LABEL 000000000PRINTER0017510OCC EX OBJECT/READ;FILE SOURCEFILE=SYMBOL/DC1000←←0000000 OBJECT /READ

SYMBOL/DC1000

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33442

```
COMMENT: * TITLE: B5500/B5700 MARK XIV SYSTEM RELEASE                    *     00000100
         * FILE ID: SYMBOL/DC1000  TAPE ID: SYMBOL2/FILE000              *     00000101
         * THIS MATERIAL IS PROPRIETARY TO BURROUGHS CORPORATION         *     00000102
         * AND IS NOT TO BE REPRODUCED, USED, OR DISCLOSED               *     00000103
         * EXCEPT IN ACCORDANCE WITH PROGRAM LICENSE OR UPON             *     00000104
         * WRITTEN AUTHORIZATION OF THE PATENT DIVISION OF               *     00000105
         * BURROUGHS CORPORATION, DETROIT, MICHIGAN 48232                *     00000106
         *                                                               *     00000107
         * COPYRIGHT (C) 1972 BURROUGHS CORPORATION                      *     00000108
         *                                                               *;    00000109
BEGIN                                                                          00001000
DEFINE                                                                         00002000
        SCANERR          =  0#,                                                00002010
        NONLITNO         =  0#,                                                00002020
        LITERALV         =  1#,                                                00002030
        IDV              =  2#,                                                00002040
        COMMAV           =  3#,                                                00002050
        SEMICOLONV       =  4#,                                                00002060
        EQUALV           =  5#,                                                00002070
        DOLLARV          =  6#,                                                00002080
        PERCENTV         =  7#;                                                00002090
%                                                                              00002100
DEFINE                                                                         00002110
        CHECKBIT         =   1#,                                               00002120
        DEBUGBIT         =   2#,                                               00002130
        EVERLISTBIT      =   3#,                                               00002132
        LISTBIT          =   7#,                                               00002140
        PUNCHBIT         =  17#,                                               00002150
        SINGLBIT         =  22#,                                               00002160
        PRINTERBIT       =  30#,                                               00002170
        READERBIT        =  31#,                                               00002180
        HIGHSPEEDREADERBIT =  32#,                                             00002190
        BCLBIT           =  33#,                                               00002200
        BCLREADERBIT     =  33#,                                               00002210
        BCLPUNCHBIT      =  34#,                                               00002220
        EBCDICBIT        =  35#,                                               00002230
        EBCDICREADERBIT  =  35#,                                               00002240
        EBCDICPUNCHBIT   =  36#,                                               00002250
        SWITCHEDLINEBIT  =  37#,                                               00002260
        LEASEDLINEBIT    =  38#,                                               00002270
        CODEBIT          =  46#,                                               00002280
        CODEPUNCHBIT     =  47#,                                               00002290
        CHECKTOG         = COMMON.[CHECKBIT:1] #,                              00002300
        DEBUGTOG         = COMMON.[DEBUGBIT:1] #,                              00002310
        LISTOG           = COMMON.[LISTBIT:1] #,                               00002320
        PUNCHTOG         = COMMON.[PUNCHBIT:1] #,                              00002330
        SINGLTOG         = COMMON.[SINGLBIT:1] #,                              00002340
        PRINTERTOG       = COMMON.[PRINTERBIT:1]#,                             00002350
        READERTOG        = COMMON.[READERBIT:1]#,                              00002360
        HIGHSPEEDREADERTOG = COMMON.[HIGHSPEEDREADERBIT:1]#,                   00002370
        BCLREADERTOG     =  COMMON.[BCLREADERBIT:1]#,                          00002380
        BCLPUNCHTOG      = COMMON.[BCLPUNCHBIT:1]#,                            00002390
        EBCDICREADERTOG  =  COMMON.[EBCDICREADERBIT:1]#,                       00002400
        EBCDICPUNCHTOG   =  COMMON.[EBCDICPUNCHBIT:1]#,                        00002410
        SWITCHEDLINETOG  =  COMMON.[SWITCHEDLINEBIT:1]#,                       00002420
        LEASEDLINETOG    =  COMMON.[LEASEDLINEBIT:1]#,                         00002430
        CODEPUNCHTOG     =  COMMON.[CODEPUNCHBIT:1]#,                          00002440
        CODETOG          =  COMMON.[CODEBIT:1]#;                               00002450
%                                                                              00007000
%                                                                              00008000
```

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```
BOOLEAN COMMON;                                                          00009000
%                                                                        00010000
%     LAST     LABEL     =     452                                       00011000
%                                                                        00012000
DEFINE                                                                   00013000
     POWERFAIL              =  LAB(0)#,                                  00014000
     MEMORYPARITY           =  LAB(1)#,                                  00015000
     IO0                    =  LAB(2)#,                                  00016000
     IO1                    =  LAB(3)#,                                  00017000
     IO2                    =  LAB(4)#,                                  00018000
     IO3                    =  LAB(5)#,                                  00019000
     INITIALIZE             =  LAB(6)#;                                  00020000
%                                                                        00021000
FILE LINE 18 (3,17),                                                     00022000
     CARD 0 (2,10),                                                      00022100
      REQUEST DISK SERIAL "SYSTEM""REQUEST" (2,15,150),                  00023000
      NIF DISK SERIAL "SYSTEM""NIF" (2,30,150),                          00024000
     CODE DISK SERIAL [20:30] "CODE""DC1000" (2,60,120,SAVE 7);          00025000
%                                                                        00026000
DEFINE                                                                   00027000
          LABLMAX      =      460#;                                      00028000
%                                                                        00029000
REAL ARRAY                                                               00030000
     CBUFF[0:9],                                                         00030100
     ATEMP[0:69],                                                        00030200
     CODEARRAY[0:60],                                                    00031000
     LBUFF[0:14],                                                        00032000
     TEXTARRAY[0:3,0:255],                                               00033000
     ASCII[0:64],                                                        00034000
     L[0:2,0:LABLMAX],                                                   00035000
     PA[0:3,0:256],                                                      00036000
     OUTPOINTER,                                                         00037000
     INPOINTER,                                                          00038000
     SENARRAY,                                                           00039000
     FUNARRAY[0:63];                                                     00040000
%                                                                        00041000
REAL                                                                     00042000
     PRINTERLINELENGTH,                                                  00042100
     READERDEFAULT,                                                      00042200
     PUNCHDEFAULT,                                                       00042300
     MEMORY,                                                             00042400
     TIME1,                                                              00042500
     LOC,                                                                00043000
     JUNK,                                                               00044000
     JUNK1,                                                              00045000
     JUNK2,                                                              00046000
     I,                                                                  00047000
     II,                                                                 00048000
     J,                                                                  00049000
     K,                                                                  00050000
     Z,                                                                  00051000
     A,                                                                  00052000
     C,                                                                  00053000
     X,                                                                  00054000
     P,                                                                  00055000
     B,                                                                  00056000
     D,                                                                  00057000
     Y,                                                                  00058000
     Q,                                                                  00059000
     F;                                                                  00060000
```

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```
%                                                                    00061000
INTEGER                                                              00062000
    IJUNK,                                                           00063000
    RECORDS,                                                         00064000
    LASTCODEINX,                                                     00065000
    PASSES,                                                          00066000
    ERRORNUMBER,                                                     00067000
    PRECISION,                                                       00068000
    ERRORS,                                                          00069000
    CODEINX,                                                         00070000
    NEXTPOOL;                                                        00071000
%                                                                    00072000
BOOLEAN                                                              00073000
    NOHEADING,                                                       00073100
    FIRSTPASS,                                                       00074000
    LASTPASS,                                                        00075000
    STOP,                                                            00076000
    LISTING;                                                         00077000
%                                                                    00078000
LABEL                                                                00079000
    PUNCHONLY;                                                       00080000
%                                                                    00081000
%                                                                    00082000
DEFINE                                                               00083000
    POOL(POOL1)                 =  PA[0,POOL1]#,                     00084000
    POOLADDRESS(POOLADDRESS1)   =  PA[1,POOLADDRESS1]#,              00085000
    POOLUSE(POOLUSE1)           =  PA[2,POOLUSE1]#,                  00086000
    EMITVAL(EMITVAL1)           =  PA[3,EMITVAL1]#,                  00087000
    LABLARRAY(LABLARRAY1)       =  L[0,LABLARRAY1]#,                 00088000
    LABLS(LABLS1)               =  L[0,LABLS1]#,                     00089000
    LABLUSE(LABLUSE1)           =  L[1,LABLUSE1]#;                   00090000
%                                                                    00091000
DEFINE                                                               00092000
    CLEARLINE                   =  CLEAN(LBUFF[0])#;                 00093000
%                                                                    00094000
DEFINE                                                               00095000
    LITPRINT                    =  0#,                               00096000
    OPPRINT                     =  2#,                               00097000
    HEADINGPRINT                =  4#,                               00098000
    PRINTERRORS                 =  INKIT(0,0,5,0)#,                  00099000
    SKIPPAGE                    =  INKIT(0,1,6,0)#,                  00100000
    DOUBLESPACE                 =  INKIT(0,2,6,0)#,                  00101000
    SKIPLINE                    =  INKIT(0,3,6,0)#,                  00102000
    WRITESTARS                  =  INKIT(0,4,6,0)#,                  00103000
    REGBASE                     =  192#,                             00104000
    STARSFORM                   =  TEXTARRAY[2,212]#,                00105000
    ERROW                       =  3#,                               00106000
    ERRSIZE                     =  4#,                               00107000
    ERRBASE                     =  189#,                             00108000
    ERRORMAX                    =  10#,                              00109000
    SCRATCH                     =  230#;                             00110000
%                                                                    00111000
DEFINE          % FOR USE IN TYPE FUNCTIONS AND ADDRESS CALCULATION  00112000
    SIGNS                       =  1#,                               00113000
    SIGNL                       =  1#,                               00114000
    PHYSICALADDRESSS            =  1#,                               00115000
    PHYSICALADDRESSL            =  15#,                              00116000
    SECTORS                     =  3#,                               00117000
    SECTORL                     =  5#,                               00118000
    SIZES                       =  8#,                               00119000
```

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```
SIZEL                    =  3#,                                          00120000
ERRORSS                  =  11#,                                         00121000
ERRORL                   =  1#,                                          00122000
TYPES                    =  11#,                                         00123000
TYPEL                    =  5#,                                          00124000
PRECISIONMASKS           =  16#,                                         00125000
PRECISIONMASKL           =  4#,                                          00126000
LABLINDEXS               =  16#,                                         00127000
LABLINDEXL               =  10#,                                         00128000
SECTORUSEMASKS           =  16#,                                         00129000
SECTORUSEMASKL           =  32#,                                         00130000
LITERALS                 =  17#,                                         00131000
LITERALL                 =  31#,                                         00132000
PRECISIONUSEDS           =  28#,                                         00133000
PRECISIONUSEDL           =  4#,                                          00134000
ADDRESSS                 =  32#,                                         00135000
ADDRESSL                 =  16#,                                         00136000
SIGN                     =  [SIGNS:SIGNL]#,                              00137000
PHYSICALADDRESS          =  [PHYSICALADDRESSS:PHYSICALADDRESSL]#,        00138000
SECTOR                   =  [SECTORS:SECTORL]#,                          00139000
SIZE                     =  [SIZES:SIZEL]#,                              00140000
ERROR                    =  [ERRORSS:ERRORL]#,                           00141000
TYPE                     =  [TYPES:TYPEL]#,                              00142000
PRECISIONMASK            =  [PRECISIONMASKS:PRECISIONMASKL]#,            00143000
LABLINDEX                =  [LABLINDEXS:LABLINDEXL]#,                    00144000
SECTORUSEMASK            =  [SECTORUSEMASKS:SECTORUSEMASKL]#,            00145000
LITERAL                  =  [LITERALS:LITERALL]#,                        00146000
PRECISIONUSED            =  [PRECISIONUSEDS:PRECISIONUSEDL]#,            00147000
ADDRESS                  =  [ADDRESSS:ADDRESSL]#,                        00148000
TYPELITERAL      =  1#,                                                  00149000
TYPEREGISTER     =  2#,                                                  00150000
USEIT            =  3#,                                                  00151000
TYPELABL         =  12#,                                                 00152000
TYPEREFERENCED   =  8#,                                                  00153000
TYPELABLERROR    =  28#;                                                 00154000
%                                                                        00155000
%    ERROR TYPES                                                         00156000
%          1     MULTIPLY DEFINED LABEL                                  00157000
%          2     UNDEFINED LABEL                                         00158000
%          4     LABEL LOCATION CONFLICT                                 00159000
%          8     LABEL ASSIGNMENT ERROR                                  00160000
%         16     POSSIBLE OPERAND SIZE ERROR                             00161000
%         32     INDEXED OPERAND ERROR                                   00162000
%         64     ILLEGAL REGISTER TYPE                                   00163000
%        128     INSUFFICIENT MEMORY                                     00164000
%        256     LITERAL PASS MISMATCH                                   00165000
%        512     ADDRESSABILITY ERROR                                    00166000
%                                                                        00167000
PROCEDURE DATIME;                                                        00167100
    BEGIN                                                                00167105
    INTEGER H,MIN,Q; ALPHA N1,N2;                                        00167110
    ALPHA STREAM PROCEDURE DATER(DATE); VALUE DATE;                      00167115
        BEGIN                                                            00167120
        DI:=LOC DATER; SI:=LOC DATE; SI:=SI+2;                           00167125
        2(DS:=2 CHR; DS:=LIT"/"); DS:=2 CHR;                             00167130
        END OF DATER;                                                    00167135
    H:=TIME1 DIV 216000; MIN:=(TIME1 DIV 3600) MOD 60;                   00167140
    N1:=CODE.MFID; N2:=CODE.FID;                                         00167145
    WRITE(LINE,                                                          00167150
        <X22,"BURROUGHS B-5700 DC1000 PROGRAM GENERATOR MARK ",          00167155
```

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```
"XIII.12"
                ,"  ",A6,"DAY, ",O,",  ",I2,":",A2,X1,A3,                    00167160
               ////X45,A1,A6,"/",A1,A6,/X45,15("=")//>,                       00167165
                TIME(6),DATER(TIME(5)),12*REAL(Q:=H MOD 12=0)+Q,             00167170
                Q:=MIN MOD 10+(MIN DIV 10)*64,                               00167175
                IF H≥12 THEN "PM." ELSE "AM.",                               00167180
                N1.[6:6],N1,N2.[6:6],N2);                                    00167185
        NOHEADING:=FALSE;                                                    00167190
        END OF DATIME;                                                       00167195
    %                                                                        00167200
    %                                                                        00168000
    REAL PROCEDURE HEX(N); VALUE N; REAL N; FORWARD;                         00169000
    PROCEDURE DUMPER (A,L1,L2);                                              00170000
        VALUE L1,L2;                                                         00171000
        ARRAY A[*,*];                                                        00172000
        INTEGER L1,L2;                                                       00173000
    BEGIN                                                                    00174000
    INTEGER I,J,K;                                                           00175000
    ARRAY T[0:15];                                                           00176000
    STREAM PROCEDURE SPLIT(S,D,L);                                           00177000
    VALUE L;                                                                 00178000
    BEGIN                                                                    00179000
    SI:=S; DI:=D;                                                            00180000
    L(DI:=DI+4; DS:=4 CHR; DI:=DI+4; DS:=4 CHR);                             00181000
    END;                                                                     00182000
    FORMAT OT(I5,X5,8(A6,X1,A6,X4));                                         00183000
    FOR I:=0 STEP 1 UNTIL L1 DO                                              00184000
    BEGIN                                                                    00185000
    WRITE(LINE[DBL]);                                                        00186000
    WRITE(LINE,<X5,"ROW =",I5>,I);                                           00187000
    FOR J:=0 STEP 6 WHILE J ≤ L2 DO                                          00188000
    BEGIN                                                                    00189000
    SPLIT(A[I,J],T,IF J+6 > L2 THEN L2-J+1 ELSE 6);                          00190000
    FOR K:=0 STEP 1 UNTIL 15 DO T[K]:=HEX(T[K]);                             00191000
    IF J+6 > L2 THEN FOR K:=2*(L2-J+1) STEP 1 UNTIL 15 DO T[K]:="      ";     00192000
    WRITE(LINE,OT,J,FOR K:=0 STEP 1 UNTIL 11 DO T[K]);                       00193000
    END;                                                                     00194000
    END;                                                                     00195000
    END;                                                                     00196000
    PROCEDURE INKIT(WHAT,SZ,FORM,LC);                                        00197000
        VALUE WHAT,SZ,FORM,LC;                                               00198000
        REAL WHAT,SZ,FORM,LC;     FORWARD;                                   00199000
    %                                                                        00200000
    PROCEDURE EMIT(VAL,NUMBER,TYP);                                          00201000
        VALUE VAL,NUMBER,TYP;                                                00202000
        REAL VAL,NUMBER,TYP;      FORWARD;                                   00203000
    %                                                                        00204000
    %                                                                        00205000
    %                                                                        00206000
    %                                                                        00207000
    %       ERR CAUSES AN ERROR OF TYPE X TO BE RECORDED,                    00208000
    %       THEN CAUSES ANY ERRORS COLLECTED TO BE PRINTED                   00209000
    %                                                                        00210000
    PROCEDURE ERR(X);                                                        00211000
        VALUE X;                                                             00212000
        REAL X;                                                              00213000
        BEGIN                                                                00214000
            ERRORNUMBER:=REAL(BOOLEAN(ERRORNUMBER) OR BOOLEAN(X));           00215000
            ERRORS := ERRORS + 1;                                            00216000
            PRINTERRORS;                                                     00217000
        END;                                                                 00218000
```

