 000AD          BRB     16$                                     ;
                00   B3             20  90 000AF 15$:     MOVB    #32, @FRA+4                             ; 0468
                                    63  D6 000B3 16$:     INCL    FRA+4                                   ;
                               08   A3  D6 000B5          INCL    FRA+12                                  ; 0466
```

```
                                07              51  D1 000B8 17$:   CMPL    R1, #7                          ; 0470
                                                0A  12 000BB        BNEQ    18$                             ;
                             00 B3          04  AC  90 000BD        MOVB    CHARACTER, @FRA+4               ; 0471
                                                63  D6 000C2        INCL    FRA+4                           ;
                                            08  A3  D6 000C4        INCL    FRA+12                          ;
                                                    04 000C7 18$:   RET                                     ; 0475

; Routine Size:  200 bytes,    Routine Base:  $CODE$ + 00BD
```

```
;  351        U 0476  1 %IF FLIP %THEN
;  352        U 0477  1 %SBTTL 'FLEMPH -- process emphasized character for FLIP output'
;  353        U 0478  1 GLOBAL ROUTINE FLEMPH
;  354        U 0479  1     ( character
;  355        U 0480  1     , italics
;  356        U 0481  1     , adr_emphasis_bits
;  357        U 0482  1     , pass_cntr
;  358        U 0483  1     ) : NOVALUE =
;  359        U 0484  1
;  360        U 0485  1 !++
;  361        U 0486  1 ! FUNCTIONAL DESCRIPTION:
;  362        U 0487  1 !
;  363        U 0488  1 !       FLEMPH processes emphasis -- bolding and underlining -- for
;  364        U 0489  1 !       FLI  output (VMS only), if the user said /DEC_INTERNAL:FLIP.
;  365        U 0490  1 !
;  366        U 0491  1 ! FORMAL PARAMETERS:
;  367        U 0492  1 !
;  368        U 0493  1 !       character       is the current character to be output (emphasized).
;  369        U 0494  1 !                       It is -1 if emphasis is to be turned off.
;  370        U 0495  1 !       italics         Not used by this routine -- passed for conformance only.
;  371        U 0496  1 !       adr_emphasis_bits Address of a word containing information on current-
;  372        U 0497  1 !                       character and previous-character bold and underline.
;  373        U 0498  1 !       pass_cntr       Count of which pass is happening.
;  374        U 0499  1 !
;  375        U 0500  1 ! IMPLICIT INPUTS:      None
;  376        U 0501  1 !
;  377        U 0502  1 ! IMPLICIT OUTPUTS:     No e
;  378        U 0503  1 !
;  379        U 0504  1 ! ROUTINE VALUE:
;  380        U 0505  1 ! COMPLETION CODES:     None
;  381        U 0506  1 !
;  382        U 0507  1 ! SIDE EFFECTS:         None
;  383        U 0508  1 !--
;  384        U 0509  1
;  385        U 0510  1     BEGIN
;  386        U 0511  1
;  387        U 0512  1     BIND emphasis_bits = .adr_emphasis_bits;
;  388        U 0513  1
;  389        U 0514  1     IF .character EQL -1
;  390        U 0515  1     THEN
;  391        U 0516  1         ! Turn emphasis off and return.
;  392        U 0517  1         BEGIN
;  393        U 0518  1         IF .emph_previous_bold
;  394        U 0519  1         THEN
;  395        U 0520  1             BEGIN
;  396        U 0521  1             emph_previous_bold = false;
;  397        U 0522  1             fs_wchar (fra, flip$k_end_bold);
;  398        U 0523  1             END;
;  399        U 0524  1         IF .emph_previous_underline
;  400        U 0525  1         THEN
;  401        U 0526  1             BEGIN
;  402        U 0527  1             emph_previous_underline = false;
;  403        U 0528  1             fs_wchar (fra, flip$k_end_underline);
;  404        U 0529  1             END;
;  405        U 0530  1         RETURN;
;  406        U 0531  1         END;
;  407        U 0532  1
```

```
;  408          U 0533  1      ! This call is a request to turn ON emphasis.
;  409          U 0534  1      SELECTONE 1 OF
;  410          U 0535  1      SET
;  411          U 0536  1
;  412          U 0537  1      [.emph_previous_bold AND (NOT .emph_current_bold)]:
;  413          U 0538  1          BEGIN
;  414          U 0539  1          fs_wchar (fra, flip$k_end_bold);
;  415          U 0540  1          emph_previous_bold = false;
;  416          U 0541  1          END;
;  417          U 0542  1
;  418          U 0543  1      [(NOT .emph_previous_bold) AND .emph_current_bold]:
;  419          U 0544  1          BEGIN
;  420          U 0545  1          fs_wchar (fra, flip$k_start_bold);
;  421          U 0546  1          emph_previous_bold = true;
;  422          U 0547  1          END;
;  423          U 0548  1
;  424          U 0549  1      [otherwise]:
;  425          U 0550  1          0;
;  426          U 0551  1
;  427          U 0552  1      TES;
;  428          U 0553  1
;  429          U 0554  1      SELECTONE 1 OF
;  430          U 0555  1      SET
;  431          U 0556  1
;  432          U 0557  1      [.emph_previous_underline AND (NOT .emph_current_underline)]:
;  433          U 0558  1          BEGIN
;  434          U 0559  1          fs_wchar (fra, flip$k_end_underline);
;  435          U 0560  1          emph_previous_underline = false;
;  436          U 0561  1          END;
;  437          U 0562  1
;  438          U 0563  1      [(NOT .emph_previous_underline) AND .emph_current_underline]:
;  439          U 0564  1          BEGIN
;  440          U 0565  1          fs_wchar (fra, flip$k_start_underline);
;  441          U 0566  1          emph_previous_underline = true;
;  442          U 0567  1          END;
;  443          U 0568  1
;  444          U 0569  1      [otherwise]:
;  445          U 0570  1          0;
;  446          U 0571  1
;  447          U 0572  1      TES;
;  448          U 0573  1
;  449          U 0574  1      !Now output the character to which the emphasis applies
;  450          U 0575  1      fs_wchar (fra, .character);
;  451          U 0576  1
;  452          U 0577  1      END;                                    ! End of FLEMPH
;  453            0578  1 %FI
```

```
;  455          U 0579  1 %IF DSRPLUS %THEN
;  456          U 0580  1 %SBTTL  'VTEMPH -- process emphasized character for VT100 output'
;  457          U 0581  1 GLOBAL ROUTINE VTEMPH
;  458          U 0582  1     ( character
;  459          U 0583  1     , italics
;  460          U 0584  1     , adr_emphasis_bits
;  461          U 0585  1     , pass_cntr
;  462          U 0586  1     ) : NOVALUE =
;  463          U 0587  1
;  464          U 0588  1 !++
;  465          U 0589  1 ! FUNCTIONAL DESCRIPTION:
;  466          U 0590  1 !
;  467          U 0591  1 !       VTEMPH writes the proper escape sequences on the FRA to handle
;  468          U 0592  1 !       underlining and bolding if the user said /DEC_INTERNAL:VT100.
;  469          U 0593  1 !
;  470          U 0594  1 ! FORMAL PARAMETERS:
;  471          U 0595  1 !
;  472          U 0596  1 !       character       is the current character to be output (emphasized).
;  473          U 0597  1 !       italics         Not used by this routine -- passed for conformance only.
;  474          U 0598  1 !                       It is -1 if emphasis is to be turned off.
;  475          U 0599  1 !       adr_emphasis_bits Address of a word containing information on current-
;  476          U 0600  1 !                       character and previous-character bold and underline.
;  477          U 0601  1 !       pass_cntr       Count of which pass is happening.
;  478          U 0602  1 !
;  479          U 0603  1 ! IMPLICIT INPUTS:      None
;  480          U 0604  1 !
;  481          U 0605  1 ! IMPLICIT OUTPUTS:     None
;  482          U 0606  1 !
;  483          U 0607  1 ! ROUTINE VALUE:
;  484          U 0608  1 ! COMPLETION CODES:     None
;  485          U 0609  1 !
;  486          U 0610  1 ! SIDE EFFECTS:         None
;  487          U 0611  1 !--
;  488          U 0612  1
;  489          U 0613  1     BEGIN
;  490          U 0614  1
;  491          U 0615  1     BIND emphasis_bits = .adr_emphasis_bits;
;  492          U 0616  1
;  493          U 0617  1     $STR_DESC_INIT (DESCRIPTOR= work_string, CLASS=DYNAMIC);
;  494          U 0618  1
;  495          U 0619  1     ! Before processing the character, make sure that (1) there will be sufficient space in the
;  496          U 0620  1     ! output buffer to turn off emphasis and then turn it back on again, and (2) the output line
;  497          U 0621  1     ! is not too long for the operating system to handle.
;  498          U 0622  1     IF .fs_length (fra) GTR (.fs_maxsize (fra) - 20)    ! Need at least 20 characters.
;  499          U 0623  1         OR
;  500          U 0624  1         .fs_length (fra) GTR max_output_line_length     ! Reasonable output-line maximum length
;  501          U 0625  1     THEN
;  502          U 0626  1         BEGIN
;  503          U 0627  1         clh (clh_out_nocrlf);
;  504          U 0628  1         fs_init (fra);
;  505          U 0629  1         END;
;  506          U 0630  1
;  507          U 0631  1     IF .character EQL -1
;  508          U 0632  1     THEN
;  509          U 0633  1         ! Turn off all emphasis and return.
;  510          U 0634  1         BEGIN
;  511          U 0635  1         $STR_COPY (TARGET= work_string, STRING=
```