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```
%                                                                       00219000
%                                                                       00220000
%       FLAG RECORDS AN ERROR OF TYPE X FOR LATER PRINTING              00221000
%                                                                       00222000
PROCEDURE FLAG(X);                                                      00223000
    VALUE X;                                                            00224000
    REAL X;                                                             00225000
    BEGIN                                                               00226000
        ERRORNUMBER:=REAL(BOOLEAN(ERRORNUMBER) OR BOOLEAN(X));          00227000
        ERRORS := ERRORS + 1;                                           00228000
    END;                                                                00229000
%                                                                       00230000
%                                                                       00231000
%       LOCATE SETS THE LOCATION COUNTER LOC TO POS.                    00232000
%                                                                       00233000
PROCEDURE LOCATE(POS);                                                  00234000
    VALUE POS;                                                          00235000
    INTEGER POS;                                                        00236000
    LOC.ADDRESS:=POS;                                                   00237000
%                                                                       00238000
%                                                                       00239000
%       LABL PLACES LABL[INX] AT THE CURRENT LOCATION                   00240000
%       COUNTER                                                         00241000
%                                                                       00242000
PROCEDURE LABL(INX);                                                    00243000
    VALUE INX;                                                          00244000
    INTEGER INX;                                                        00245000
    IF FIRSTPASS THEN                                                   00246000
        BEGIN                                                           00247000
            IF INX.TYPE ≠ TYPEREFERENCED THEN                           00248000
                LABLS[INX.LABLINDEX]:=REAL(BOOLEAN(INX &                00249000
                    (TYPELABLERROR)TYPE) OR TRUE)                       00250000
            ELSE                                                        00251000
                BEGIN                                                   00252000
                    LABLS[INX.LABLINDEX]:=INX & (TYPELABL)TYPE;         00253000
                    LABLUSE[INX.LABLINDEX]:=LABLUSE[INX.LABLINDEX] &    00254000
                                        LOC.ADDRESS PHYSICALADDRESS;    00255000
                END                                                     00256000
        END                                                             00257000
    ELSE                                                                00258000
        IF LASTPASS THEN                                                00259000
            BEGIN                                                       00260000
                SKIPLINE;                                               00261000
                IF LABLUSE[INX.LABLINDEX].PHYSICALADDRESS ≠             00262000
                    LOC.ADDRESS OR INX.TYPE ≠ TYPELABL THEN             00263000
                  BEGIN                                                 00264000
                      ERR(8);                                           00265000
                      IF INX.TYPE ≠ TYPELABLERROR THEN                  00266000
                      LABLS[INX.LABLINDEX]:=REAL(BOOLEAN(INX &          00267000
                          (TYPELABLERROR)TYPE) AND NOT TRUE);           00268000
                  END                                                   00269000
            END                                                         00270000
        ELSE                                                            00271000
            LABLUSE[INX.LABLINDEX].PHYSICALADDRESS:=LOC;                00272000
%                                                                       00273000
%                                                                       00274000
%       LAB IS A MEANS OF REFERENCING LABL[INX] SO                      00275000
%       THAT ITS ADDRESS CAN BE USED IN GENERATING                      00276000
%       CODE                                                            00277000
%                                                                       00278000
```

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```
REAL PROCEDURE LAB(INX);                                                    00279000
    VALUE INX;                                                              00280000
    REAL INX;                                                               00281000
    IF LASTPASS THEN                                                        00282000
    BEGIN                                                                   00283000
        LAB:=LABLS[INX];                                                    00284000
    END                                                                     00285000
    ELSE                                                                    00286000
    BEGIN                                                                   00287000
        LABLUSE[INX]:=LABLUSE[INX] & (1)[47-LOC,[33:5]:47:1];               00288000
        LAB:=LABLARRAY[INX];                                                00289000
    END OF LAB;                                                             00290000
%                                                                           00291000
%                                                                           00292000
%       STORAGE DECLARES STORAGE AREAS OF NUMBER ELEMENTS                   00293000
%       OF SIZE SZ WITH INITIAL VALUES IF LITVAL, AND                       00294000
%       A BASE ADDRESS AT LABL[INX]                                         00295000
%                                                                           00296000
PROCEDURE STORAGE(INX,LITVAL,SZ,NUMBER);                                    00297000
    VALUE INX,LITVAL,SZ,NUMBER;                                             00298000
    INTEGER INX,LITVAL,SZ,NUMBER;                                           00299000
    BEGIN                                                                   00300000
    IF INX ≠ 0 THEN LABL(INX);                                              00301000
    FOR INX:=1 STEP 1 UNTIL NUMBER DO                                       00302000
        IF LASTPASS THEN                                                    00303000
            EMIT(LITVAL,IF SZ = 0 THEN PRECISION ELSE SZ,LITPRINT)          00304000
        ELSE  LOC:=LOC+(IF SZ = 0 THEN PRECISION ELSE SZ);                  00305000
    END OF STORAGE;                                                         00306000
%                                                                           00307000
%                                                                           00308000
%       LIT ALLOWS ONE TO REFERENCE A LITERAL WITHOUT                       00309000
%       RESERVING A LOCATION AND STORING IT THERE.                          00310000
%       ATTEMPTS ARE MADE TO OPTIMIZE THE USE OF                            00311000
%       MEMORY                                                              00312000
%                                                                           00313000
REAL PROCEDURE LIT(VAL);                                                    00314000
    VALUE VAL;                                                              00315000
    REAL VAL;                                                               00316000
    BEGIN                                                                   00317000
        LABEL FOUND;                                                        00318000
    FOR I:=0 STEP 1 WHILE I < NEXTPOOL DO                                   00319000
    IF POOL[I] = VAL THEN GO TO FOUND;                                      00320000
    IF LASTPASS THEN FLAG(256);                                             00321000
    POOL[NEXTPOOL]:=VAL;                                                    00322000
    NEXTPOOL:=NEXTPOOL+1;                                                   00323000
FOUND:  IF LASTPASS THEN                                                    00324000
        LIT := (VAL := POOLADDRESS[I]).ADDRESS + VAL.SIZE - PRECISION       00325000
    ELSE                                                                    00326000
    BEGIN                                                                   00327000
        POOLUSE[I]:=POOLUSE[I] & (1)[47-LOC,[33:5]:47:1];                   00328000
        POOLADDRESS[I]:=POOLADDRESS[I] & (1)[PRECISIONUSEDS+4-PRECISION     00329000
                                            :47:1];                         00330000
    END;                                                                    00331000
    END OF LIT;                                                             00332000
%                                                                           00333000
%       HEX RETURNS THE HEX REPRESENTATION OF THE RIGHT HALF                00334000
%       OF N                                                                00335000
%                                                                           00336000
REAL PROCEDURE HEX(N);  VALUE N; REAL N;                                    00337000
    HEX:=REAL(BOOLEAN(                                                      00338000
```

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```
            (N:=N.[44:4] & N[38:40:4] & N[32:36:4] & N[26:32:4] &                00339000
                N[20:28:4] & N[14:24:4]) + "666666")                             00340000
                AND BOOLEAN("+++++++")).[12:32] x 7 + N;                         00341000
    %                                                                            00342000
    %                                                                            00343000
    %       CLEAN CLEARS THE ARRAY POINTED TO BY DEST TO BLANKS                  00344000
    %       FOR 15 WORDS                                                         00345000
    %                                                                            00346000
    STREAM PROCEDURE CLEAN(DEST);                                                00347000
        BEGIN                                                                    00348000
            DI:=DEST;  DS:= 8 LIT " ";                                           00349000
            SI:=DEST;   DS:= 14 WDS;                                             00350000
        END;                                                                     00351000
    %                                                                            00352000
    %                                                                            00353000
    %       OUTPUT FORMATS INFORMATION IN BUFF.  CONTAINED IS THE                00354000
    %       INSTRUCTION COUNTER(LOCATION)  THE QUANTITY(WHAT) OF SIZE            00355000
    %       SZ AND THE TEXT POINTER TO BY TP IS COPIED FOR 7xSIZE                00356000
    %       CHARACTERS.   THIS PROCEDURE IS USED FOR FORMATING LINE              00357000
    %       PRINTER OUTPUT.                                                      00358000
    %                                                                            00359000
    STREAM PROCEDURE OUTPUT(BUFF,LOCATION,WHAT,SZ,TP,SIZE);                      00360000
        VALUE LOCATION,WHAT,SZ,SIZE;                                             00361000
        BEGIN                                                                    00362000
            LOCAL T;                                                             00363000
            LABEL L1,L2;                                                         00364000
        DI:=BUFF;   DI:=DI+5;                                                    00365000
        SI:=LOC LOCATION;   SI:=SI+4;                                            00366000
        DS:=4 CHR;                                                               00367000
        DI:=DI+4;   SI:=LOC SZ;                                                  00368000
        SI:=SI-SZ;   SI:=SI-SZ;                                                  00369000
        TALLY:=4;   SZ(TALLY:=TALLY+63);                                         00370000
        T:=TALLY;                                                                00371000
        DI:=DI+T;   DI:=DI+T;                                                    00372000
        DS:=SZ CHR;   DS:=SZ CHR;                                                00373000
        CI:=CI+SIZE;                                                             00374000
        GO TO L1;                                                                00375000
        GO TO L2;                                                                00376000
        GO TO L2;                                                                00377000
        GO TO L2;                                                                00378000
    L2: DI:=DI+10;   SI:=TP;                                                     00379000
        SIZE(SI:=SI+1;   DS:=7 CHR);                                             00380000
    L1:                                                                          00381000
        END;                                                                     00382000
    %                                                                            00383000
    %                                                                            00384000
    %       COPY MOVES STUFF TO BUFF ACCORDING TO TYP.  THIS IS USED             00385000
    %       FORMAT MISCELLANEOUS OUTPUT TO THE PRINTER.                          00386000
    %                                                                            00387000
    STREAM PROCEDURE COPY(DEST,STUFF,TYP);                                       00388000
        VALUE STUFF,TYP;                                                         00389000
        BEGIN                                                                    00390000
            LABEL T0,T1,T2,T3,EXIT;                                              00391000
        DI:=DEST;   SI:=LOC STUFF;                                               00392000
        CI:=CI+TYP;                                                              00393000
        GO TO T0;                                                                00394000
        GO TO T1;                                                                00395000
        GO TO T2;                                                                00396000
        GO TO T3;                                                                00397000
    T0: SI:=SI+4;   DI:=DI+3;   DS:= 4 CHR;   GO TO EXIT;                        00398000
```

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```
T1: SI:=SI+5;   DI:=DI+4;   DS:= 3 CHR;   GO TO EXIT;                    00399000
T2: SI:=SI+6;   DI:=DI+5;   DS:= 2 CHR;   GO TO EXIT;                    00400000
T3: SI:=SI+1;   DS:= 7 CHR;   GO TO EXIT;                                00401000
EXIT:                                                                    00402000
    END;                                                                 00403000
%                                                                        00404000
%                                                                        00405000
%       PRINTREG PRINTS THE REGISTERS USED IN TWO BYTE OPERATIONS        00406000
%       THAT INVOLVE REGISTER TO REGISTER OPERATIONS.  THE MODE IS       00407000
%       TAKEN INTO ACCOUNT IN INKIT THE REGISTER, SO THAT ONE WILL       00408000
%       KNOW WHAT ACTUAL REGISTER IS BEING REFERENCED.                   00409000
%                                                                        00410000
PROCEDURE PRINTREG(VAL);                                                 00411000
    VALUE VAL;                                                           00412000
    REAL VAL;                                                            00413000
    BEGIN                                                                00414000
        COPY(LBUFF[8],TEXTARRAY[2,REGBASE+(VAL MOD 16)],3);              00415000
        COPY(LBUFF[7],TEXTARRAY[2,REGBASE+(VAL DIV 16)],3);              00416000
    END;                                                                 00417000
%                                                                        00418000
%                                                                        00419000
%       PRINTADDRESS PRINTS THE ADDRESS USED BY AN OPERATOR OF           00420000
%       SIZE SZ AND OPERATION CODE OF WHAT.                              00421000
%                                                                        00422000
PROCEDURE PRINTADDRESS(WHAT,SZ);                                         00423000
    VALUE WHAT,SZ;                                                       00424000
    REAL WHAT,SZ;                                                        00425000
BEGIN                                                                    00426000
    IF SZ = 3 THEN COPY(LBUFF[7],HEX(WHAT),0)                            00427000
        ELSE                                                             00428000
          COPY(LBUFF[7],HEX(IF BOOLEAN(WHAT.[35:1]) THEN WHAT.[38:10]    00429000
                ELSE WHAT.[36:12]),1);                                   00430000
END;                                                                     00431000
%                                                                        00432000
%                                                                        00433000
%       COPYTEXT MOVES SZ WORDS (7 CHAR/WORD) FROM SOURCE                00434000
%       TO DEXT.                                                         00435000
%                                                                        00436000
STREAM PROCEDURE COPYTEXT(DEST,SOURCE,SZ);                               00437000
    VALUE SZ;                                                            00438000
    BEGIN                                                                00439000
        SI:=SOURCE;   DI:=DEST;                                          00440000
        SZ(SI:=SI+1;   DS:=7 CHR);                                       00441000
    END;                                                                 00442000
%                                                                        00443000
%                                                                        00444000
%       LOOKUP RETURNS INFORMATION ABOUT OPERATION CODE WHAT OF          00445000
%       WHAT AND SIZE SZ SO THAT PRINTER OUTPUT CAN BE MADE.             00446000
%                                                                        00447000
REAL PROCEDURE LOOKUP(WHAT,SZ);                                          00448000
    VALUE WHAT,SZ;                                                       00449000
    REAL WHAT,SZ;                                                        00450000
    BEGIN                                                                00451000
%                                                                        00452000
%    RESULTS                                                             00453000
%       WORD INDEX          [40:8]                                       00454000
%       ROW INDEX           [37:3]                                       00455000
%       SZ                  [34:3]                                       00456000
%       REGISTERS           [16:8]                                       00457000
%                                                                        00458000
```