```
;  512          U 0636  1            $STR_CONCAT (%CHAR(escape), '[', '0', 'm' )
;  513          U 0637  1                  );
;  514          U 0638  1          write_emphasis;
;  515          U 0639  1
;  516          U 0640  1          emph_previous_bold = false;
;  517          U 0641  1          emph_previous_underline = false;
;  518          U 0642  1
;  519          U 0643  1          RETURN;
;  520          U 0644  1          END;
;  521          U 0645  1
;  522          U 0646  1      ! This call is a request to turn ON emphasis.
;  523          U 0647  1
;  524          U 0648  1      ! If bolding and underlining are the same as for the previous character,
;  525          U 0649  1      ! do nothing.  Otherwise, if there is a difference, we have to turn off
;  526          U 0650  1      ! everything so we can turn on only the one we want.
;  527          U 0651  1      IF (.emph_current_bold NEQ .emph_previous_bold)
;  528          U 0652  1          OR
;  529          U 0653  1          (.emph_current_underline NEQ .emph_previous_underline)
;  530          U 0654  1      THEN
;  531          U 0655  1          !Different status for at least one of them.
;  532          U 0656  1          BEGIN
;  533          U 0657  1          IF .emph_previous_emphasized NEQ 0
;  534          U 0658  1          THEN
;  535          U 0659  1              BEGIN
;  536          U 0660  1              ! Disable both of them (unless we're starting from a condition
;  537          U 0661  1              ! of no emphasis already).
;  538          U 0662  1              $STR_COPY (TARGET= work_string, STRING=
;  539          U 0663  1                  $STR_CONCAT (%CHAR(escape), '[', '0', 'm' )
;  540          U 0664  1                        );
;  541          U 0665  1              write_emphasis;
;  542          U 0666  1              END;
;  543          U 0667  1
;  544          U 0668  1          ! Turn off both history bits. The right ones will get turned on soon.
;  545          U 0669  1          emph_previous_bold = false;
;  546          U 0670  1          emph_previous_underline = false;
;  547          U 0671  1
;  548          U 0672  1          !Now turn on only the emphasis that's wanted.
;  549          U 0673  1          IF .emph_current_underline                !Underlining wanted?
;  550          U 0674  1          THEN
;  551          U 0675  1              !Turn on underlining.
;  552          U 0676  1              BEGIN
;  553          U 0677  1              $STR_COPY (TARGET= work_string, STRING=
;  554          U 0678  1                  $STR_CONCAT (%CHAR(escape), '[', '4', 'm' )
;  555          U 0679  1                        );
;  556          U 0680  1              write_emphasis;
;  557          U 0681  1
;  558          U 0682  1              !Turn on the history bit for underlining.
;  559          U 0683  1              emph_previous_underline = true;
;  560          U 0684  1              END;
;  561          U 0685  1          IF .emph_current_bold                    !Bolding wanted?
;  562          U 0686  1          THEN
;  563          U 0687  1              !Turn on bolding.
;  564          U 0688  1              BEGIN
;  565          U 0689  1              $STR_COPY (TARGET= work_string, STRING=
;  566          U 0690  1                  $STR_CONCAT (%CHAR(escape), '[', '1', 'm' )
;  567          U 0691  1                        );
;  568          U 0692  1              write_emphasis;
```

```
;  569        U 0693  1
;  570        U 0694  1                !Turn on the history bit for bolding.
;  571        U 0695  1                emph_previous_bold = true;
;  572        U 0696  1                END;
;  573        U 0697  1            END;                                    !End: turn on appropriate bits
;  574        U 0698  1
;  575        U 0699  1        !Now output the character to which the emphasis applies.
;  576        U 0700  1        fs_wchar (fra, .character);
;  577        U 0701  1
;  578        U 0702  1        END;                                        ! End of VTEMPH
;  579          0703  1 %FI
```

```
;   581         0704  1 %IF LN01 %THEN
;   582         0705  1 %SBTTL  'LNEMPH -- process emphasized character for LN01 output'
;   583         0706  1 GLOBAL ROUTINE LNEMPH
;   584         0707  1     ( character
;   585         0708  1     , italics
;   586         0709  1     , adr_emphasis_bits
;   587         0710  1     , overstrike_count
;   588         0711  1     , overstrike_char
;   589         0712  1     , overstrike_seq
;   590         0713  1     , pass_cntr
;   591         0714  1     ) : NOVALUE =
;   592         0715  1
;   593         0716  1 !++
;   594         0717  1 ! FUNCTIONAL DESCRIPTION:
;   595         0718  1 !
;   596         0719  1 !       LNEMPH writes the proper escape sequences on the FRA to handle
;   597         0720  1 !       underlining and bolding if the user said /DEVECE=LN01[e].
;   598         0721  1 !
;   599         0722  1 !       The escape sequences written have the form of a font change:
;   600         0723  1 !
;   601         0724  1 !         <esc> [ N m
;   602         0725  1 !
;   603         0726  1 !       where N = 12 (text), 13 (bold), 14 (italic), or 15 (bold italic).
;   604         0727  1 !
;   605         0728  1 !       The SGR (select graphic rendition) escape sequences used for
;   606         0729  1 !       underlining have the same format exactly. N = 24 turns underlining
;   607         0730  1 !       on, and N = 4 turns it off.
;   608         0731  1 !
;   609         0732  1 ! FORMAL PARAMETERS:
;   610         0733  1 !
;   611         0734  1 !       character       is the current character to be output (emphasized).
;   612         0735  1 !                       It is -1 if emphasis is to be turned off.
;   613         0736  1 !       italics         is TRUE if real italics (fonts 14 and 15) are to be
;   614         0737  1 !                       used, and FALSE if underlining is to be used.
;   615         0738  1 !       adr_emphasis_bits Address of a word containing information on current-
;   616         0739  1 !                       character and previous-character bold and underline.
;   617         0740  1 !       overstrike_count Number of characters in an overstrike sequence.
;   618         0741  1 !       overstrike_char The character with which to overstrike the previous one.
;   619         0742  1 !       overstrike_seq  Not used by this routine -- passed for conformance only.
;   620         0743  1 !       pass_cntr       Count of which pass is happening.
;   621         0744  1 !
;   622         0745  1 ! IMPLICIT INPUTS:      None
;   623         0746  1 !
;   624         0747  1 ! IMPLICIT OUTPUTS:     None
;   625         0748  1 !
;   626         0749  1 ! ROUTINE VALUE:
;   627         0750  1 ! COMPLETION CODES:     None
;   628         0751  1 !
;   629         0752  1 ! SIDE EFFECTS:         None
;   630         0753  1 !--
;   631         0754  1
;   632         0755  2     BEGIN
;   633         0756  2
;   634         0757  2     BIND emphasis_bits = .adr_emphasis_bits;
;   635         0758  2
;   636         0759  2     LITERAL
;   637         0760  2         text_font = 12,
```

```
;  638          0761  2          bold_font = 13,
;  639          0762  2          italic_font = 14,
;  640          0763  2          bold_italic_font = 15;
;  641          0764  2
;  642          0765  2      LOCAL
;  643          0766  2          previous_font,
;  644          0767  2          new_font,
;  645          0768  2          underline_sgr;
;  646          0769  2      !
;  647          0770  2      ! Initialize.
;  648          0771  2      !
;  649          0772  2      previous_font = 0;
;  650          0773  2      new_font = 0;
;  651          0774  2      underline_sgr = 0;
;  652          0775  2      $STR_DESC_INIT (DESCRIPTOR= work_string, CLASS=DYNAMIC);
;  653          0776  2
;  654          0777  2  !**debug
;  655          0778  2      IF (.pass_cntr EQL pass_overstrike) AND .tsf_ovr
;  656          0779  2      THEN
;  657          0780  3          BEGIN
;  658          0781  4          IF (.overstrike_count NEQ 0)
;  659          0782  3          THEN
;  660          0783  4              fs_wchar (fra, MAX(%C' ', .overstrike_char) )
;  661          0784  3          ELSE
;  662          0785  3              fs_wchar (fra, %C' ');
;  663          0786  3          RETURN;
;  664          0787  2          END;
;  665          0788  2  !**end-debug
;  666          0789  2
;  667          0790  2      ! Before processing the character, make sure that (1) there will be
;  668          0791  2      ! sufficient space in the output buffer to turn off emphasis and then
;  669          0792  2      ! turn it back on again, and (2) the output line is not too long for
;  670          0793  2      ! the operating system to handle.
;  671          0794  3      IF .fs_length (fra) GTR (.fs_maxsize (fra) - 20)    ! Need at least 20 characters.
;  672          0795  2          OR
;  673          0796  2          .fs_length (fra) GTR max_output_line_length     ! Reasonable output-line maximum length
;  674          0797  2      THEN
;  675          0798  3          BEGIN
;  676          0799  3          clh (clh_out_nocrlf);
;  677          0800  3          fs_init (fra);
;  678          0801  2          END;
;  679          0802  2      !
;  680          0803  2      ! Calculate the font number used for the previous character. (It will be
;  681          0804  2      ! used to determine whether any font change is needed.) The calculation
;  682          0805  2      ! depends on the definition of emph_previous_emphasized (a macro), which
;  683          0806  2      ! is a 2-bit field having values 0, 1, 2, or 3. This value is added to the
;  684          0807  2      ! 'base' font (text_font = 12). If italics are not being used, the font
;  685          0808  2      ! number must be decremented by 2.
;  686          0809  2      !
;  687          0810  2      previous_font = .emph_previous_emphasized + text_font;
;  688          0811  2
;  689          0812  3      IF (.previous_font GEQ italic_font) AND (NOT .italics)
;  690          0813  2      THEN
;  691          0814  2          previous_font = .previous_font - 2;
;  692          0815  2
;  693          0816  2      IF .character EQL -1
;  694          0817  2      THEN
```