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```
            REAL SCRATCH;                                                          00459000
            LABEL ONE,TWO,THREE,L1,L2,L3,L4,LL,LL1,LL2,LL3,LL4,LLL,EXIT;           00460000
            SWITCH S:=ONE,TWO,THREE;                                               00461000
            SWITCH SS:=L1,L2,L3,L4;                                                00462000
            SWITCH SSS:=LL1,LL2,LL3,LL4;                                           00463000
            GO TO S[SZ];                                                           00464000
ONE:        LOOKUP:=WHAT+WHAT+4096;      GO TO EXIT;                               00465000
THREE:      LOOKUP:=(2×WHAT.[24:8])&255[16:40:8] & (2)[34:3];                      00466000
            GO TO EXIT;                                                            00467000
TWO:        IF SZ:=WHAT.[32:8] LSS 48 OR SZ GTR 51 THEN                            00468000
                LOOKUP:=(SZ+SZ).[40:8] &                                           00469000
                        (SZ+SZ)[39:39:1] & (2)[34:45:3] &                          00470000
                    (IF SZ GEQ 64 THEN 255 ELSE WHAT.[40:8])[16:40:8]              00471000
            ELSE                                                                   00472000
            BEGIN                                                                  00473000
                GO TO SS[SZ-47];                                                   00474000
            L1: SCRATCH:=OUTPOINTER[WHAT.[40:8] DIV 4];      GO TO LL;             00475000
            L2: SCRATCH:=INPOINTER[WHAT.[40:8] DIV 4];       GO TO LL;             00476000
            L3: SCRATCH:=SENARRAY[WHAT.[40:8] DIV 4];        GO TO LL;             00477000
            L4: SCRATCH:=FUNARRAY[WHAT.[40:8] DIV 4];                              00478000
            LL: GO TO SSS[WHAT.[40:8] MOD 4 + 1];                                  00479000
            LL1: SCRATCH:=3×(SCRATCH.[1:11]);      GO TO LLL;                      00480000
            LL2: SCRATCH:=3×(SCRATCH.[12:12]);     GO TO LLL;                      00481000
            LL3: SCRATCH:=3×(SCRATCH.[24:12]);     GO TO LLL;                      00482000
            LL4: SCRATCH:=3×(SCRATCH.[36:12]);     GO TO LLL;                      00483000
            LLL: LOOKUP:=ENTIER(SCRATCH MOD 192)                                   00484000
                        & ((SCRATCH DIV 192)+2)[37:45:3]                           00485000
                        & (3)[34:45:3];                                            00486000
            END;                                                                   00487000
EXIT:                                                                              00488000
        END OF LOOKUP;                                                             00489000
%                                                                                  00490000
%                                                                                  00491000
%       INKIT PRINTS WHAT OF SIZE SZ ACCORDING TO                                  00492000
%       THE INSTRUCTIONS IN FORM.                                                  00493000
%       THIS IS THE PLACE WHERE THE ACTUAL LINE PRINTING IS DONE                   00494000
%                                                                                  00495000
PROCEDURE INKIT(WHAT,SZ,FORM,LC);                                                  00496000
    VALUE WHAT,SZ,FORM,LC;                                                         00497000
    REAL WHAT,SZ,FORM,LC;                                                          00498000
    IF LISTING THEN                                                                00499000
    BEGIN                                                                          00500000
        INTEGER RSLT;                                                              00501000
        LABEL LIT,PASS,OP,HEADING,ERRS,EXIT,SPECIAL,L1,L2,L3,L4,STOP;              00502000
        SWITCH S := LIT,EXIT,OP,EXIT,PASS,ERRS,SPECIAL,EXIT;                       00503000
        SWITCH SS:=L1,L2,L3,L4;                                                    00504000
%                                                                                  00505000
        GO TO S[FORM+1];                                                           00506000
LIT:    OUTPUT(LBUFF[0],HEX(LOC),                                                  00507000
                IF SZ = 4 THEN HEX(WHAT)&HEX(WHAT.[16:8])[1:37:11]                 00508000
                    ELSE HEX(WHAT),SZ,TEXTARRAY[0,0],0);                           00509000
        GO TO PASS;                                                                00510000
OP:     OUTPUT(LBUFF[0],HEX(LOC),HEX(WHAT),SZ,                                     00511000
                TEXTARRAY[(RSLT:=LOOKUP(WHAT,SZ)).[37:3],                          00512000
                    RSLT.[40:8]],RSLT.[34:3]);                                     00513000
        IF RSLT.[16:8] ≠ 0 THEN                                                    00514000
            IF RSLT.[16:8] = 255 THEN PRINTADDRESS(WHAT,SZ)                        00515000
                ELSE PRINTREG(RSLT.[16:8]);                                        00516000
        IF ERRORNUMBER = 0 THEN GO TO PASS;                                        00517000
        WRITE(LINE,15,LBUFF[*]);                                                   00518000
```

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```
            CLEARLINE;                                                      00519000
ERRS:       FOR I:=0 STEP 1 UNTIL ERRORMAX DO                               00520000
            BEGIN                                                           00521000
                IF BOOLEAN(ERRORNUMBER) THEN                                00522000
                BEGIN                                                       00523000
                    COPYTEXT(LBUFF[9],TEXTARRAY[ERROW,ERRBASE+ERRSIZE*I],00524000
                        ERRSIZE);                                           00525000
                    WRITE(LINE,15,LBUFF[*]);                                00526000
                END;                                                        00527000
                IF ERRORNUMBER:=ERRORNUMBER DIV 2 = 0 THEN GO TO STOP;      00528000
            END;                                                            00529000
            ERRORNUMBER:=0;                                                 00530000
STOP:       CLEARLINE;                                                      00531000
            GO TO EXIT;                                                     00532000
SPECIAL:    GO TO SS[SZ];                                                   00533000
    L1:     WRITE(LINE[PAGE]);      GO TO EXIT;                             00534000
    L2:     WRITE(LINE[DBL]);       GO TO EXIT;                             00535000
    L3:     WRITE(LINE);            GO TO EXIT;                             00536000
    L4:     COPYTEXT(LBUFF[0],STARSFORM,17);                                00537000
PASS:       WRITE(LINE,15,LBUFF[*]);                                        00538000
            CLEARLINE;                                                      00539000
EXIT:                                                                       00540000
        END OF INKIT;                                                       00541000
%                                                                           00542000
%                                                                           00543000
%           HEADING IS USED TO PRINT HEADINGS ON OUTPUT LISTINGS.           00544000
%                                                                           00545000
PROCEDURE HEADING(A1,A2,A3,A4,A5);                                          00546000
    VALUE A1,A2,A3,A4,A5;                                                   00547000
    REAL  A1,A2,A3,A4,A5;                                                   00548000
    BEGIN                                                                   00549000
%                                                                           00550000
        COPYTEXT(LBUFF[1],A1,A5);                                           00551000
        INKIT(0,0,4,0);                                                     00552000
%                                                                           00553000
    END OF HEADING;                                                         00554000
%                                                                           00555000
%                                                                           00556000
%           MOVE IS USED BY THE EMITTER TO PLACE INFORMATION IN THE         00557000
%           CODE FILE.  STUFF OF LENGTH TYPE+1 IS PLACED IN WORD            00558000
%           BEGINNING AT BYTE DTYPE.                                        00559000
%                                                                           00560000
STREAM PROCEDURE MOVE(STUFF,TYP,WORD,DTYPE);                                00561000
    VALUE STUFF,TYP,DTYPE;                                                  00562000
    BEGIN                                                                   00563000
        LABEL L1,L2,L3,L4,LF,D2,D3,D4,D5,D22,D44,DF,T1,T2,T3,FIN;           00564000
    SI:=LOC STUFF;                                                          00565000
    CI:=CI+TYP;                                                             00566000
    GO TO L1;                                                               00567000
    GO TO L2;                                                               00568000
    GO TO L3;                                                               00569000
    SI:=SI+2;   GO TO L4;                                                   00570000
L1: SI:=SI+6;   GO TO L4;                                                   00571000
L2: SI:=SI+5;   SKIP 2 SB;   GO TO LF;                                      00572000
L3: SI:=SI+4;   GO TO LF;                                                   00573000
L4: SKIP 4 SB;                                                              00574000
LF:                                                                         00575000
    DI:=WORD;                                                               00576000
    CI:=CI+DTYPE;                                                           00577000
    GO TO DF;                                                               00578000
```

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```
        GO TO D2;                                                                  00579000
        GO TO D3;                                                                  00580000
        GO TO D4;                                                                  00581000
        GO TO D5;                                                                  00582000
        DI:=DI+6;    GO TO D44;                                                    00583000
D2:     DI:=DI+1;    GO TO D22;                                                    00584000
D3:     DI:=DI+2;    GO TO D44;                                                    00585000
D4:     DI:=DI+4;    GO TO DF;                                                     00586000
D5:     DI:=DI+5;                                                                  00587000
D22:    SKIP 2 DB;   GO TO DF;                                                     00588000
D44:    SKIP 4 DB;                                                                 00589000
DF:                                                                                00590000
        CI:=CI+TYP;                                                                00591000
        GO TO T1;                                                                  00592000
        GO TO T2;                                                                  00593000
        GO TO T3;                                                                  00594000
        32(IF SB THEN DS:=1 SET ELSE DS:=1 RESET; SKIP 1 SB); GO TO FIN;           00595000
T1:     8(IF SB THEN DS:=1 SET ELSE DS:=1 RESET; SKIP 1 SB); GO TO FIN;            00596000
T2:    16(IF SB THEN DS:=1 SET ELSE DS:=1 RESET; SKIP 1 SB); GO TO FIN;            00597000
T3:    24(IF SB THEN DS:=1 SET ELSE DS:=1 RESET; SKIP 1 SB); GO TO FIN;            00598000
FIN:                                                                               00599000
        END OF MOVE;                                                               00600000
%                                                                                  00601000
%                                                                                  00602000
%       SMASH IS USED BY WRITERECORD TO CLEAN UP THE CODEARRAY                     00603000
%       AFTER A RECORD HAS BEEN WRITEN TO DISK.                                    00604000
%                                                                                  00605000
STREAM PROCEDURE SMASH(A,B);                                                       00606000
    BEGIN                                                                          00607000
    DI:=A;   SI:=B;   DS:=1 WDS;   B:=DI;                                          00608000
    DS:=8 LIT "0";   SI:=B;   DS:=56 WDS;                                          00609000
    END;                                                                           00610000
%                                                                                  00611000
%                                                                                  00612000
%       WRITERECORD IS USED TO WRITE THE CURRENT CODEARRAY TO                      00613000
%       DISK.  NOTE THAT THE WRITE IS ONLY DONE OF ANY CODE HAS                    00614000
%       BEEN PUT INTO CODEARRAY SINCE THE LAST CALL ON WRITERECORD.                00615000
%                                                                                  00616000
PROCEDURE WRITERECORD;                                                             00617000
    IF CODEINX ≠ 0 THEN                                                            00618000
        BEGIN                                                                      00619000
        LASTCODEINX:=CODEINX;                                                      00620000
        RECORDS:=RECORDS + 1;                                                      00621000
        WRITE(CODE,60,CODEARRAY[*]);                                               00622000
        SMASH(CODEARRAY[0],CODEARRAY[60]);                                         00623000
        CODEINX:=IF CODEINX LSS 360 THEN 0 ELSE CODEINX-360;                       00624000
        END;                                                                       00625000
%                                                                                  00626000
%                                                                                  00627000
%       EMIT COPIES NUMBER BYTES OF INFORMATION FROM VAL TO                        00628000
%       THE CODEARRAY, AND PRINTS A MESSAGE ACCORDING TO TYP.                      00629000
%                                                                                  00630000
PROCEDURE EMIT(VAL,NUMBER,TYP);                                                    00631000
    VALUE VAL,NUMBER,TYP;                                                          00632000
    REAL VAL,NUMBER,TYP;                                                           00633000
    IF LASTPASS THEN                                                               00634000
    BEGIN                                                                          00635000
        MOVE(VAL,NUMBER-1,CODEARRAY[CODEINX DIV 6],                                00636000
            ENTIER(CODEINX MOD 6));                                                00637000
        IF (CODEINX:=CODEINX+NUMBER) GEQ 360 THEN WRITERECORD;                     00638000
```

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```
            IF LISTING THEN INKIT(VAL,NUMBER,TYP,0);                                00639000
            LOC:=LOC+NUMBER;                                                        00640000
        END                                                                         00641000
        ELSE LOC:=LOC+NUMBER;                                                       00642000
    %                                                                               00643000
    %       EMITCONSTANT EMITS A LITERAL OF SIZE SZ WITH THE VALUE N                00644000
    %       AT THE PRESENT POSITION OF LOC.                                         00645000
    %                                                                               00646000
    PROCEDURE EMITCONSTANT(N,SZ);                                                   00647000
        VALUE N,SZ;                                                                 00648000
            REAL N,SZ;                                                              00649000
        IF N < 0 THEN                                                               00650000
            EMIT((REAL(NOT BOOLEAN(N)).[16:32] + 1),SZ,LITPRINT)                    00651000
        ELSE                                                                        00652000
            EMIT(N,SZ,LITPRINT);                                                    00653000
    %                                                                               00654000
    %       PUNCHER PUNCHES A BCL DECK IN THE FORM EXPECTED BY THE                  00655000
    %       BCL CARD LOADER.                                                        00656000
    %                                                                               00657000
    PROCEDURE PUNCHER;                                                              00658000
        BEGIN                                                                       00659000
            FILE PUNCH 0 (2,10);                                                    00660000
            SAVE ARRAY I[0:59],O[0:79],TEMP[0:4];                                   00661000
            INTEGER OP,IP,SCRATCH,RC,IPL;                                           00662000
            REAL BCC;                                                               00663000
            BOOLEAN TOG;                                                            00664000
            LABEL ENTR;                                                             00665000
            ARRAY PUNCHCODE[0:7];                                                   00666000
    %                                                                               00667000
        STREAM PROCEDURE TRANSFER(S,SD,D,DD,N);                                     00668000
        VALUE SD,DD,N;                                                              00669000
        BEGIN                                                                       00670000
            SI:=S;                                                                  00671000
            SKIP SD SB;                                                             00672000
            DI:=D;                                                                  00673000
            SKIP DD DB;                                                             00674000
    %                                                                               00675000
            N(8( IF SB THEN DS:= 1 SET ELSE DS:= 1 RESET;  SKIP 1 SB;)););          00676000
    %                                                                               00677000
        END;                                                                        00678000
    %                                                                               00679000
        STREAM PROCEDURE UNPACK(S,D);                                               00680000
        BEGIN                                                                       00681000
            SI:=S;                                                                  00682000
            DI:=D;                                                                  00683000
    %                                                                               00684000
            2(40( DS:= 7 LIT "0";  DS:= 3 RESET;                                    00685000
                3(IF SB THEN DS:= 1 SET ELSE DS:= 1 RESET;                          00686000
                    SKIP 1 SB;));));                                                00687000
    %                                                                               00688000
        END;                                                                        00689000
    %                                                                               00690000
    %                                                                               00691000
        STREAM PROCEDURE PACK(A);                                                   00692000
        BEGIN                                                                       00693000
            SI:=A;                                                                  00694000
            DI:=A;                                                                  00695000
            2(40(SI:=SI + 7;    DS:= 1 CHR;)););                                    00696000
        END;                                                                        00697000
    %                                                                               00698000
```

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```
          FILL PUNCHCODE[*] WITH " ","8","2",OCT14,"0","Y","S","≠";                    00699000
          CODE.AREAS := 0;                                                             00700000
          CODE.AREASIZE := 0;                                                          00701000
1               SEARCH(CODE,I[*]);                                                     00702000
2               READ(CODE [I[5]],2,I[*]);                                              00703000
3               LASTCODEINX := I[0];                                                   00704000
4               RECORDS := I[1];                                                       00705000
5               READ(CODE[0],0,I[*]);                                                  00706000
6     %                                                                                00707000
7          IP := IPL := 360;                                                           00708000
8          LOC := 0;                                                                   00709000
9               GO TO ENTR;                                                          00710000
10         DO                                                                          00711000
11         BEGIN                                                                       00712000
12              IF OP < 30 THEN                                                      00713000
13                   BEGIN                                                          00714000
14                        IF OP = 0 THEN                                            00715000
15                             BEGIN                                                00716000
16                                  OP := 3;                                        00717000
17                                  TRANSFER(LOC,32,TEMP,0,2);                      00718000
18                             END;                                                 00719000
19                        IF IP GEQ IPL THEN                                        00720000
20                             BEGIN                                                00721000
21                                  READ(CODE,60,I[*]);                             00722000
22                                  IP := 0;                                        00723000
23                                  IF (RC := RC + 1) = RECORDS THEN                00724000
24                                       IPL := LASTCODEINX;                        00725000
25                             END;                                                 00726000
26                        TRANSFER(I[IP DIV 6],ENTIER((8 × IP) MOD 48),            00727000
27                             TEMP[OP DIV 6],ENTIER((8 × OP) MOD 48),             00728000
28                             SCRATCH:=MIN(30 - OP,IPL - IP));                    00729000
29                        IP := IP + SCRATCH;                                      00730000
30                        OP := OP + SCRATCH;                                      00731000
31                        LOC := LOC + SCRATCH;                                    00732000
32                   END                                                           00733000
33              ELSE                                                               00734000
34                   BEGIN                                                          00735000
35         ENTR:          UNPACK(TEMP,0);                                          00736000
36                        FOR SCRATCH := 0 STEP 1 UNTIL 79 DO                      00737000
37                             BEGIN                                                00738000
38                                  BCC := REAL(NOT BOOLEAN(BCC) EQV                00739000
39                                       BOOLEAN(O[SCRATCH]));                      00740000
40                                  O[SCRATCH] := PUNCHCODE[O[SCRATCH]];            00741000
41                             END;                                                 00742000
42                        O[7] := PUNCHCODE[BCC,[45:3]];                           00743000
43                        PACK(O);                                                 00744000
44                        WRITE(PUNCH,10,O[*]);                                    00745000
45                        BCC := OP := 0;                                          00746000
46                        FOR SCRATCH := 0 STEP 1 UNTIL 79 DO O[SCRATCH] := 0;     00747000
47                        FOR SCRATCH:=0 STEP 1 UNTIL 4 DO TEMP[SCRATCH] := 0;     00748000
48                   END;                                                          00749000
49         END UNTIL RC = RECORDS AND IP GEQ IPL;                                  00750000
50    %                                                                            00751000
51         IF TOG := NOT TOG THEN GO TO ENTR;                                      00752000
52    %                                                                            00753000
53         END OF PUNCHER;                                                         00754000
54    %                                                                            00755000
55    %         RE FORMATS THE OPCODE FOR AN OPERATOR OF TYPE OP USING             00756000
56    %         REGISTERS A AND B AS SOURCE AND DESTINATION.                       00757000
57    %                                                                            00758000
```

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```
REAL PROCEDURE RE(OP,A,B);                                          00759000
    VALUE OP,A,B;                                                   00760000
    REAL OP,A,B;                                                    00761000
%                                                                   00762000
    BEGIN                                                           00763000
        IF A.TYPE ≠ TYPEREGISTER THEN                               00764000
            BEGIN                                                   00765000
                FLAG(64);                                           00766000
                A:=0;                                               00767000
            END;                                                    00768000
        IF B.TYPE ≠ TYPEREGISTER THEN                               00769000
            BEGIN                                                   00770000
                FLAG(64);                                           00771000
                B:=0;                                               00772000
            END;                                                    00773000
        RE:=B & A[40:4] & OP[32:8];                                 00774000
    END OF RE;                                                      00775000
%                                                                   00776000
%       DREDGER ACCEPTS A DESCRIPTOR(DE) AND A TYPE(FORM) AND       00777000
%       RETURNS AN ADDRESS.                                         00778000
%                                                                   00779000
REAL PROCEDURE DREDGER(DE,FORM);                                    00780000
    VALUE DE,FORM;                                                  00781000
    REAL DE,FORM;                                                   00782000
%                                                                   00783000
    CASE FORM OF                                                    00784000
    BEGIN                                                           00785000
%                                                                   00786000
    IF DE.TYPE = 0 THEN DREDGER:=LIT(DE).[36:12]                    00787000
    ELSE                                                            00788000
    IF DE.TYPE = TYPELABL THEN                                      00789000
        IF DE.ADDRESS = LABLS[FORM:=DE.LABLINDEX].ADDRESS THEN      00790000
            BEGIN                                                   00791000
                IF DE.SECTOR LSS 4 THEN                             00792000
                    DREDGER:=(IF DE.ADDRESS = LABLUSE[FORM].        00793000
                                            PHYSICALADDRESS THEN    00794000
                        DE.[36:12] ELSE (LABLUSE[FORM].             00795000
                                            PHYSICALADDRESS).[36:12])00796000
                ELSE                                                00797000
                IF DE.SECTOR = LOC.[33:5] AND LOC.[40:8] ≠ 255 THEN 00798000
                    DREDGER:=4096 + (LABLUSE[DE.LABLINDEX]          00799000
                        .PHYSICALADDRESS).[38:10]                   00800000
                ELSE                                                00801000
                BEGIN                                               00802000
                    DREDGER:=71o8 + DE.[38:10];                     00803000
                    L[1,FORM] := L[1,FORM] & (1)[SECTORUSEMASKS:1]; 00804000
                END;                                                00805000
            END                                                     00806000
        ELSE                                                        00807000
            BEGIN                                                   00808000
                FORM:=DE.ADDRESS-LABLS[DE.LABLINDEX].ADDRESS;       00809000
                IF (JUNK:=LABLUSE[DE.LABLINDEX].PHYSICALADDRESS)    00810000
                   + FORM < 4096 THEN                               00811000
                    DREDGER:=JUNK+FORM                              00812000
                ELSE                                                00813000
                IF (JUNK + FORM).[33:5] = LOC.[33:5] THEN           00814000
                    DREDGER:= 4096 + (JUNK + FORM).[38:10]          00815000
                ELSE FLAG(512);                                     00816000
            END                                                     00817000
    ELSE                                                            00818000
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```
        IF DE.TYPE = USEIT THEN DREDGER:=DE.[36:12] ELSE                    00819000
        IF DE.TYPE ≠ TYPELABLERROR THEN FLAG(2) ELSE                        00820000
        IF BOOLEAN(DE) THEN FLAG(1) ELSE FLAG(4);                           00821000
    %                                                                       00822000
        IF DE.TYPE = TYPELABL THEN                                          00823000
            IF DE.ADDRESS = LABLS[DE.LABLINDEX].ADDRESS THEN                00824000
                BEGIN                                                       00825000
                    IF DE.SECTOR LSS 4 THEN                                 00826000
                        DREDGER := (IF DE.SIZE LSS 4 THEN DE ELSE           00827000
                                    LABLUSE[DE.LABLINDEX],                  00828000
                                    PHYSICALADDRESS).[36:12]                00829000
                    ELSE                                                    00830000
                    IF DE.SECTOR = LOC.[33:5] AND LOC.[40:8] ≠ 255 THEN     00831000
                        DREDGER:=4096 + (LABLUSE[DE.LABLINDEX]              00832000
                                .PHYSICALADDRESS).[36:10]                   00833000
                    ELSE                                                    00834000
                    BEGIN                                                   00835000
                        DREDGER := 7168 + DE.[38:10];                       00836000
                        L[1,DE.LABLINDEX] := L[1,DE.LABLINDEX] &            00837000
                                (1)[SECTORUSEMASKS:47:1];                   00838000
                    END;                                                    00839000
                END                                                         00840000
            ELSE                                                            00841000
                BEGIN                                                       00842000
                    FORM:=DE.ADDRESS-LABLS[DE.LABLINDEX].ADDRESS;           00843000
                    IF (JUNK:=LABLUSE[DE.LABLINDEX].PHYSICALADDRESS)        00844000
                       + FORM < 4096 THEN                                   00845000
                        DREDGER:=JUNK+FORM                                  00846000
                    ELSE                                                    00847000
                    IF (JUNK + FORM).[33:5] = LOC.[33:5] THEN               00848000
                        DREDGER:= 4096 + (JUNK + FORM).[38:10]              00849000
                    ELSE BEGIN  II := PRECISION;   PRECISION := 2;          00850000
                                DREDGER := 7168 + LIT(DE.ADDRESS);          00851000
                                PRECISION := II;     END;                   00852000
                END                                                         00853000
        ELSE                                                                00854000
        IF DE.TYPE ≠ TYPELABLERROR THEN FLAG(2) ELSE                        00855000
        IF BOOLEAN(DE) THEN FLAG(1) ELSE FLAG(4);                           00856000
    %                                                                       00857000
        IF DE.TYPE = TYPELABL THEN                                          00858000
            DREDGER:=(LABLUSE[DE.LABLINDEX].PHYSICALADDRESS) +              00859000
                    (IF DE.ADDRESS = LABLS[DE.LABLINDEX].ADDRESS THEN 0     00860000
                     ELSE DE.ADDRESS - LABLS[DE.LABLINDEX].ADDRESS)         00861000
        ELSE                                                                00862000
        IF DE.TYPE = 0 THEN DREDGER:=DE.[38:10] ELSE                        00863000
        IF DE.TYPE ≠ TYPELABLERROR THEN FLAG(2) ELSE                        00864000
        IF BOOLEAN(DE) THEN FLAG(1) ELSE FLAG(4);                           00865000
    %                                                                       00866000
        IF DE.TYPE = TYPELABL THEN                                          00867000
            IF DE.SECTOR = 0 THEN                                           00868000
                BEGIN                                                       00869000
                    DREDGER:=6144 + (LABLUSE[DE.LABLINDEX]                  00870000
                                .PHYSICALADDRESS).[38:10] +                 00871000
                                DE.ADDRESS - LABLS[DE.LABLINDEX].ADDRESS;   00872000
                END                                                         00873000
            ELSE FLAG(512)                                                  00874000
        ELSE                                                                00875000
        IF DE.TYPE = 0 THEN                                                 00876000
            DREDGER:=6144 + DE.[38:10]                                      00877000
        ELSE                                                                00878000
```

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```
        FLAG(32);                                                                   00879000
    %                                                                               00880000
        IF DE.TYPE = TYPELABL THEN                                                  00881000
            IF DE.SECTOR = 0 THEN                                                   00882000
                DREDGER := 7168 + (LABLUSE[DE.LABLINDEX]                            00883000
                        .PHYSICALADDRESS).[38:10] +                                 00884000
                        DE.ADDRESS - LABLS[DE.LABLINDEX].ADDRESS                    00885000
            ELSE IF DE.SECTOR = LOC.[33:5] AND LOC.[40:8] ≠ 255 THEN                00886000
                    DREDGER := 5120 + (LABLUSE[DE.LABLINDEX]                        00887000
                            .PHYSICALADDRESS).[38:10] +                             00888000
                            DE.ADDRESS - LABLS[DE.LABLINDEX].ADDRESS                00889000
            ELSE                                                                    00890000
                BEGIN                                                               00891000
                    DREDGER := 7168 + DE.ADDRESS + 2;                               00892000
                    L[0,DE:=DE.LABLINDEX] := L[0,DE] & (1)[1:47:1];                 00893000
                END                                                                 00894000
        ELSE                                                                        00895000
        IF DE.TYPE = 0 THEN                                                         00896000
            BEGIN                                                                   00897000
                IF DE.ADDRESS ≤ 1023 THEN                                           00898000
                    DREDGER := 7168 + DE.ADDRESS                                    00899000
                ELSE FLAG(512);                                                     00900000
            END                                                                     00901000
        ELSE                                                                        00902000
        IF DE.TYPE ≠ TYPELABLERROR THEN FLAG(2) ELSE                                00903000
        IF BOOLEAN(DE) THEN FLAG(1) ELSE FLAG(4);                                   00904000
    %                                                                               00905000
        END OF DREDGER;                                                             00906000
    %                                                                               00907000
    %       DES TAKES THE LABL I AND RETURNS THE ADDRESS OF                         00908000
    %       OF A DESCRIPTOR TO IT.  IF NEED BE, A DESCRIPTOR WILL BE                00909000
    %       EMITTED.                                                                00910000
    %                                                                               00911000
        REAL PROCEDURE DES(I);                                                      00912000
            VALUE I;                                                                00913000
            REAL I;                                                                 00914000
            BEGIN                                                                   00915000
                IF I.TYPE = 0 THEN                                                  00916000
                    DES:=I & (USEIT)TYPE                                            00917000
                ELSE                                                                00918000
                    IF I.TYPE = TYPELABL THEN                                       00919000
                        BEGIN                                                       00920000
                            DES:=I & (USEIT)TYPE;                                   00921000
                            LABLS[I.LABLINDEX].[SIZES:1]:=1;                        00922000
                        END;                                                        00923000
            END OF DES;                                                             00924000
    %                                                                               00925000
    %                                                                               00926000
    %       DECLARATIONS FOR OPERATORS FOLLOW                                       00927000
    %                                                                               00928000
        DEFINE                                                                      00929000
            E1(I)       =  EMIT(I,1,OPPRINT)#,                                      00930000
            E2(I)       =  EMIT(I,2,OPPRINT)#,                                      00931000
            E3(I)       =  EMIT(I,3,OPPRINT)#,                                      00932000
            HLT         =  EMIT(0,1,2)#,                                            00933000
            CST         =  EMIT(1,1,2)#,                                            00934000
            SOV         =  EMIT(2,1,2)#,                                            00935000
            SOVN        =  EMIT(3,1,2)#,                                            00936000
            SOD         =  EMIT(4,1,2)#,                                            00937000
            SODN        =  EMIT(5,1,2)#,                                            00938000
```

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```
        SAN             =  EMIT(6,1,2)#,                                    00939000
        SANN            =  EMIT(7,1,2)#,                                    00940000
        SAZ             =  EMIT(8,1,2)#,                                    00941000
        SAZN            =  EMIT(9,1,2)#,                                    00942000
        SXZ             =  EMIT(10,1,2)#,                                   00943000
        SXZN            =  EMIT(11,1,2)#,                                   00944000
        CLA             =  EMIT(12,1,2)#,                                   00945000
        CMA             =  EMIT(13,1,2)#,                                   00946000
        IAR             =  EMIT(14,1,2)#,                                   00947000
        CIA             =  EMIT(15,1,2)#,                                   00948000
        SP1             =  EMIT(16,1,2);                                    00949000
                           PRECISION:=1#,                                   00950000
        SP2             =  EMIT(17,1,2);                                    00951000
                           PRECISION:=2#,                                   00952000
        SP3             =  EMIT(18,1,2);                                    00953000
                           PRECISION:=3#,                                   00954000
        SP4             =  EMIT(19,1,2);                                    00955000
                           PRECISION:=4#,                                   00956000
        SOF             =  EMIT(20,1,2)#,                                   00957000
        ROF             =  EMIT(21,1,2)#,                                   00958000
        NOP             =  EMIT(22,1,2)#,                                   00959000
        IXO             =  EMIT(23,1,2)#,                                   00960000
        SR1             =  EMIT(24,1,2)#,                                   00961000
        SR8             =  EMIT(25,1,2)#,                                   00962000
        RR1             =  EMIT(26,1,2)#,                                   00963000
        RR8             =  EMIT(27,1,2)#,                                   00964000
        SL1             =  EMIT(28,1,2)#,                                   00965000
        SL8             =  EMIT(29,1,2)#,                                   00966000
        RL1             =  EMIT(30,1,2)#,                                   00967000
        RL8             =  EMIT(31,1,2)#;                                   00968000
    %                                                                       00969000
    PROCEDURE REGOP(I,J,TYP);                                               00970000
            VALUE I,J,TYP;                                                  00971000
            REAL I,J,TYP;                                                   00972000
        EMIT(RE(TYP,I,J),2,2);                                              00973000
    %                                                                       00974000
    DEFINE                                                                  00975000
    %                                                                       00976000
        T(I,J)     =   REGOP(I,J,32)#,                                      00977000
        COMP(I,J)  =   REGOP(I,J,33)#,                                      00978000
        INCR(I,J)  =   REGOP(I,J,34)#,                                      00979000
        DECR(I,J)  =   REGOP(I,J,35)#,                                      00980000
        ANDR(I,J)  =   REGOP(I,J,36)#,                                      00981000
        ORR(I,J)   =   REGOP(I,J,37)#,                                      00982000
        EOR(I,J)   =   REGOP(I,J,38)#,                                      00983000
        ADDR(I,J)  =   REGOP(I,J,39)#;                                      00984000
    %                                                                       00985000
    DEFINE                                                                  00986000
        BRM(I)          =  EMIT((DREDGER(I,ABSADDRESS) & (56)[24:8]),3,2)#, 00987000
        CSQ(I)          =  EMIT((DREDGER(I,ABSADDRESS) & (57)[24:8]),3,2)#; 00988000
    %                                                                       00989000
    DEFINE                                                                  00990000
        STORAGEONLY         =  0#,                                          00991000
        LABLONLY            =  1#,                                          00992000
        ABSADDRESS          =  2#,                                          00993000
        INDEXED             =  8#,                                          00994000
        INDIRECT            =  4#;                                          00995000
    %                                                                       00996000
    PROCEDURE ADDRESSREF(I,TYP);                                            00997000
            VALUE I,TYP;                                                    00998000
```

Data Documents/Inc.

```
        REAL I,TYP;                                                    00999000
    EMIT((DREDGER(I,STORAGEONLY) & TYP[32:3]),2,2);                    01000000
%                                                                      01001000
PROCEDURE GOTO(I);                                                     01002000
        VALUE I;                                                       01003000
        REAL I;                                                        01004000
    EMIT((DREDGER(I,LABLONLY) & (7)[32:3]),2,2);                       01005000
%                                                                      01006000
PROCEDURE INDADDRESS(I,TYP);                                           01007000
        VALUE I,TYP;                                                   01008000
        REAL I,TYP;                                                    01009000
    EMIT((DREDGER(I,INDIRECT) & TYP[32:3]),2,2);                       01010000
%                                                                      01011000
PROCEDURE INXADDRESS(I,TYP);                                           01012000
        VALUE I,TYP;                                                   01013000
        REAL I,TYP;                                                    01014000
    EMIT((DREDGER(I,INDEXED) & TYP[32:3]),2,2);                        01015000
%                                                                      01016000
DEFINE                                                                 01017000
%                                                                      01018000
    DESC(I)         =   ADDRESSREF(DES(I),2)#,                         01019000
    LOAD(I)         =   ADDRESSREF(I,2)#,                              01020000
    ST(I)           =   ADDRESSREF(I,3)#,                              01021000
    ADD(I)          =   ADDRESSREF(I,4)#,                              01022000
    SUB(I)          =   ADDRESSREF(I,5)#,                              01023000
    ANDM(I)         =   ADDRESSREF(I,6)#,                              01024000
%                                                                      01025000
    LOADX(I)        =   INXADDRESS(I,2)#,                              01026000
    STX(I)          =   INXADDRESS(I,3)#,                              01027000
    ADDX(I)         =   INXADDRESS(I,4)#,                              01028000
    SUBX(I)         =   INXADDRESS(I,5)#,                              01029000
    ANDX(I)         =   INXADDRESS(I,6)#,                              01030000
    GOTOX(I)        =   INXADDRESS(I,7)#,                              01031000
%                                                                      01032000
    LOADIND(I)      =   INDADDRESS(I,2)#,                              01033000
    STIND(I)        =   INDADDRESS(I,3)#,                              01034000
    ADDIND(I)       =   INDADDRESS(I,4)#,                              01035000
    SUBIND(I)       =   INDADDRESS(I,5)#,                              01036000
    ANDIND(I)       =   INDADDRESS(I,6)#,                              01037000
    GOTOIND(I)      =   INDADDRESS(I,7)#;                              01038000
%                                                                      01039000
DEFINE                                                                 01040000
    TH              =   12288#,                                        01041000
    TH1             =   12544#,                                        01042000
    TH2             =   12800#,                                        01043000
    TH3             =   13056#,                                        01044000
    MIN             =   EMIT(TH,2,2)#,                                 01045000
    CIS             =   EMIT(TH1,2,2)#,                                01046000
    CIM             =   EMIT(TH1+32,2,2)#,                             01047000
    SIE             =   EMIT(TH2,2,2)#,                                01048000
    SSH             =   EMIT(TH2+112,2,2)#,                            01049000
    SS1             =   EMIT(TH2+32,2,2)#,                             01050000
    SS2             =   EMIT(TH2+64,2,2)#,                             01051000
    SS3             =   EMIT(TH2+128,2,2)#,                            01052000
    IBD             =   EMIT(TH3,2,2)#,                                01053000
    IBE             =   EMIT(TH3+32,2,2)#;                             01054000
%                                                                      01055000
DEFINE                                                                 01056000
    BTO(I)          =   EMIT(TH+I,2,2)#,                               01057000
    BTI(I)          =   EMIT(TH1+I,2,2)#,                              01058000
```