```
;  695          0818  2          ! Turn off all emphasis and return.
;  696          0819  3          BEGIN
;  697          0820  3          ! Reset to text font if not already in that font.
;  698          0821  3          !
;  699          0822  4          IF (.previous_font NEQ text_font)
;  700          0823  3          THEN
;  701        P 0824  3              $STR_COPY (TARGET= work_string, STRING=
;  702        P 0825  3                  $STR_CONCAT ( %CHAR(escape)
;  703        P 0826  3                              , '['
;  704        P 0827  3                              , $STR_ASCII (text_font)
;  705        P 0828  3                              , 'm'
;  706        P 0829  3                              )
;  707          0830  3                      );
;  708          0831  3
;  709          0832  3          ! Turn off underlining too if it was on.
;  710          0833  3          !
;  711          0834  4          IF (.emph_previous_underline    !Underlining on?
;  712          0835  4              AND NOT .italics)          !Really underlining, not italics?
;  713          0836  3          THEN
;  714        P 0837  3              $STR_APPEND (TARGET= work_string, STRING=
;  715        P 0838  3                  $STR_CONCAT ( %CHAR(escape)
;  716        P 0839  3                              , '[24m'
;  717        P 0840  3                              )
;  718          0841  3                      );
;  719          0842  3          write_emphasis;
;  720          0843  3
;  721          0844  3          emph_previous_bold = false;
;  722          0845  3          emph_previous_underline = false;
;  723          0846  3
;  724          0847  3          RETURN;
;  725          0848  2          END;
;  726          0849  2      !+
;  727          0850  2      ! This call is a request to turn on emphasis. Determine what the new font
;  728          0851  2      ! should be. The calculation depends on the definition of emph_curremt_emphasized
;  729          0852  2      ! (a macro), which is a 2-bit field having values 0, 1, 2, or 3. This value is
;  730          0853  2      ! added to the 'base' font (text_font = 12).  If italics are not being used
;  731          0854  2      ! the font number must be decremented by 2.
;  732          0855  2      !-
;  733          0856  2          new_font = text_font + .emph_current_emphasized;
;  734          0857  2
;  735          0858  3          IF (.new_font GEQ italic_font) AND (NOT .italics)
;  736          0859  2          THEN
;  737          0860  2              new_font = .new_font - 2;
;  738          0861  2
;  739          0862  2          ! If we are doing underlining (not true italics), then set up the new
;  740          0863  2          ! font number to take advantage of the fact that the Underline On and
;  741          0864  2          ! Underline Off SGR escape sequences have exactly the same format as a
;  742          0865  2          ! font change.
;  743          0866  2          !
;  744          0867  2          IF NOT .italics
;  745          0868  2          THEN
;  746          0869  3              BEGIN
;  747          0870  3
;  748          0871  4              IF (.emph_current_underline AND (NOT .emph_previous_underline) )
;  749          0872  3              THEN
;  750          0873  3                  underline_sgr = 4;          !Underline On SGR: <esc> [ 4 m
;  751          0874  3
```

```
  4          IF ( (NOT .emph_current_underline) AND .emph_previous_underline )
  3          THEN
  3              underline_sgr = 24;          !Underline Off SGR: <esc> [ 24 m
  2          END;
  2
  3      IF (.previous_font NEQ .new_font)
  3          OR (.underline_sgr NEQ 0)
  2      THEN
  3          BEGIN
  3
  3          $STR_DESC_INIT (DESCRIPTOR= work_string, CLASS=DYNAMIC);
  3
  3          !
  3          !Switch to the new font.
  3          !
  3          IF .previous_font NEQ .new_font
  3          THEN
P 3              $STR_COPY (TARGET= work_string, STRING=
P 3                  $STR_CONCAT ( %CHAR(escape)
P 3                              , '['
P 3                              , $STR_ASCII (.new_font)
P 3                              , 'm'
P 3                              )
  3                      );
  3
  3          IF .underline_sgr NEQ 0
  3          THEN
P 3              $STR_APPEND (TARGET= work_string, STRING=
P 3                  $STR_CONCAT ( %CHAR(escape)
P 3                              , '['
P 3                              , $STR_ASCII (.underline_sgr)
P 3                              , 'm'
P 3                              )
  3                      );
  3          write_emphasis;
  3
  3          emph_previous_bold = .emph_current_bold;
  3          emph_previous_underline = .emph_current_underline;
  3
  2          END;
  2
  2      !Now output the character to which the emphasis applies
  2      fs_wchar (fra, .character);
  2
  1      END;                                        ! End of LNEMPH


                                                    .PSECT  $PLIT$,NOWRT,NOEXE,2

                           1B  00000 P.AAD:  .ASCII  <27>
                           5B  00001 P.AAE:  .ASCII  \[\
                           6D  00002 P.AAF:  .ASCII  \m\
                           1B  00003 P.AAL:  .ASCII  <27>
               6D  34  32  5B  00004 P.AAM:  .ASCII  \[24m\
                           1B  00008 P.AAS:  .ASCII  <27>
                           5B  00009 P.AAT:  .ASCII  \[\
```

```
                                                E 3
                    6D  0000A P.AAU:    .ASCII  \m\
                    1B  0000B P.ABB:    .ASCII  <27>
                    5B  0000C P.ABC:    .ASCII  \[\
                    6D  0000D P.ABD:    .ASCII  \m\

                                        .PSECT  $OWN$,NOEXE,2

                0001  00008 $STR$STRING0:
                                        .WORD   1
                  01  0E  0000A          .BYTE   14, 1
            00000000'  0000C            .ADDRESS P.AAD
                0001  00010 $STR$STRING1:
                                        .WORD   1
                  01  0E  00012          .BYTE   14, 1
            00000000'  00014            .ADDRESS P.AAE
                0001  00018 $STR$STRING3:
                                        .WORD   1
                  01  0E  0001A          .BYTE   14, 1
            00000000'  0001C            .ADDRESS P.AAF
                0001  00020 $STR$STRING0:
                                        .WORD   1
                  01  0E  00022          .BYTE   14, 1
            00000000'  00024            .ADDRESS P.AAL
                0004  00028 $STR$STRING1:
                                        .WORD   4
                  01  0E  0002A          .BYTE   14, 1
            00000000'  0002C            .ADDRESS P.AAM
                0001  00030 $STR$STRING0:
                                        .WORD   1
                  01  0E  00032          .BYTE   14, 1
            00000000'  00034            .ADDRESS P.AAS
                0001  00038 $STR$STRING1:
                                        .WORD   1
                  01  0E  0003A          .BYTE   14, 1
            00000000'  0003C            .ADDRESS P.AAT
                0001  00040 $STR$STRING3:
                                        .WORD   1
                  01  0E  00042          .BYTE   14, 1
            00000000'  00044            .ADDRESS P.AAU
                0001  00048 $STR$STRING0:
                                        .WORD   1
                  01  0E  0004A          .BYTE   14, 1
            00000000'  0004C            .ADDRESS P.ABB
                0001  00050 $STR$STRING1:
                                        .WORD   1
                  01  0E  00052          .BYTE   14, 1
            00000000'  00054            .ADDRESS P.ABC
                0001  00058 $STR$STRING3:
                                        .WORD   1
                  01  0E  0005A          .BYTE   14, 1
            00000000'  0005C            .ADDRESS P.ABD

                                $STR$DESC=          WORK_STRING
                                $STR$BIN_DESC=      WORK_STRING
                                $STR$TARGET=        WORK_STRING
                                $STR$DESC=          WORK_STRING
                                $STR$BIN_DESC=      WORK_STRING
```

```
                                                $STR$TARGET=        WORK_STRING
                                                        .EXTRN  XST$COPY, STR$FAILURE
                                                        .EXTRN  XST$JOIN, XST$ASCII
                                                        .EXTRN  XST$APPEND

                                                        .PSECT  $CODE$,NOWRT,2

                                    0FFC 00000          .ENTRY  LNEMPH, Save R2,R3,R4,R5,R6,R7,R8,R9,R10,-      ; 0706
                                                                R11
                          5B 00000000G      EF  9E 00002          MOVAB   XST$ASCII, R11                          ;
                          5A 00000000G      EF  9E 00009          MOVAB   STR$FAILURE, R10                        ;
                          59 00000000G      EF  9E 00010          MOVAB   XST$JOIN, R9                            ;
                          58 00000000G      EF  9E 00017          MOVAB   FRA+4, R8                               ;
                          57 00000000'      EF  9E 0001E          MOVAB   $STR$DESC, R7                           ;
                          52         0C     AC  D0 00025          MOVL    ADR_EMPHASIS_BITS, R2                   ; 0757
                                            54  7C 00029          CLRQ    NEW_FONT                                ; 0773
                                            53  D4 0002B          CLRL    UNDERLINE_SGR                           ; 0774
                          67 020E0000       8F  D0 0002D          MOVL    #34471936, $STR$DESC                    ; 0775
                                   04       A7  D4 00034          CLRL    $STR$DESC+4                             ;
                          05         1C     AC  D1 00037          CMPL    PASS_CNTR, #5                           ; 0778
                                            2A  12 0003B          BNEQ    4$                                      ;
                          50 00000000G      EF  D0 0003D          MOVL    TSF, R0                                 ;
                 1E   08  A0                02  E1 00044          BBC     #2, 8(R0), 4$                           ;
                                   10       AC  D5 00049          TSTL    OVERSTRIKE_COUNT                        ; 0781
                                            12  13 0004C          BEQL    2$                                      ;
                          50       14       AC  D0 0004E          MOVL    OVERSTRIKE_CHAR, R0                     ; 0783
                          20                50  D1 00052          CMPL    R0, #32                                 ;
                                            03  18 00055          BGEQ    1$                                      ;
                          50                20  D0 00057          MOVL    #32, R0                                 ;
                             00     B8            50  90 0005A 1$:      MOVB    R0, @FRA+4                      ;
                                            04  11 0005E          BRB     3$                                      ;
                             00     B8            20  90 00060 2$:      MOVB    #32, @FRA+4                     ; 0785
                                        018D    31  00064 3$:      BRW     24$                                     ;
                 50         04     A8            14  C3 00067 4$:      SUBL3   #20, FRA+8, R0                  ; 0794
                          50       08     A8      D1 0006C              CMPL    FRA+12, R0                      ;
                                            0A  14  00070              BGTR    5$                              ;
                    000000FA      8F      08     A8  D1 00072          CMPL    FRA+12, #250                    ; 0796
                                            15  15  0007A              BLEQ    6$                              ;
                                            0B  DD  0007C 5$:          PUSHL   #11                             ; 0799
                    00000000G     EF              01  FB 0007E          CALLS   #1, CLH                         ;
                                      08    A8      D4  00085          CLRL    FRA+12                          ; 0800
                          FC      A8      0C    A8  9E 00088          MOVAB   FRA+16, FRA                     ;
                                   68       FC    A8  D0 0008D          MOVL    FRA, FRA+4                      ;
 55              62                02            03  EF 00091 6$:      EXTZV   #3, #2, (R2), PREVIOUS_FONT     ; 0810
                                   55            0C  C0 00096          ADDL2   #12, PREVIOUS_FONT              ;
                                   0E            55  D1 00099          CMPL    PREVIOUS_FONT, #14              ; 0812
                                                 07  19 0009C          BLSS    7$                              ;
                                   03       08   AC  E8 0009E          BLBS    ITALICS, 7$                     ;
                                   55            02  C2 000A2          SUBL2   #2, PREVIOUS_FONT               ; 0814
                    FFFFFFFF      8F       04   AC  D1 000A5 7$:      CMPL    CHARACTER, #-1                  ; 0816
                                                 6D  12 000AD          BNEQ    12$                             ;
                                   0C            55  D1 000AF          CMPL    PREVIOUS_FONT, #12              ; 0822
                                                 2A  13 000B2          BEQL    8$                              ;
                                   7E            0C  7D 000B4          MOVQ    #12, -(SP)                      ; 0830
                                   7E      0903  8F  3C 000B7          MOVZWL  #2307, -(SP)                    ;
                                   6B            03  FB 000BC          CALLS   #3, XST$ASCII                   ;
                                           18    A7  9F 000BF          PUSHAB  $STR$STRING3                    ;
```