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```
        SEN(I)              =  EMIT(TH2+I,2,2)#,                                01059000
        FUN(I)              =  EMIT(TH3+I,2,2)#;                                01060000
    %                                                                           01061000
    DEFINE                                                                      01062000
            DS1(I)          =  EMITCONSTANT(I,1)#,                              01063000
            DS2(I)          =  EMITCONSTANT(I,2)#,                              01064000
            DS3(I)          =  EMITCONSTANT(I,3)#,                              01065000
            DS4(I)          =  EMITCONSTANT(I,4)#;                              01066000
    %                                                                           01067000
        DEFINE                                                                  01068000
            DA(X)    =  EMIT((LABLUSE[X.LABLINDEX].PHYSICALADDRESS),2,0)#;      01069000
    %                                                                           01070000
    %                                                                           01071000
    %                                                                           01072000
    %                                                                           01073000
    %         MOVER IS USED FOR MOVING SZ WORDS FROM SOURCE TO DEST.            01074000
    %                                                                           01075000
    STREAM PROCEDURE MOVER(SOURCE,DEST,SZ);                                     01076000
        VALUE SZ;                                                               01077000
        BEGIN                                                                   01078000
            LOCAL A;                                                            01079000
            DI:= LOC A;   SI:=LOC SZ;                                           01080000
            SI:=SI+6;   DI:=DI+7;                                               01081000
            DS:= 1 CHR;                                                         01082000
            SI:=SOURCE;    DI:=DEST;                                            01083000
            DS:= S2 WDS;                                                        01084000
            A(DS:= 32 WDS;   DS:=32 WDS);                                       01085000
        END OF MOVER;                                                           01086000
    %                                                                           01087000
    %                                                                           01088000
    %         EMITINTERRUPTCODE EMITS THE FIRST TWELVE BYTES OF CODE            01089000
    %         THAT CONTAINS CALLS ON THE BASIC INTERRUPT ROUTINES.              01090000
    %                                                                           01091000
    %                                                                           01092000
    PROCEDURE EMITINTERRUPTCODE;                                                01093000
        BEGIN                                                                   01094000
            DS2(L[1,6].PHYSICALADDRESS);                                        01095000
            DS2(0);                                                             01096000
            NOP;                                                                01097000
            NOP;                                                                01098000
            HLT;                                                                01099000
            NOP;                                                                01100000
            CSQ(I00);                                                           01101000
            NOP;                                                                01102000
            CSQ(I01);                                                           01103000
            NOP;                                                                01104000
            CSQ(I02);                                                           01105000
            NOP;                                                                01106000
            CSQ(I03);                                                           01107000
        END OF EMIT INTERRUPT CODE;                                             01108000
    %                                                                           01109000
    %                                                                           01110000
    %         ONES COUNTS THE NUMBER OF COUNTEM IN THE RIGHT MOST 32 BITS       01111000
    %         OF A VARIABLE.                                                    01112000
    %                                                                           01113000
    %                                                                           01114000
    REAL STREAM PROCEDURE COUNTEM(X);                                           01115000
        VALUE X;                                                                01116000
        BEGIN                                                                   01117000
            SI:=LOC X;   SI:=SI+2;   SKIP 4 SB;                                 01118000
```

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```
            32(IF SB THEN TALLY:=TALLY+1;   SKIP 1 SB);                    01119000
            COUNTEM:=TALLY;                                                01120000
        END OF COUNTEM;                                                    01121000
    %                                                                      01122000
    %        FIRST IS USED TO FIND THE PRECISION OF A LITERAL.             01123000
    %                                                                      01124000
    INTEGER STREAM PROCEDURE FIRST(X);                                     01125000
        VALUE X;                                                           01126000
        BEGIN;                                                             01127000
            SI:=LOC X;                                                     01128000
            SI:=SI+7;                                                      01129000
            SKIP 2 SB;                                                     01130000
            4(IF SB THEN JUMP OUT ELSE TALLY:=TALLY+1;   SKIP 1 SB;);      01131000
            FIRST:=TALLY;                                                  01132000
        END;                                                               01133000
    %                                                                      01134000
    %                                                                      01135000
    %        EMITDESCRIPTIORANDLITERALS EMITS THE LITERALS USED, AND       01136000
    %        THEN EMITS THE DESCRIPTORS TO STORAGE AREAS AND LABEL         01137000
    %        POINTS.                                                       01138000
    %                                                                      01139000
    %                                                                      01140000
    PROCEDURE DUMPTHECRUD;                                                 01141000
        BEGIN                                                              01142000
            REAL TEMP2;                                                    01143000
        FOR I:= 0 STEP 1 UNTIL LABLMAX DO                                  01144000
        BEGIN                                                              01145000
            IF (TEMP2:=LABLARRAY[I]).TYPE = TYPELABL THEN                  01146000
            BEGIN                                                          01147000
                IF TEMP2 LSS 0 OR TEMP2.SIZE GEQ 4 THEN                    01148000
                BEGIN                                                      01149000
                    LABLS[I].ADDRESS:=LOC;                                 01150000
                    IF LASTPASS THEN                                       01151000
                        EMIT(LABLUSE[I].PHYSICALADDRESS,2,LITPRINT)        01152000
                    ELSE   LOC:=LOC+2;                                     01153000
                    IF TEMP2 LSS 0 THEN                                    01154000
                        BEGIN                                              01155000
                        IF LASTPASS THEN                                   01156000
                            EMIT(32768 + LABLUSE[I].PHYSICALADDRESS,       01157000
                                2,LITPRINT)                                01158000
                        ELSE     LOC := LOC + 2;                           01159000
                        END;                                               01160000
                END                                                        01161000
                ELSE                                                       01162000
                LABLS[I].ADDRESS:=LABLUSE[I].PHYSICALADDRESS;              01163000
            END;                                                           01164000
        END OF DESCRIPTOR EMITTING;                                        01165000
    %                                                                      01166000
        FOR I:=0 STEP 1 WHILE I < NEXTPOOL DO                              01167000
        BEGIN                                                              01168000
        EMITVAL[I]:=POOL[I] & (4-FIRST(POOLADDRESS[I].PRECISIONUSED))SIZE; 01169000
        POOLADDRESS[I]:=POOLADDRESS[I] & LOC ADDRESS &                     01170000
                        LOC,[38:5] SECTOR & EMITVAL[I].SIZE SIZE;          01171000
        IF POOL[I] < 0 THEN                                                01172000
            EMITVAL[I] := EMITVAL[I] &                                     01173000
                        (REAL(NOT BOOLEAN(EMITVAL[I])).[16:32] + 1)        01174000
                                                    [16:32];               01175000
        EMIT(EMITVAL[I],EMITVAL[I].SIZE,LITPRINT);                         01176000
        END OF LITERAL EMITTING;                                           01177000
    %                                                                      01178000
```

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```
        MOVER(LABLUSE[*],L[2,*],LABLMAX+1);                                  01179000
        MOVER(PA[2,*],PA[3,*],NEXTPOOL+1);                                   01180000
        IF NOT LASTPASS THEN FOR I:=6 STEP 1 UNTIL LABLMAX DO                01181000
             LABLUSE[I]:=0;                                                  01182000
    %                                                                        01183000
        END OF EMIT DESCRIPTORS AND LITERALS;                                01184000
    %                                                                        01185000
    %         FEELTHEMADDRESSES EXAMINES THE LABLUSE ENTRIES AND             01186000
    %         DETERMINES WHICH LABLELS AND STORAGE LOCATIONS NEED            01187000
    %         DESCRIPTORS IN THE FIRST PAGE OF MEMORY.                       01188000
    %                                                                        01189000
    PROCEDURE FEELTHEMADDRESSES;                                             01190000
        BEGIN                                                                01191000
    %                                                                        01192000
            FOR I:=0 STEP 1 UNTIL LABLMAX DO                                 01193000
                BEGIN                                                        01194000
                IF JUNK1:=COUNTEM((JUNK:=LABLUSE[I]),SECTORUSEMASK) =01195000
                   0 THEN ELSE                                               01196000
                BEGIN                                                        01197000
                IF JUNK ≠ L[2,I] THEN LASTPASS:=TRUE;                        01198000
                IF JUNK1 = 1 OR JUNK.PHYSICALADDRESS < 4096 THEN             01199000
                     LABLARRAY[I]:=LABLARRAY[I] &                            01200000
                                   JUNK[ADDRESSS+1:PHYSICALADDRESSS:01201000
                                    PHYSICALADDRESSL] &                      01202000
                                   JUNK[SECTORS:PHYSICALADDRESSS:            01203000
                                     SECTORL]                                01204000
                ELSE                                                         01205000
                     LABLARRAY[I]:=LABLARRAY[I] & (1)[SIZES:47:1] &          01206000
                                   JUNK[SECTORS:PHYSICALADDRESSS:5];01207000
                END;                                                         01208000
                END;                                                         01209000
    %                                                                        01210000
            LASTPASS:=NOT LASTPASS;                                          01211000
    %                                                                        01212000
        END OF FEEL THEM ADDRESSES;                                          01213000
    %                                                                        01214000
    %                                                                        01215000
    %                                                                        01216000
    %         KICKITALLOFF IS USED FOR SETTING UP THE INITIAL CONDITIONS     01217000
    %         IN PREPARATION FOR THE FIRST PASS.                             01218000
    %                                                                        01219000
    PROCEDURE KICKITALLOFF;                                                  01220000
        BEGIN                                                                01221000
    %                                                                        01222000
            FIRSTPASS:=TRUE;                                                 01223000
    %                                                                        01224000
            Z:= 0 & TYPEREGISTER TYPE;                                       01225000
            A:= 1 & TYPEREGISTER TYPE;                                       01226000
            C:= 2 & TYPEREGISTER TYPE;                                       01227000
            X:= 3 & TYPEREGISTER TYPE;                                       01228000
            P:= 4 & TYPEREGISTER TYPE;                                       01229000
            B:= 5 & TYPEREGISTER TYPE;                                       01230000
            D:= 6 & TYPEREGISTER TYPE;                                       01231000
            Y:= 7 & TYPEREGISTER TYPE;                                       01232000
            Q:= 8 & TYPEREGISTER TYPE;                                       01233000
            F:= 9 & TYPEREGISTER TYPE;                                       01234000
    %                                                                        01235000
            LOC:= 0 & TYPELABL TYPE & (1)SIZE;                               01236000
    %                                                                        01237000
            FOR I:=0 STEP 1 UNTIL LABLMAX DO                                 01238000
```

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```
                LABLARRAY[I]:= 0 & I LABLINDEX & TYPEREFERENCED TYPE;
%
    FILL ASCII[*] WITH
        48,49,50,51,52,53,54,55,56,57,35,64,63,58,62,33,43,65,66,67,
        68,69,70,71,72,73,46,91,38,40,60,94,92,74,75,76,77,78,79,80,
        81,82,36,42,45,41,59,39,32,47,83,84,85,86,87,88,89,90,44,37,
        94,61,93,34,126;
%
        EMITINTERRUPTCODE;
    END OF KICKITALLOFF;
%
%
%       FINALLY IS USED FOR SETTING UP THE INITIL
%       CONDITIONS NEEDED FOR THE FINAL PASS.
%
PROCEDURE FINALLY;
    BEGIN
%
        CLEARLINE;
        ERRORNUMBER:=0;
        ERRORS := 0;
        LISTING := NOT COMMON.[46:1];
        IF LISTING THEN
            IF NOHEADING THEN DATIME ELSE SKIPPAGE;
%
    IF LISTING THEN
    BEGIN
    FILL TEXTARRAY[0,*] WITH
        "HALT   ","       ","*******"," CST   ",
        "SKIP ON","," OVRFLW","SKIP NO","," OVRFLW",
        "SKIP IF","," ODD   ","SKIP IF","," EVEN  ",
        "SKIP IF","," NEG   ","SKIP IF","," POS   ",
        "SKIP IF","," ZERO  ","SKIP IF","," NONZRO",
        "SKIP IF","," X ZERO","SKIP IF","," X NONZ",
        "CLEAR A","C      ","COMPLEM","ENT AC ",
        "INCREME","NT AC  ","INVERT ","AC     ",
        "*******","," P = 1 ","*******","," P = 2 ",
        "*******","," P = 3 ","*******","," P = 4 ",
        "OVFL = ","TRUE   ","OVFL = ","FALSE  ",
        "NOP    ","       ","INCREME","NT X   ",
        "SHIFT R","T BIT  ","SHIFT R","T BYTE ",
        "ROTATE ","RT BIT ","ROTATE ","RT BYTE",
        "SHIFT L","," BIT   ","SHIFT L","," BYTE  ",
        "ROTATE ","L BIT  ","ROTATE ","L BYTE ",
        "MOVE   ","       ","COMPLEM","ENT    ",
        "INCREME","NT     ","DECREME","NT     ",
        "AND    ","       ","OR     ","       ",
        "EXOR   ","       ","ADD    ","       ",
        "???????","???????","???????","???????",
        "???????","???????","???????","???????",
        "???????","???????","???????","???????",
        "???????","???????","???????","???????",
        "???????","???????","???????","???????",
        "???????","???????","???????","???????",
        "???????","???????","???????","???????",
        "BRANCH ","& MARK ","*******"," CSG   ",
        "???????","???????","???????","???????",
        "???????","???????","???????","???????",
        "???????","???????","???????","???????",
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Data Documents/Inc.

```
                "LOAD   ","        ","LOAD   ","        ",                01295000
                "LOAD   ","        ","LOAD   ","        ",                01296000
                "LOAD   ","        ","LOAD   ","        ",                01297000
                "LOAD   ","        ","LOAD   ","        ",                01298000
                "LOAD   ","        ","LOAD   ","        ",                01299000
                "LOAD   ","        ","LOAD   ","        ",                01300000
                "LOAD   ","        ","LOAD   ","        ",                01301000
                "LOAD   ","        ","LOAD   ","        ",                01302000
                "LOAD RE","LATIVE ","LOAD RE","LATIVE ",                  01303000
                "LOAD RE","LATIVE ","LOAD RE","LATIVE ",                  01304000
                "LOAD IN","D REL  ","LOAD IN","D REL  ",                  01305000
                "LOAD IN","D REL  ","LOAD IN","D REL  ",                  01306000
                "LOAD IN","DEXED  ","LOAD IN","DEXED  ",                  01307000
                "LOAD IN","DEXED  ","LOAD IN","DEXED  ",                  01308000
                "LOAD IN","D 0    ","LOAD IN","D 0    ",                  01309000
                "LOAD IN","D 0    ","LOAD IN","D 0    ",                  01310000
                "STORE  ","        ","STORE  ","        ",                01311000
                "STORE  ","        ","STORE  ","        ",                01312000
                "STORE  ","        ","STORE  ","        ",                01313000
                "STORE  ","        ","STORE  ","        ",                01314000
                "STORE  ","        ","STORE  ","        ",                01315000
                "STORE  ","        ","STORE  ","        ",                01316000
                "STORE  ","        ","STORE  ","        ",                01317000
                "STORE  ","        ","STORE  ","        ",                01318000
                "STORE R","ELATIVE","STORE R","ELATIVE",                  01319000
                "STORE R","ELATIVE","STORE R","ELATIVE",                  01320000
                "STORE I","ND REL ","STORE I","ND REL ",                  01321000
                "STORE I","ND REL ","STORE I","ND REL ",                  01322000
                "STORE I","NDEXED ","STORE I","NDEXED ",                  01323000
                "STORE I","NDEXED ","STORE I","NDEXED ",                  01324000
                "STORE I","ND 0   ","STORE I","ND 0   ",                  01325000
                "STORE I","ND 0   ","STORE I","ND 0   ";                  01326000
%                                                                         01327000
        FILL TEXTARRAY[1,*] WITH                                          01328000
                "ADD    ","        ","ADD    ","        ",                01329000
                "ADD    ","        ","ADD    ","        ",                01330000
                "ADD    ","        ","ADD    ","        ",                01331000
                "ADD    ","        ","ADD    ","        ",                01332000
                "ADD    ","        ","ADD    ","        ",                01333000
                "ADD    ","        ","ADD    ","        ",                01334000
                "ADD    ","        ","ADD    ","        ",                01335000
                "ADD    ","        ","ADD    ","        ",                01336000
                "ADD REL","ATIVE  ","ADD REL","ATIVE  ",                  01337000
                "ADD REL","ATIVE  ","ADD REL","ATIVE  ",                  01338000
                "ADD IND","  REL  ","ADD IND","  REL  ",                  01339000
                "ADD IND","  REL  ","ADD IND","  REL  ",                  01340000
                "ADD IND","EXED   ","ADD IND","EXED   ",                  01341000
                "ADD IND","EXED   ","ADD IND","EXED   ",                  01342000
                "ADD IND","  0    ","ADD IND","  0    ",                  01343000
                "ADD IND","  0    ","ADD IND","  0    ",                  01344000
                "SUB    ","        ","SUB    ","        ",                01345000
                "SUB    ","        ","SUB    ","        ",                01346000
                "SUB    ","        ","SUB    ","        ",                01347000
                "SUB    ","        ","SUB    ","        ",                01348000
                "SUB    ","        ","SUB    ","        ",                01349000
                "SUB    ","        ","SUB    ","        ",                01350000
                "SUB    ","        ","SUB    ","        ",                01351000
                "SUB    ","        ","SUB    ","        ",                01352000
                "SUB REL","ATIVE  ","SUB REL","ATIVE  ",                  01353000
                "SUB REL","ATIVE  ","SUB REL","ATIVE  ",                  01354000
```

Data Documents/Inc.

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                "SUB IND","  REL    ","SUB IND","  REL    ",                01355000
                "SUB IND","  REL    ","SUB IND","  REL    ",                01356000
                "SUB IND","EXED     ","SUB IND","EXED     ",                01357000
                "SUB IND","EXED     ","SUB IND","EXED     ",                01358000
                "SUB IND","  0      ","SUB IND","  0      ",                01359000
                "SUB IND","  0      ","SUB IND","  0      ",                01360000
                "AND     ","        ","AND     ","        ",                01361000
                "AND     ","        ","AND     ","        ",                01362000
                "AND     ","        ","AND     ","        ",                01363000
                "AND     ","        ","AND     ","        ",                01364000
                "AND     ","        ","AND     ","        ",                01365000
                "AND     ","        ","AND     ","        ",                01366000
                "AND     ","        ","AND     ","        ",                01367000
                "AND     ","        ","AND     ","        ",                01368000
                "AND REL","ATIVE    ","AND REL","ATIVE    ",                01369000
                "AND REL","ATIVE    ","AND REL","ATIVE    ",                01370000
                "AND IND","  REL    ","AND IND","  REL    ",                01371000
                "AND IND","  REL    ","AND IND","  REL    ",                01372000
                "AND IND","EXED     ","AND IND","EXED     ",                01373000
                "AND IND","EXED     ","AND IND","EXED     ",                01374000
                "AND IND","  0      ","AND IND","  0      ",                01375000
                "AND IND","  0      ","AND IND","  0      ",                01376000
                "GO TO   ","        ","GO TO   ","        ",                01377000
                "GO TO   ","        ","GO TO   ","        ",                01378000
                "GO TO   ","        ","GO TO   ","        ",                01379000
                "GO TO   ","        ","GO TO   ","        ",                01380000
                "GO TO   ","        ","GO TO   ","        ",                01381000
                "GO TO   ","        ","GO TO   ","        ",                01382000
                "GO TO   ","        ","GO TO   ","        ",                01383000
                "GO TO   ","        ","GO TO   ","        ",                01384000
                "GO TO R","ELATIVE  ","GO TO R","ELATIVE  ",                01385000
                "GO TO R","ELATIVE  ","GO TO R","ELATIVE  ",                01386000
                "GO TO I","ND REL   ","GO TO I","ND REL   ",                01387000
                "GO TO I","ND REL   ","GO TO I","ND REL   ",                01388000
                "GO TO I","NDEXED   ","GO TO I","NDEXED   ",                01389000
                "GO TO I","NDEXED   ","GO TO I","NDEXED   ",                01390000
                "GO TO I","ND 0     ","GO TO I","ND 0     ",                01391000
                "GO TO I","ND 0     ","GO TO I","ND 0     ";               01392000
        %                                                                   01393000
        FILL TEXTARRAY[2,*] WITH                                            01394000
                "???????","???????","???????",                             01395000
                "SPOUT   ","        ","        ",                          01396000
                "$$$$$$$","$$$$$$$","$$$$$$$",                             01397000
                "$$$$$$$","$$$$$$$","$$$$$$$",                             01398000
                "OUTPUT ","SLC      ","        ",                          01399000
                "OUTPUT ","CP       ","        ",                          01400000
                "OUTPUT ","PTP      ","        ",                          01401000
                "NORMAL ","OUTPUT   ","MLC     ",                          01402000
                "OUTPUT ","LP       ","        ",                          01403000
                "SPECIAL","  OUTPUT","  MLC     ",                         01404000
                "OUTPUT ","FORMAT   ","LP      ",                          01405000
                "INPUT S","PO       ","        ",                          01406000
                "$$$$$$$","$$$$$$$","$$$$$$$",                             01407000
                "$$$$$$$","$$$$$$$","$$$$$$$",                             01408000
                "INPUT C","R        ","        ",                          01409000
                "INPUT S","LC       ","        ",                          01410000
                "NORMAL ","INPUT M","LC      ",                           01411000
                "$$$$$$$","$$$$$$$","$$$$$$$",                             01412000
                "$$$$$$$","$$$$$$$","$$$$$$$",                             01413000
                "CR SEN ","ON LINE","        ",                            01414000
```