```
                                                50  DD 000C2          PUSHL   R0                                      ;
                                              10    A7  9F 000C4      PUSHAB  $STR$STRING1                            ;
                                              08    A7  9F 000C7      PUSHAB  $STR$STRING0                            ;
                                        69          04  FB 000CA      CALLS   #4, XST$JOIN                            ;
                                                    5A  DD 000CD      PUSHL   R10                                     ;
                                                    7E  D4 000CF      CLRL    -(SP)                                   ;
                                            0081    8F  BB 000D1      PUSHR   #^M<R0,R7>                              ;
                                                    7E  D4 000D5      CLRL    -(SP)                                   ;
                                 00000000G  EF          05  FB 000D7      CALLS   #5, XST$COPY                            ;
                              1E            62          04  E1 000DE 8$:   BBC     #4, (R2), 9$                    ; 0834
                                            1A    08    AC  E8 000E2      BLBS    ITALICS, 9$                     ; 0835
                                                  28    A7  9F 000E6      PUSHAB  $STR$STRING1                    ; 0841
                                                  20    A7  9F 000E9      PUSHAB  $STR$STRING0                    ;
                                        69          02  FB 000EC      CALLS   #2, XST$JOIN                    ;
                                                    5A  DD 000EF      PUSHL   R10                             ;
                                                    7E  D4 000F1      CLRL    -(SP)                           ;
                                            0081    8F  BB 000F3      PUSHR   #^M<R0,R7>                      ;
                                                    7E  D4 000F7      CLRL    -(SP)                           ;
                                 00000000G  EF          05  FB 000F9      CALLS   #5, XST$APPEND                  ;
                                            56    04    A7  D0 00100 9$:   MOVL    WORK_STRING+4, PTR              ;
                                            51          67  3C 00104      MOVZWL  WORK_STRING, R1                 ;
                                                        50  D4 00107      CLRL    I                               ;
                                                        09  11 00109      BRB     11$                             ;
                                       00   B8              86  90 0010B 10$:   MOVB    (PTR)+, @FRA+4          ;
                                                        68  D6 0010F      INCL    FRA+4                           ;
                                                  08    A8  D6 00111      INCL    FRA+12                          ;
                              F3            50          51  F3 00114 11$:   AOBLEQ  R1, I, 10$                  ;
                                            62          18  8A 00118      BICB2   #24, (R2)                       ; 0845
                                                        04  00 0011B      RET                                     ; 0819
                        54    62            02          01  EF 0011C 12$:   EXTZV   #1, #2, (R2), NEW_FONT          ; 0856
                                            54          0C  C0 00121      ADDL2   #12, NEW_FONT                   ;
                                            0E          54  D1 00124      CMPL    NEW_FONT, #14                   ; 0858
                                                        07  19 00127      BLSS    13$                             ;
                                            1D    08    AC  E8 00129      BLBS    ITALICS, 16$                    ;
                                            54          02  C2 0012D      SUBL2   #2, NEW_FONT                    ; 0860
                                            16    08    AC  E8 00130 13$:   BLBS    ITALICS, 16$                ; 0867
                              0B            62          02  E1 00134      BBC     #2, (R2), 15$                   ; 0871
                              03            62          04  E0 00138      BBS     #4, (R2), 14$                   ;
                                            53          04  D0 0013C      MOVL    #4, UNDERLINE_SGR               ; 0873
                              07            62          02  E0 0013F 14$:   BBS     #2, (R2), 16$               ; 0875
                              03            62          04  E1 00143 15$:   BBC     #4, (R2), 16$               ;
                                            53          18  D0 00147      MOVL    #24, UNDERLINE_SGR              ; 0877
                                                        50  D4 0014A 16$:   CLRL    R0                              ; 0880
                                            54          55  D1 0014C      CMPL    PREVIOUS_FONT, NEW_FONT         ;
                                                        04  13 0014F      BEQL    17$                             ;
                                                        50  D6 00151      INCL    R0                              ;
                                                        07  11 00153      BRB     18$                             ;
                                                        53  D5 00155 17$:   TSTL    UNDERLINE_SGR                   ; 0881
                                                        03  12 00157      BNEQ    18$                             ;
                                                  0093  31  00159      BRW     23$                             ;
                                        67  020E0000    8F  D0 0015C 18$:   MOVL    #34471936, $STR$DESC            ; 0885
                                                  04    A7  D4 00163      CLRL    $STR$DESC+4                     ;
                                        2B          50  E9 00166      BLBC    R0, 19$                         ; 0890
                                                    7E  D4 00169      CLRL    -(SP)                           ; 0898
                                                    54  DD 0016B      PUSHL   NEW_FONT                        ;
                                        7E    0903  8F  3C 0016D      MOVZWL  #2307, -(SP)                    ;
                                        6B          03  FB 00172      CALLS   #3, XST$ASCII                   ;
```