Data Documents/Inc.

```
        "SLC SEN","REC. BI","T MODE ",                                  01415000
        "CP SEN ","READY  ","       ",                                  01416000
        "PTP SEN"," NOT ST","OPPING ",                                  01417000
        "MLC SEN","       ","       ",                                  01418000
        "LP SEN ","ERROR  ","       ",                                  01419000
        "SPO SEN","OUTPUT ","READY  ",                                  01420000
        "PTR SEN"," DATA R","EADY   ",                                  01421000
        "CR SEN ","MALFUNC","TION   ",                                  01422000
        "SLC SEN"," OUTPUT"," READY ",                                  01423000
        "CP SEN ","READY  ","       ",                                  01424000
        "PTP SEN"," NOT ST","OP CODE",                                  01425000
        "MLC SEN","OUTPUT ","INTRUPT",                                  01426000
        "LP SEN ","END OF ","PAGE   ",                                  01427000
        "SPO SEN"," INPUT ","READY  ",                                  01428000
        "CR SEN ","DATA RE","ADY    ",                                  01429000
        "SLC SEN"," INPUT ","READY  ",                                  01430000
        "SEN CP ","ERROR  ","       ",                                  01431000
        "PTP SEN"," NOT EO","T      ",                                  01432000
        "MCL SEN"," IRB OF","F      ",                                  01433000
        "LP SEN ","MOTION ","DONE   ",                                  01434000
        "PTR SEN"," NOT EO","T      ",                                  01435000
        "CR SEN ","BUSY   ","       ",                                  01436000
        "SLC SEN"," CARRIE","R ON   ",                                  01437000
        "CP SEN ","FIRST 4"," ROWS  ",                                  01438000
        "MLC SEN"," DATA R","EADY   ",                                  01439000
        "LP SEN ","PRINT D","ONE    ",                                  01440000
        "PTR SEN"," NOT EN","D MSG. ",                                  01441000
        "SLC SEN"," CLEAR ","TO SEND",                                  01442000
        "CP SEN ","BUFFER ","READY  ",                                  01443000
        "PTP SEN"," READY ","       ",                                  01444000
        "MLC SEN","       ","       ",                                  01445000
        "SLC SEN"," INTERL","OCK    ",                                  01446000
        "PTP SEN"," DATA N","EEDED  ",                                  01447000
        "MLC SEN","       ","       ",                                  01448000
        "LP SEN ","READY  ","       ",                                  01449000
        "SLC SEN"," RING  ","       ",                                  01450000
        "MLC SEN","       ","       ",                                  01451000
        "LP SEN ","BUFFER ","READY  ",                                  01452000
        "SLC SEN"," CDD PA","RITY   ",                                  01453000
        "MLC SEN","       ","       ",                                  01454000
        "ENBL SP","C OUTPT"," INTRPT",                                  01455000
        "START P","T READE","R      ",                                  01456000
        "ENBL CR"," INTRUP","TS     ",                                  01457000
        "ENBL SL","C REC. ","BIT MOD",                                  01458000
        "Z      ","A      ","C      ","X      ",                        01459000
        "P      ","B      ","D      ","Y      ",                        01460000
        "Q      ","F      ",0,0,0,0,0,0,0,0,0,0,                        01461000
        "********","********","********","********",                    01462000
        "********","********","********","********",.                   01463000
        "********","********","********","********",                    01464000
        "********","********","********","********",                    01465000
        "*********",                                                    01466000
        0,0,0,0,0,0,0,0,0,0,0;                                          01467000
%                   NEXT ENTRY IS 241                                   01468000
%                                                                       01469000
    FILL TEXTARRAY[3,*] WITH                                            01470000
        "ENBL CP"," INTRUP","TS     ",                                  01471000
        "SET PTP"," BINARY"," MODE  ",                                  01472000
        "ENBL ML","C INTRU","PTS    ",                                  01473000
        "ENBL LP"," INTRUP","TS     ",                                  01474000
```

Data Documents/Inc.

```
"RESET S","PC CONT","ROL    ",                                    01475000
"$$$$$$$","$$$$$$$","$$$$$$$",                                    01476000
"$$$$$$$","$$$$$$$","$$$$$$$",                                    01477000
"INITIAT","E CARD ","CYCLE  ",                                     01478000
"ENBL SL","C REC. ","INTRUPT",                                     01479000
"DSBL CP","  INTRUP","TS     ",                                     01480000
"SET PTP","  ALPHA ","MODE   ",                                     01481000
"DSBL ML","C INTRU","PTS    ",                                     01482000
"DSBL LP","  INTRUP","TS     ",                                     01483000
"START S","PC READ","ER     ",                                     01484000
"$$$$$$$","$$$$$$$","$$$$$$$",                                    01485000
"$$$$$$$","$$$$$$$","$$$$$$$",                                    01486000
"DSBL CR","  INTRUP","TS     ",                                     01487000
"DSBL SL","C REC. ","INTRPTS",                                     01488000
"SELCT C","P MAIN ","STACKER",                                     01489000
"ENBL PT","P INTRU","PTS    ",                                     01490000
"SET MLC","  IRB OF","F      ",                                     01491000
"INITIAL","IZE LP ","CONTROL",                                     01492000
"ENBL SP","C INPUT","  INTRPT",                                    01493000
"SELECT ","PTR ALP","HA MODE",                                     01494000
"INITIAL","IZE CR ","CONTROL",                                     01495000
"SLC DAT","A TERM.","  RDY ON",                                    01496000
"SELECT ","CP AUX.","  STACKR",                                    01497000
"DSBL PT","P INTRU","PTS    ",                                     01498000
"MLC REA","D W REG","ISTER  ",                                     01499000
"ENBL PT","R INTRU","PTS    ",                                     01500000
"SLC REQ","  TO SND","  ON    ",                                   01501000
"INITIAT","E CP CY","CLE    ",                                     01502000
"PTP FUN","      ","      ",                                       01503000
"MLC SYS","TEM RES","ET     ",                                     01504000
"$$$$$$$","$$$$$$$","$$$$$$$",                                    01505000
"$$$$$$$","$$$$$$$","$$$$$$$",                                    01506000
"SLC REQ","  TO SEN","D OFF  ",                                    01507000
"INITIAT","E CP CO","NTROL  ",                                     01508000
"START P","T PUNCH","       ",                                     01509000
"MLC LIN","E RESET","       ",                                     01510000
"READ SP","C ONE C","HAR    ",                                     01511000
"$$$$$$$","$$$$$$$","$$$$$$$",                                    01512000
"$$$$$$$","$$$$$$$","$$$$$$$",                                    01513000
"ENBL SL","C REC W","RD MODE",                                     01514000
"STOP PT","  PUNCH ","       ",                                     01515000
"MLC CPU","  PRIORI","TY     ",                                     01516000
"PTR REW","IND    ","       ",                                     01517000
"INITIAL","IZE SLC","  CONTRL",                                    01518000
"RESET P","TP CONT","ROL    ",                                     01519000
"MLC FUN","      ","      ",                                       01520000
"MODIFY ","INTERRU","PTS    ",                                     01521000
"COPY IN","TERRUPT","  STATUS",                                    01522000
"COPY IN","TERRUPT","  MASK  ",                                    01523000
"SKIP IF","  INTERR","UPT ENV",                                    01524000
"SKIP PO","WER FAI","L/HALT ",                                     01525000
"SKIP SE","NSE 1 0","FF     ",                                     01526000
"SKIP SE","NSE 2 0","FF     ",                                     01527000
"SKIP SE","NSE 3 0","FF     ",                                     01528000
"DISABLE","  INTERR","UPTS   ",                                    01529000
"ENABLE ","INTERRU","PTS    ",                                     01530000
0,0,0,0,0,0,0,0,0,                                                 01531000
"MULTIPL","Y DEFIN","ED LABE","L      ",                           01532000
"UNDEFIN","ED LABE","L      ","      ",                           01533000
"LABEL L","OCATION","  CONFLI","CT     ",                          01534000
```

Data Documents/Inc.

```
            "LABEL A","SSIGNME","NT ERRO","R       ",                    01535000
            "POSSIBL","E OPERA","ND SIZE","  ERROR ",                    01536000
            "INDEXED","  OPERAN","D ERROR","        ",                    01537000
            "ILLEGAL","  REGIST","ER TYPE","        ",                    01538000
            "INSUFFI","CIENT M","EMORY  ","        ",                    01539000
            "LITERAL","  PASS M","ISMATCH","        ",                    01540000
            "ADDRESS","ABILITY","  ERROR ","        ";                    01541000
      %                                                                  01542000
      FILL OUTPOINTER[*] WITH                                            01543000
            OCT0162000100020000, OCT0000000000040005,                    01544000
            OCT0000000600000000, OCT0000000000000007,                    01545000
            0,0,0, OCT0000001000000000, 0,0,0,                           01546000
            OCT0000000000000011, 0,0,0,                                  01547000
            OCT0000001200000000,0,0,0,0,0,0,0,0,                         01548000
            0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,     01549000
            0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0;     01550000
      %                                                                  01551000
      FILL INPOINTER[*] WITH                                             01552000
            OCT0163001300140000, OCT0000001600170000,0,                  01553000
            OCT0000000000000020,                                         01554000
            0,0,0,0,                                                     01555000
            OCT0164000000000000,                                         01556000
            0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,     01557000
            0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,     01558000
            0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0;     01559000
      %                                                                  01560000
      FILL SENARRAY[*] WITH                                              01561000
            OCT0165000000210000, OCT0000002300240025,                    01562000
            OCT0000002600000000, 23,0,0,0,                               01563000
            OCT0000003000000000, OCT0167003100320000,                    01564000
            OCT0000003300340035, OCT0000003600000000,                    01565000
            32,0,0,0, OCT0000004000000000,                               01566000
            OCT0170004100000000, OCT0000004200430044,                    01567000
            OCT0000004500000000, OCT0000000000000046,                    01568000
            0,0,0,                                                       01569000
            OCT0000004700000000, OCT0000000000500000,                    01570000
            OCT0000005100520053, 0,44,0,0,0,                             01571000
            OCT0000005500000000, OCT0171000000560000,                    01572000
            OCT0000000000570060, OCT0000006100000000,                    01573000
            50,0,0,0,0,0,                                                01574000
            OCT0000000000630000, OCT0000006400000000,                    01575000
            53,0,0,0,                                                    01576000
            OCT0000006600000000,0,                                       01577000
            OCT0000000000670000,0,56,0,0,0,                              01578000
            OCT0000007100000000,0,                                       01579000
            OCT0000000000720000,0,59,0,0,0,0;                            01580000
      %                                                                  01581000
      FILL FUNARRAY[*] WITH                                              01582000
            OCT0172007400750000, OCT0000007600770100,                    01583000
            OCT0000010100000000, 06,0,0,0,                               01584000
            OCT0000010300000000, OCT0173010401050000,                    01585000
            OCT0000010701100111, OCT0000011200000000,                    01586000
            75,0,0,0,                                                    01587000
             OCT0000011400000000, OCT0000011501160000,                   01588000
             OCT0000012001210122, OCT0000012300000000,                   01589000
            84,0,0,0,                                                    01590000
            OCT0000012500000000, OCT0000012601270000,                    01591000
            OCT0000013001310132, OCT0000013300000000,                    01592000
            92,0,0,0,0,                                                  01593000
            OCT0000000001350000, OCT0000000001360137,                    01594000
```

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```
            OCT0000014000000000, 97,0,0,0,0,                                01595000
            OCT0000000001420000, OCT0000000001440145,                       01596000
            OCT0000014600000000, 103,0,0,0,0,                               01597000
            OCT0000015001510000, OCT0000000001530000,                       01598000
            OCT0000015400000000, 109,0,0,0,0,                               01599000
            OCT0000000001560000, OCT0000000001570000,                       01600000
            OCT0000016000000000, 113,0,0,0,0;                               01601000
        END;                                                                01601100
    %                                                                       01602000
        END OF FINALLY;                                                     01603000
    %                                                                       01604000
    %                                                                       01605000
    %       DONEIHOPE IS CALLED AT THE END OF EACH PASS TO DETERMINE        01606000
    %       IF ANOTHER PASS SHOULD BE TAKEN.                                01607000
    %                                                                       01608000
    BOOLEAN PROCEDURE DONEIHOPE;                                            01609000
        IF LASTPASS THEN DONEIHOPE:=TRUE                                    01610000
        ELSE                                                                01611000
        BEGIN                                                               01612000
            LOC:=0 & TYPELABL TYPE & (1) SIZE;                              01613000
            FEELTHEMADDRESSES;                                              01614000
            IF LASTPASS THEN FINALLY;                                       01615000
            EMITINTERRUPTCODE;                                              01616000
            DUMPTHECRUD;                                                    01617000
            FIRSTPASS:=FALSE;                                               01618000
            DONEIHOPE := IF PASSES := PASSES + 1 > 7 THEN TRUE ELSE FALSE;  01619000
        END;                                                                01619100
    %                                                                       01620000
    %                                                                       01620002
    %                                                                       01620004
    PROCEDURE GETCONFIGURATION;                                             01620006
    BEGIN                                                                   01620008
    LABEL ZOT,BUZZ,NEXT;                                                    01620010
     REAL STREAM PROCEDURE EXAMIN(NCR); VALUE NCR;                          01620012
                BEGIN SI←NCR; DI←LOC EXAMIN; DI←DI+7; DS←CHR END;           01620014
    DEFINE                                                                  01620016
            STEPI     =     (ELCLASS := TABLE(I := I + 1))#,                01620018
            STEPIT    =      ELCLASS := TABLE(I := I + 1)#;                 01620020
    PROCEDURE PRINTCARD; FORWARD;                                           01620022
    PROCEDURE FLAG(X);   VALUE X;   REAL X;                                 01620026
    BEGIN                                                                   01620028
        SWITCH FORMAT  ERRF :=                                              01620030
         (X20,"ILLEGAL DOLLAR OPTION          ",X39,15("X")),               01620032
         (X20,"SEQUENCE ERROR                 ",X39,15("X")),               01620034
         (X20,"ILLEGAL CODE                   ",X39,15("X")),               01620036
         (X20,"ILLEGAL MEMORY SIZE            ",X39,15("X")),               01620038
         (X20,"ILLEGAL CARRIAGE SIZE          ",X39,15("X")),               01620040
         (X20,"PRESENCE SPECIFICATION EXPECTED",X39,15("X")),               01620042
         (X20,"LINE SPECIFICATION EXPECTED    ",X39,15("X")),               01620044
         (X20,"NOT IMPLEMENTED                ",X39,15("X")),               01620046
         (X20,"PUNCH SPECIFICATION EXPECTED   ",X39,15("X")),               01620048
         (X20,"READER SPECIFICATION EXPECTED  ",X39,15("X")),               01620050
         (X20,"ILLEGAL OPTION                 ",X39,15("X")),               01620052
         (X20,"NUMBER EXPECTED                ",X39,15("X")),               01620054
        (X20,"MISSING MEMORY OPTION          ",X39,15("X")),                01620055
        (X20,"MISSING COMMUNICATIONS OPTION  ",X39,15("X"));                01620056
    %                                                                       01620057
        IF NOHEADING THEN DATIME;                                           01620058
        IF NOT COMMON.[7:1] THEN PRINTCARD;                                 01620060
        WRITE(LINE[DBL],ERRF[X]);                                           01620062
```

Data Documents/Inc.

```
        ERRORS := ERRORS + 1;                                                   01620064
    END;                                                                        01620066
    OWN BOOLEAN SETTING;                                                        01620068
    OWN INTEGER XMODE;          % TELLS DOLLARCARD HOW TO SET OPTIONS.         01620070
     OWN ARRAY SPECIAL[0:31];                                                   01620072
     OWN ALPHA ARRAY ACCUM[0:10];                                               01620074
     OWN INTEGER COUNT;                                                         01620076
     OWN ALPHA Q;                                                               01620078
     OWN ARRAY ELBAT[0:75]; OWN INTEGER I, NXTELBT;                             01620080
     OWN INTEGER FCR, NCR, LCR,CLCR;                                            01620082
     OWN ARRAY TEN[0:69];                                                       01620084
     OWN REAL GT1,GT2,GT3,GT4;                                                  01620086
     OWN INTEGER GTI1;                                                          01620088
     OWN INTEGER RESULT;                                                        01620090
    OWN REAL ELCLASS;                                                           01620092
     OWN INTEGER LASTUSED;                                                      01620094
     OWN ARRAY LIN[0:20]; COMMENT PRINT OUTPUT BUILT IN LIN;                    01620096
     OWN REAL C;                                                                01620098
     OWN REAL T;                                                                01620100
     OWN INTEGER TCOUNT;                                                        01620102
    OWN REAL N,K;                                                               01620104
     PROCEDURE SCANNER;  FORWARD;                                               01620106
     STREAM PROCEDURE MOVE(W)"WORDS FROM"(A)"TO"(B); VALUE W;                   01620108
          BEGIN LOCAL T;                                                        01620110
               SI←LOC W; DI←LOC T; SI←SI+6; DI←DI+7; DS←CHR;                    01620112
               SI←A; DI←B; T(DS←32 WDS); DS←W WDS;                              01620114
          END MOVE;                                                             01620116
    REAL STREAM PROCEDURE MKABS(X);                                             01620118
        BEGIN     SI := X;    MKABS  := SI;    END;                           01620120
    STREAM PROCEDURE BLANKET(N,THERE); VALUE N;                                 01620122
        BEGIN                                                                   01620124
        DI:=THERE; DS:=8 LIT" "; SI:=THERE; DS:=N WDS;                          01620126
        END BLANKET;                                                            01620128
        REAL STREAM PROCEDURE CONV(ACCUM,SKP,N); VALUE SKP,N;                   01620130
          BEGIN                                                                 01620132
               SI← ACCUM; SI←SI+SKP;SI←SI+3;DI←LOC CONV; DS ← N OCT             01620134
          END CONV;                                                             01620136
    STREAM PROCEDURE TURNONSTOPLIGHT(RED,CORNER); VALUE RED,CORNER;             01620138
        BEGIN  DI:=CORNER; SI:=LOC CORNER; SI:=SI-1; DS:=CHR  END;              01620140
     BOOLEAN STREAM PROCEDURE WRITNEW(NEW,FCR); VALUE FCR;                      01620142
          BEGIN SI←FCR; IF SC≠"$" THEN TALLY←1;                                 01620144
               DI←NEW; DS←10 WDS; WRITNEW←TALLY                                 01620146
          END WRITNEW;                                                          01620148
    PROCEDURE READACARD;  FORWARD;                                              01620150
    PROCEDURE DOLLARCARD; FORWARD;                                              01620152
    PROCEDURE SCANNER;                                                          01620154
        BEGIN                                                                   01620156
     STREAM PROCEDURE SCAN(NCR,COUNTV,ACCUM,COMCOUNT,RESULT,RESULTV,            01620158
                COUNT,ST2,NCRV,ST1);                                            01620160
               VALUE COUNTV, COMCOUNT,RESULTV,ST2,NCRV,ST1;                     01620162
               BEGIN                                                            01620164
               LABEL DEBLANK,NUMBERS,IDBLDR,GNC,K,EXIT,FINIS,L,ERROR,           01620166
                     COMMENTS,COMMANTS;                                         01620168
               DI ← RESULT; DI ← DI+7;                                          01620170
               SI ← NCRV;                                                       01620172
               CI ← CI+RESULTV;   COMMENT SWITCH ON VALUE OF RESULT;            01620174
               GO TO DEBLANK;  COMMENT 0 IS INITIAL CODE;                       01620176
               GO TO IDBLDR;   COMMENT 1 IS ID CODE;                            01620178
               GO TO FINIS;    COMMENT 2 IS SPECIAL CHARACTER CODE;             01620180
               GO TO NUMBERS;  COMMENT 3 IS NUMBER CODE;                        01620182
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                GO TO FINIS;     COMMENT 4 IS ERROR CODE;                          01620184
                GO TO GNC;       COMMENT 5 IS GET NEXT CHARACTOR CODE;             01620186
                GO TO COMMANTS;  COMMENT 6 IS COMMENT CODE;                        01620188
                                 COMMENT 7 IS DEBLANK ONLY CODE;                   01620190
                    IF SC=" " THEN                                                 01620192
                BEGIN K:    SI←SI+1;                                               01620194
                    IF SC =" "  THEN GO TO K                                       01620196
                END;                                                               01620198
                    GO TO FINIS;                                                   01620200
        DEBLANK:  IF SC = " " THEN                                                 01620202
                      BEGIN L: SI←SI+1; IF SC = " " THEN GO TO L END;              01620204
                NCRV ← SI;                                                         01620206
                IF SC ≥ "0" THEN GO TO NUMBERS;                                    01620208
                IF SC = ALPHA THEN GO TO IDBLDR;                                   01620210
            GNC:  DS ← LIT "2";                                                    01620212
                TALLY ← 1; SI ← SI +1; GO TO EXIT;                                 01620214
        COMMANTS:  IF SC ≠ ";" THEN BEGIN                                          01620216
        COMMENTS:  SI ← SI+1;                                                      01620218
                IF SC > "%" THEN GO TO COMMENTS;                                   01620220
                IF SC < ";" THEN GO TO COMMENTS;                                   01620222
                END;                                                               01620224
                GO TO FINIS;                                                       01620226
        IDBLDR:   TALLY ← 63; DS ← LIT "1";                                        01620228
                COMCOUNT( TALLY← TALLY+1;                                          01620230
                    IF SC = ALPHA THEN SI←SI+1 ELSE JUMP OUT TO EXIT);             01620232
                TALLY ← TALLY+1; IF SC = ALPHA THEN BEGIN                          01620234
        ERROR:  DI←DI-1; DS ← LIT "4"; GO TO EXIT;                                 01620236
                END ELSE GO TO EXIT;                                               01620238
        NUMBERS:  TALLY ← 63; DS ← LIT "3";                                        01620240
                    COMCOUNT( TALLY← TALLY+1;                                      01620242
                    IF SC <"0"THEN JUMP OUT TO EXIT; SI←SI+1);                     01620244
                GO TO ERROR;                                                       01620246
        EXIT:   ST1 ← TALLY;                                                       01620248
                TALLY ← TALLY+COUNTV; ST2 ← TALLY;                                 01620250
                DI ← COUNT; SI ← LOC ST2; DS ← WDS;                                01620252
                DI ← ACCUM; SI ← SI-3; DS ← 3 CHR;                                 01620254
                DI ← DI+COUNTV;  COMMENT POSITION DI PAST CHARACTORS               01620256
                                    ALREADY IN THE ACCUMULATOR, IF ANY;            01620258
                SI ← NCRV; DS ← ST1 CHR;                                           01620260
        FINIS:  DI ← NCR; ST1 ← SI; SI ← LOC ST1; DS ← WDS;                        01620262
                END OF SCAN;                                                       01620264
            LABEL L;                                                               01620266
            L:  SCAN(NCR, COUNT, ACCUM[1], 63-COUNT, RESULT,                       01620268
                        RESULT, COUNT, 0, NCR, 0);                                 01620270
            IF NCR=LCR THEN                                                        01620272
            BEGIN READACARD;                                                       01620274
                GO TO L;                                                           01620276
            END;                                                                   01620278
        END SCANNER;                                                               01620280
    DEFINE WRITELINE = IF SINGLTOG THEN WRITE(LINE,15,LIN[*])                      01620282
                       ELSE WRITE(LINE[DBL],15,LIN[*])#;                           01620284
    STREAM PROCEDURE EDITLINE(LINE,NCR,SYMBOL,OMIT);                               01620286
                       VALUE NCR,SYMBOL,OMIT;                                      01620288
        BEGIN                                                                      01620290
        DI := LINE; DS := 10 LIT " ";                                              01620292
        SI := NCR; DS := 9 WDS;                                                    01620294
        DS := 48 LIT " ";                                                          01620296
        END EDITLINE;                                                              01620298
    PROCEDURE PRINTCARD;                                                           01620300
                    BEGIN                                                          01620302
```

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```
                    EDITLINE(LIN,FCR,0,0);                                  01620304
                    IF NOHEADING THEN DATIME; WRITELINE;                    01620306
                    END ;                                                   01620308
1   STREAM PROCEDURE STOPPER(X);                                            01620310
2       BEGIN                                                               01620312
3           DI := X;   DS := 2 LIT ";";                                     01620314
4           DS := 6 LIT "STOP;.";  DS := 8 LIT " ";                         01620316
5           SI := X;   SI := SI + 8;   DS := 8 WDS;                         01620318
6       END;                                                                01620320
7   PROCEDURE READACARD;                                                    01620322
8       BEGIN                                                               01620324
9       LABEL CARDLAST,USETHESWITCH,XIT,FIRSTTIME,EOF;                      01620326
10      LABEL EXIT;                                                         01620328
11      SWITCH USESWITCH := CARDLAST,XIT,XIT,FIRSTTIME;                     01620330
12      BOOLEAN DOLLAR2TOG;                                                 01620332
13  USETHESWITCH:                                                           01620334
14      GO TO USESWITCH[LASTUSED];                                          01620336
15      LASTUSED := LASTUSED + 1;                                           01620338
16      NCR := LCR-1;                                                       01620340
17      GO TO XIT;                                                          01620342
18  FIRSTTIME:                                                              01620344
19      READ(CARD,10,CBUFF[*]);                                             01620346
20      FCR:=NCR:=(LCR:=MKABS(CBUFF[9]))-9;                                 01620348
21      IF EXAMIN(FCR) ≠ "$" THEN                                           01620350
22          BEGIN                                                           01620352
23          PRINTCARD;      LISTOG := TRUE;                                 01620354
24          END;                                                            01620356
25      LASTUSED := 1;                                                      01620358
26      GO EXIT;                                                            01620360
27  CARDLAST:                                                               01620362
28      READ(CARD,10,CBUFF[*])[EOF];                                        01620364
29      IF LISTOG THEN PRINTCARD;                                           01620366
30      LCR := MKABS(CBUFF[9]);                                             01620368
31      GO EXIT;                                                            01620370
32  EOF:                                                                    01620372
33      STOPPER(CBUFF);                                                     01620374
34      LCR := MKABS(CBUFF[9]);                                             01620376
35      TURNONSTOPLIGHT("%",LCR);                                           01620378
36  EXIT:                                                                   01620380
37      TURNONSTOPLIGHT("%",LCR);                                           01620382
38      NCR := FCR := LCR - 9;                                              01620384
39  XIT:                                                                    01620386
40      END READACARD;                                                      01620388
41  REAL PROCEDURE CONVERT;                                                 01620390
42              BEGIN  REAL  T;  INTEGER  N;                                01620392
43                  T← CONV(ACCUM[1],TCOUNT,N←(COUNT-TCOUNT)MOD 8);         01620394
44                  FOR N← TCOUNT+N STEP 8 UNTIL COUNT- 1 DO                01620396
45                  T←  T×100000000+ CONV(ACCUM[1],N,8);                    01620398
46                  CONVERT←T;                                              01620400
47              END;                                                        01620402
48  DEFINE SKAN = BEGIN                                                     01620404
49              COUNT:=RESULT:=ACCUM[1]:=0;                                 01620406
50              SCANNER;                                                    01620408
51              Q:=ACCUM[1];                                                01620410
52              END #;                                                      01620412
53  PROCEDURE DOLLARCARD;                                                   01620414
54      BEGIN                                                               01620416
55      PROCEDURE SWITCHIT(XBIT); VALUE XBIT; INTEGER XBIT;                 01620418
56          BEGIN                                                           01620420
57          BOOLEAN B,T;                                                    01620422
```