```
                                40   A7  9F 00175          PUSHAB  $STR$STRING3                    ;
                                50   DD  00178          PUSHL   R0                              ;
                                38   A7  9F 0017A          PUSHAB  $STR$STRING1                    ;
                                30   A7  9F 0017D          PUSHAB  $STR$STRING0                    ;
                            69       04  FB 00180          CALLS   #4, XST$JOIN                    ;
                                     5A  DD 00183          PUSHL   R10                             ;
                                     7E  D4 00185          CLRL    -(SP)                           ;
                                0081 8F  BB 00187          PUSHR   #^M<R0,R7>                      ;
                                     7E  D4 0018B          CLRL    -(SP)                           ;
                00000000G       EF       05  FB 0018D          CALLS   #5, XST$COPY                    ;
                                         53  D5 00194 19$:      TSTL    UNDERLINE_SGR                   ; 0900
                                         2B  13 00196          BEQL    20$                             ;
                                         7E  D4 00198          CLRL    -(SP)                           ; 0908
                                         53  DD 0019A          PUSHL   UNDERLINE_SGR                   ;
                            7E       0903 8F  3C 0019C          MOVZWL  #2307, -(SP)                    ;
                            6B           03  FB 001A1          CALLS   #3, XST$ASCII                   ;
                                58   A7  9F 001A4          PUSHAB  $STR$STRING3                    ;
                                50   DD  001A7          PUSHL   R0                              ;
                                50   A7  9F 001A9          PUSHAB  $STR$STRING1                    ;
                                48   A7  9F 001AC          PUSHAB  $STR$STRING0                    ;
                            69       04  FB 001AF          CALLS   #4, XST$JOIN                    ;
                                     5A  DD 001B2          PUSHL   R10                             ;
                                     7E  D4 001B4          CLRL    -(SP)                           ;
                                0081 8F  BB 001B6          PUSHR   #^M<R0,R7>                      ;
                                     7E  D4 001BA          CLRL    -(SP)                           ;
                00000000G       EF       05  FB 001BC          CALLS   #5, XST$APPEND                  ;
                            53       04  A7  D0 001C3 20$:      MOVL    WORK_STRING+4, PTR              ;
                            51           67  3C 001C7          MOVZWL  WORK_STRING, R1                 ;
                                         50  D4 001CA          CLRL    I                               ;
                                         09  11 001CC          BRB     22$                             ;
                                00   B8          83  90 001CE 21$:      MOVB    (PTR)+, @FRA+4          ;
                                             68  D6 001D2          INCL    FRA+4                           ;
                                         08  A8  D6 001D4          INCL    FRA+12                          ;
                            F3           50      51  F3 001D7 22$:      AOBLEQ  R1, I, 21$              ;
                50          62           01      01  EF 001DB          EXTZV   #1, #1, (R2), R0        ; 0911
                62          01           03      50  F0 001E0          INSV    R0, #3, #1, (R2)        ;
                50          62           01      02  EF 001E5          EXTZV   #2, #1, (R2), R0        ; 0912
                62          01           04      50  F0 001EA          INSV    R0, #4, #1, (R2)        ;
                                00   B8      04  AC  90 001EF 23$:      MOVB    CHARACTER, @FRA+4       ; 0917
                                             68  D6 001F4 24$:      INCL    FRA+4                           ;
                                         08  A8  D6 001F6          INCL    FRA+12                          ;
                                             04  001F9          RET                                     ; 0919

; Routine Size:  506 bytes,    Routine Base:  $CODE$ + 0185

;  797          0920  1 %FI
;  798          0921  1
;  799          0922  1 END                                     ! End of module
;  800          0923  0 ELUDOM



;                                PSECT SUMMARY
```

```
;
;       Name                    Bytes                       Attributes
;
;  $OWN$                          96  NOVEC,  WRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;  $CODE$                        895  NOVEC,NOWRT,  RD ,  EXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)
;  $PLIT$                         14  NOVEC,NOWRT,  RD ,NOEXE,NOSHR,  LCL,  REL,  CON,NOPIC,ALIGN(2)



;                              Library Statistics
;                                      -------- Symbols --------      Pages       Processing
;       File                           Total    Loaded   Percent      Mapped      Time
;
;  _$255$DUA28:[SYSLIB]XPORT.L32;1       590        51         8         252       00:00.1
;  _$255$DUA28:[RUNOFF.SRC]DSRLIB.L32;1 1248        36         2          86       00:00.3




;                                   COMMAND QUALIFIERS

;       BLISS/CHECK=(FIELD,INITIAL,OPTIMIZE)/LIS=LIS$:LOEMPH/OBJ=OBJ$:LOEMPH MSRC$:LOEMPH/UPDATE=(ENH$:LOEMPH)

; Size:         895 code + 110 data bytes
; Run Time:       00:46.6
; Elapsed Time:   01:37.1
; Lines/CPU Min:   1188
; Lexemes/CPU-Min: 88197
; Memory Used:  294 pages
; Compilation Complete
```