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```
            INTEGER SAVEINX;                                                    01620424
            LABEL XMODE0,XMODE1,XMODE2,XMODE3,ALONG;                            01620426
            SWITCH SW:=XMODE0,XMODE1,XMODE2,XMODE3;                             01620428
            SKAN;                                                               01620430
            GO SW[XMODE+1];                                                     01620432
XMODE0:     % FIRST OPTION ON CARD, BUT NOT SET, RESET, OR POP.                 01620434
            COMMON:=BOOLEAN(0);                                                 01620436
            XMODE:=1; LASTUSED:=1; % CARD INPUT ONLY.                           01620438
XMODE1:     % NOT FIRST OPTION AND NOT BEING SET, RESET, OR POPPED.             01620440
            COMMON:=COMMON & TRUE[XBIT:1];                                      01620442
            GO ALONG;                                                           01620444
XMODE2:     % RESET.                                                           01620446
            COMMON:=COMMON & FALSE[XBIT:1];                                     01620448
            GO ALONG;                                                           01620450
XMODE3:     % SET.                                                             01620452
            COMMON:=COMMON & (TRUE)[XBIT:1];                                    01620454
ALONG:                                                                          01620456
            END SWITCHIT;                                                       01620458
        LABEL EXIT,AGAIN,SKANAGAIN,LENGTH1,LENGTH3,LENGTH4,                     01620460
              LENGTH5,LENGTH6,                                                  01620462
              WHATISIT;                                                         01620464
        SWITCH OPTIONLENGTH:=LENGTH1,WHATISIT,LENGTH3,LENGTH4,LENGTH5,          01620466
                             LENGTH6,WHATISIT;                                  01620468
        XMODE:=0;                                                               01620470
        TURNONSTOPLIGHT("%",LCR);                                               01620472
SKANAGAIN:                                                                      01620474
        SKAN;                                                                   01620476
AGAIN:                                                                          01620478
        GO OPTIONLENGTH[IF COUNT < 7 THEN COUNT ELSE 7];                        01620482
LENGTH1:                                                                        01620484
        IF Q = "1%0000" THEN GO EXIT;                                           01620486
        IF Q = "1,0000" THEN GO SKANAGAIN;                                      01620488
        GO WHATISIT;                                                            01620490
LENGTH3:                                                                        01620492
        IF Q = "3SET00" THEN                                                    01620494
            BEGIN XMODE:=3; GO SKANAGAIN END;                                   01620496
        GO WHATISIT;                                                            01620498
LENGTH4:                                                                        01620500
        IF Q = "4LIST0" THEN                                                    01620502
            BEGIN                                                               01620504
            SWITCHIT(LISTBIT);                                                  01620506
            GO AGAIN;                                                           01620508
            END;                                                                01620510
        IF Q = "4PAGE0" THEN                                                    01620512
            BEGIN                                                               01620514
            IF LISTOG THEN WRITE(LINE[PAGE]);                                   01620516
            GO SKANAGAIN;                                                       01620518
            END;                                                                01620520
         IF Q = "4CODE0" THEN                                                   01620522
            BEGIN                                                               01620524
            SWITCHIT(CODEBIT);                                                  01620526
            GO AGAIN;                                                           01620528
            END;                                                                01620530
        GO WHATISIT;                                                            01620532
LENGTH5:                                                                        01620534
        IF Q = "5RESET" THEN                                                    01620536
            BEGIN XMODE:=2; GO SKANAGAIN END;                                   01620538
        IF Q = "5PUNCH" THEN                                                    01620540
            BEGIN                                                               01620542
            SWITCHIT(CODEPUNCHBIT);                                             01620544
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```
            IF Q ≠ "4ONLYO" THEN GO AGAIN;                                  01620546
            GO PUNCHONLY;                                                   01620548
            END;                                                            01620550
        GO WHATISIT;                                                        01620552
LENGTH6:                                                                    01620554
        IF Q = "6SINGL" THEN                                                01620556
            BEGIN SWITCHIT(SINGLBIT); GO AGAIN  END;                        01620558
        IF Q = "6DEBUG" THEN                                                01620560
            BEGIN                                                           01620562
            SWITCHIT(DEBUGBIT);                                             01620564
            GO AGAIN;                                                       01620566
            END;                                                            01620568
WHATISIT:                                                                   01620570
        FLAG(0);      GO SKANAGAIN;                                         01620572
 EXIT:                                                                      01620574
        END DOLLARCARD;                                                     01620578
INTEGER PROCEDURE TABLE(P); VALUE P; INTEGER P;                             01620580
        BEGIN                                                               01620582
        LABEL PERCENT,SPECIALCHAR,COMPLETE,                                 01620584
              SCANAGAIN,ARGH,IPART,IDENT,DOLLAR;                            01620586
        SWITCH RESULTSWITCH:=IDENT,SPECIALCHAR,IPART;                       01620588
        WHILE P ≥ NXTELBT                                                   01620590
        DO   BEGIN                                                          01620592
SCANAGAIN:                                                                  01620594
            COUNT:=RESULT:=ACCUM[1]:=0; SCANNER;                            01620596
            GO RESULTSWITCH[RESULT];                                        01620598
ARGH:                                                                       01620600
            Q := ACCUM[1]; T := 0; GO COMPLETE;                             01620602
SPECIALCHAR:                                                                01620604
            GT1 := ACCUM[1].[18:6];                                         01620606
            GT1 := SPECIAL[GT1&GT1[42:41:3]];                               01620608
            IF GT1 = 6 THEN GO DOLLAR;                                      01620610
            IF GT1 = 7 THEN GO PERCENT;                                     01620612
            T := GT1; GO COMPLETE;                                          01620614
DOLLAR:                                                                     01620616
            DOLLARCARD;                                                     01620618
PERCENT:    IF NCR ≠ FCR THEN READACARD;                                    01620620
            GO SCANAGAIN;                                                   01620622
IPART:      TCOUNT:=0; C:=CONVERT;                                          01620624
            RESULT:=7; SCANNER; % DEBLANK.                                  01620626
            Q:=ACCUM[1]; RESULT:=3;                                         01620628
            T := 1;                                                         01620630
            IF C ≤ 32768 THEN                                               01620632
            ELSE T:=NONLITNO ;                                              01620634
          GO COMPLETE;                                                      01620636
IDENT:      Q:=ACCUM[1]; T := 2;                                            01620638
COMPLETE:                                                                   01620640
            ELBAT[NXTELBT]:=T;                                              01620642
            IF NXTELBT:=NXTELBT+1 > 74 THEN                                 01620644
                BEGIN                                                       01620646
                MOVE(10,ELBAT[65],ELBAT);                                   01620648
                I:=I-65; P:=P-65; NXTELBT:=10;                              01620650
                END;                                                        01620652
      IF (TABLE:=ELBAT[P]) = 2 THEN                                         01620654
            IF Q = "7COMME" THEN                                            01620656
                BEGIN                                                       01620658
                RESULT := 6;                                                01620660
                SKAN;                                                       01620662
                GO SCANAGAIN;                                               01620664
                END;                                                        01620666
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        END;                                                                    01620668
    END TABLE ;                                                                 01620670
PROCEDURE SWITCHER(COD,DEV); VALUE COD,DEV; REAL COD,DEV;                       01620672
    COMMON := COMMON & (TRUE)[COD+DEV:47:1];                                    01620674
%                                                                               01620676
PROCEDURE GETCODES(P);      VALUE P;      INTEGER P;                            01620678
    BEGIN                                                                       01620680
        LABEL ZOT,SCAN,XIT;                                                     01620682
        LABEL  DFT;                                                             01620684
        IF BOOLEAN(P) THEN PUNCHTOG := TRUE ELSE READERTOG := TRUE;             01620686
        IF ELCLASS = COMMAV THEN STEPIT;                                        01620688
        IF ELCLASS = SEMICOLONV THEN GO XIT;                                    01620690
        IF ELCLASS ≠ IDV THEN GO ZOT;                                           01620692
        IF Q = "3BCL00" THEN                                                    01620694
            BEGIN                                                               01620696
DFT:        SWITCHER(BCLBIT,P);                                                 01620698
            IF BOOLEAN(P) THEN PUNCHDEFAULT := 0 ELSE                           01620700
                               READERDEFAULT := 0;                              01620702
            IF ELCLASS = SEMICOLONV THEN GO XIT;                                01620704
            GO SCAN;                                                            01620706
            END;                                                                01620708
        IF Q = "6EBCDI" THEN                                                    01620710
            BEGIN                                                               01620712
            SWITCHER(EBCDICBIT,P);                                              01620714
            IF BOOLEAN(P) THEN PUNCHDEFAULT := 1 ELSE                           01620716
                               READERDEFAULT := 1;                              01620718
            GO SCAN;                                                            01620720
            END;                                                                01620722
ZOT:    FLAG(2);                                                                01620724
        IF BOOLEAN(P) THEN PUNCHTOG := FALSE ELSE READERTOG := FALSE;           01620726
        GO XIT;                                                                 01620728
%                                                                               01620730
SCAN:   WHILE STEPI ≠ SEMICOLONV DO                                             01620732
            BEGIN                                                               01620734
            IF ELCLASS = COMMAV THEN STEPIT;                                    01620736
            IF ELCLASS ≠ IDV THEN GO ZOT;                                       01620738
            IF Q = "3BCL00" THEN SWITCHER(BCLBIT,P) ELSE                        01620740
            IF Q = "6EBCDI" THEN SWITCHER(EBCDICBIT,P) ELSE                     01620742
            GO ZOT;                                                             01620744
            END;                                                                01620746
%                                                                               01620748
XIT:                                                                            01620750
    END;                                                                        01620752
PROCEDURE HANDLEMEMORY;                                                         01620754
BEGIN                                                                           01620756
    IF STEPI = EQUALV THEN STEPIT;                                              01620758
    IF ELCLASS = LITERALV THEN MEMORY := C ELSE FLAG(3);                        01620760
END;                                                                            01620762
PROCEDURE HANDLEPRINTER;                                                        01620764
BEGIN                                                                           01620766
    IF STEPI = EQUALV THEN STEPIT;                                              01620768
    IF ELCLASS = LITERALV THEN                                                  01620770
      BEGIN                                                                     01620772
          IF  C ≠ 132  AND C ≠ 120 AND C ≠ 80 THEN                              01620774
            FLAG(4)                                                             01620776
        ELSE PRINTERLINELENGTH := C;                                            01620778
      END                                                                       01620780
    ELSE                                                                        01620782
        IF ELCLASS ≠ IDV THEN FLAG(5)                                           01620784
        ELSE                                                                    01620786
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                IF Q = "4TRUEO" THEN PRINTERLINELENGTH := 132                01620788
                ELSE IF Q = "5FALSE" THEN PRINTERLINELENGTH := 0             01620790
                    ELSE FLAG(5);                                            01620792
    PRINTERTOG := PRINTERLINELENGTH # 0;                                     01620794
END;                                                                         01620796
PROCEDURE HANDLELINK;                                                        01620798
BEGIN                                                                        01620800
    IF STEPI = EQUALV THEN STEPIT;                                           01620802
    IF ELCLASS # IDV THEN  FLAG(6)                                           01620804
    ELSE                                                                     01620806
        BEGIN                                                                01620808
            IF Q = "6DIREC" THEN FLAG(7) ELSE                                01620810
            IF Q = "6LEASE" THEN                                             01620812
                BEGIN                                                        01620814
                    SWITCHEDLINETOG := FALSE;                                01620816
                    LEASEDLINETOG := TRUE;                                   01620818
                END ELSE                                                     01620820
            IF Q = "8SWITC" THEN                                             01620822
                BEGIN                                                        01620824
                    SWITCHEDLINETOG := TRUE;                                 01620826
                    LEASEDLINETOG := FALSE;                                  01620828
                END ELSE                                                     01620830
            FLAG(6);                                                         01620832
        END;                                                                 01620834
    WHILE STEPI # SEMICOLONV DO;                                             01620836
END;                                                                         01620838
PROCEDURE HANDLEPUNCH;                                                       01620840
BEGIN                                                                        01620842
        BCLPUNCHTOG := FALSE;                                                01620844
        EBCDICPUNCHTOG := FALSE;                                             01620846
        PUNCHDEFAULT := 0;                                                   01620848
    IF STEPI = EQUALV THEN STEPIT;                                           01620850
    IF ELCLASS # IDV THEN FLAG(8)                                            01620852
    ELSE                                                                     01620854
        BEGIN                                                                01620856
            IF Q = "4TRUEO" THEN                                             01620858
                BEGIN                                                        01620860
                PUNCHTOG := TRUE;                                            01620862
                STEPIT;                                                      01620864
                END;                                                         01620866
            IF Q = "5FALSE" THEN                                             01620868
                BEGIN                                                        01620870
                PUNCHTOG := FALSE;                                           01620872
                END                                                          01620874
             ELSE GETCODES(1);                                               01620876
        END;                                                                 01620878
END;                                                                         01620880
PROCEDURE LSR;                                                               01620882
    BEGIN                                                                    01620884
    READERTOG := TRUE;                                                       01620886
    HIGHSPEEDREADERTOG := NOT READERTOG;                                     01620888
    END;                                                                     01620890
PROCEDURE RLSR;                                                              01620892
    BEGIN                                                                    01620894
    READERTOG := FALSE;                                                      01620896
    HIGHSPEEDREADERTOG := READERTOG;                                         01620898
    END;                                                                     01620900
PROCEDURE HSR;                                                               01620902
    BEGIN                                                                    01620904
    READERTOG := TRUE;                                                       01620906
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```
        HIGHSPEEDREADERTOG := READERTOG;                                    01620908
        END;                                                                01620910
    PROCEDURE HANDLEREADER;                                                 01620912
    BEGIN                                                                   01620914
            LABEL   BYPASS,XIT;                                             01620916
            BCLREADERTOG := FALSE;                                          01620918
            EBCDICREADERTOG := FALSE;                                       01620920
            READERDEFAULT := 0;                                             01620922
        IF STEPI = EQUALV THEN STEPI;                                       01620924
        IF ELCLASS # IDV THEN FLAG(9)                                       01620926
        ELSE                                                                01620928
            BEGIN                                                           01620930
                IF Q = "4TRUE0" THEN LSR ELSE                               01620932
                IF Q = "5FALSE" THEN BEGIN RLSR;   GO XIT;  END ELSE        01620934
                IF Q = "4A5980" THEN LSR ELSE                               01620936
                IF Q = "5B9110" OR Q = "5B9111" OR Q = "5B9112" THEN  HSR   01620938
                ELSE GO  BYPASS;                                            01620940
                STEPIT;                                                     01620942
    BYPASS:  GETCODES(0);                                                   01620944
    XIT:                                                                    01620945
        END;                                                                01620946
    END;                                                                    01620948
            LABEL DONE;                                                     01620950
                                                                            01620952
        NOHEADING := TRUE;                                                  01620954
        LASTUSED := 4;                                                      01620956
        READACARD;                                                          01620958
        NXTELBT := 1;                                                       01620960
        FILL SPECIAL[*] WITH                                                01620962
            0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,                                01620964
            0,0,6,0,0,0,4,0,0,0,3,7,0,5,0,0;                                01620966
    %                                                                       01620968
    %                                                                       01620970
        ELCLASS := SEMICOLONV;                                              01620972
        WHILE TRUE DO                                                       01620974
            BEGIN                                                           01620976
            WHILE ELCLASS # SEMICOLONV DO STEPIT;                           01620978
            IF STEPI = SEMICOLONV THEN GO NEXT;                             01620980
    BUZZ:   IF ELCLASS = IDV THEN                                           01620982
            BEGIN                                                           01620984
                IF Q = ">COMMU" THEN                                        01620986
                    BEGIN                                                   01620988
                    HANDLELINK;      GO NEXT;                               01620990
                    END;                                                    01620992
                IF Q = "6MEMOR" THEN                                        01620994
                    BEGIN                                                   01620996
                    HANDLEMEMORY;      GO NEXT;                             01620998
                    END;                                                    01621000
                IF Q = "4LINE0" THEN                                        01621002
                    BEGIN                                                   01621004
                    STEPIT;                                                 01621006
                    IF Q # "7PRINT" THEN GO ZOT ELSE GO BUZZ;               01621008
                    END;                                                    01621010
                IF Q = "7PRINT" THEN                                        01621012
                    BEGIN                                                   01621014
                    HANDLEPRINTER;      GO NEXT;                            01621016
                    END;                                                    01621018
                IF Q = "4CARD0" THEN                                        01621020
                    BEGIN                                                   01621022
                    STEPIT;                                                 01621024
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```
                    IF Q = "6READE" OR Q = "5PUNCH" THEN GO TO BUZZ          01621026
                    ELSE GO ZOT;                                             01621028
                    END;                                                     01621030
               IF Q = "6READE" THEN                                          01621032
                    BEGIN                                                    01621034
                    HANDLEREADER;     GO NEXT;                               01621036
                    END;                                                     01621038
               IF Q = "5PUNCH" THEN                                          01621040
                    BEGIN                                                    01621042
                    HANDLEPUNCH;      GO NEXT;                               01621044
                    END;                                                     01621046
               IF Q = "4STOPO" THEN GO TO DONE;                              01621048
          END;                                                               01621050
ZOT:      FLAG(10);                                                          01621052
NEXT:                                                                        01621054
     END;                                                                    01621056
DONE:     CLOSE(CARD);                                                       01621058
          IF MEMORY = 0 THEN FLAG(12);                                       01621059
          IF NOT (LEASEDLINETOG OR SWITCHEDLINETOG) THEN FLAG(13);           01621060
%                                                                            01621061
END OF GET CONFIGURATION;                                                    01621062
%                                                                            01621064
%                                                                            01621066
%                                                                            01621070
%                                                                            01621075
%                                                                            01621080
PROCEDURE SUMMARY;                                                           01621085
     BEGIN                                                                   01621090
          FORMAT SUM1("NUMBER OF ERRORS DETECTED =",I5,".",X5,               01621095
                      "ELAPSED TIME =",I5," SECONDS."),                      01621100
                 SUM2("PROCESSOR TIME =",I5," SECONDS.",X5,"IO TIME =",      01621105
                      I5," SECONDS.");                                       01621107
     WRITE(LINE[DBL]);      WRITE(LINE[DBL]);                              01621108
     WRITE(LINE,SUM1,ERRORS,((TIME(1) - TIME1)/60));                         01621110
     WRITE(LINE,SUM2,(TIME(2)/60),(TIME(3)/60));                             01621115
     END;                                                                    01621120
%                                                                            01621125
%                                                                            01621130
%                                                                            01621135
%                                                                            01621140
%                                                                            01621145
%                                                                            01622000
%                                                                            01623000
%                                                                            01624000
%         THE FOLLOWING IS THE FIRST EXECUTABLE CODE.                        01625000
%                                                                            01626000
%                                                                            01627000
     TIME1 := TIME(1);                                                       01627100
     IF REAL(COMMON) = 0 THEN                                                01628000
          BEGIN                                                              01628100
               GETCONFIGURATION;                                             01628200
               CODETOG := NOT CODETOG;                                       01628300
          END;                                                               01628400
     PASSES := ERRORS;                                                       01628500
     KICKITALLOFF;                                                           01629000
     ERRORS := PASSES;                                                       01629100
%                                                                            01630000
     IF ERRORS # 0 THEN GO TO PUNCHONLY;                                     01630100
     DO                                                                      01631000
     BEGIN                                                                   01632000
```

Data Documents/Inc.

```
REAL SEGMENT;                                                                  01033000
%                                                                              10000000
    DEFINE                                                                     10001000
        TIMEOUT                 =  5000#,                                      10002000
        SOH                     =   1#,                                        10003000
        SOHP                    =  1#,                                         10004000
        STEXT                   =   2#,                                        10005000
        STEXTP                  =  2#,                                         10006000
        ETX                     =   3#,                                        10007000
        ETXP                    =  131#,                                       10008000
        EOT                     =   4#,                                        10009000
        EOTP                    =  4#,                                         10010000
        ENQ                     =   5#,                                        10011000
        ENQP                    =  133#,                                       10012000
        ACK                     =   6#,                                        10013000
        ACKP                    =  134#,                                       10014000
        NAK                     =  21#,                                        10015000
        NAKP                    =  21#,                                        10016000
        SYNC                    =  22#,                                        10017000
        SYNCP                   =  22#,                                        10018000
        ESC                     =  27#,                                        10019000
        ESCP                    =  155#,                                       10020000
        MSMAX                   =  375#,                                       10021000
        CR                      =  13#,                                        10022000
        DELETE                  =  127#,                                       10023000
        BACKSPACE               =  60#,                                        10024000
        LF                      =  10#,                                        10025000
        CRP                     =  13#,                                        10026000
        QM                      =  63#,                                        10027000
        BLANK                   =  32#,                                        10028000
        CONTROLAT               =  96#,                                        10029000
        LEFTARROW               =  95#,                                        10030000
        COMPRESSCHAR            =  27#;                                        10031000
%                                                                              10032000
    DEFINE                                                                     10033000
        CHECKLIST(XX) =  SP2;  LOAD(XX);  SAZN;  GOTO(LOC+12);                 10034000
                         T(C,X);  BRM(CHECKADDRESS);  LOADX(0);                10035000
                         SAZ;  GOTO(LOC-8)#;                                   10036000
%                                                                              10037000
    DEFINE                                                                     10038000
DEBUG  =  LAB(100)#,                                                           10039000
ITEMP  =  LAB(126)#,                                                           10046000
        DEBLANK                 =  LAB(420)#,                                  10047000
        DBREENTER               =  LAB(421)#,                                  10047010
        DBEND                   =  LAB(422)#,                                  10047020
        DBLANKSUP               =  LAB(423)#,                                  10047030
        DBNONBLANK              =  LAB(424)#,                                  10047040
        SCANFORDELIMETER        =  LAB(425)#,                                  10047050
        SFDREENTER              =  LAB(426)#,                                  10047060
        SFDEND                  =  LAB(427)#,                                  10047070
        SFDFOUND                =  LAB(428)#,                                  10047080
        COMPARESTRING           =  LAB(429)#,                                  10047090
        CSREENTER               =  LAB(430)#,                                  10047100
        CSEND                   =  LAB(431)#,                                  10047110
        CSNEQ                   =  LAB(432)#,                                  10047120
        IANDC                   =  LAB(433)#,                                  10047130
        BFFEND                  =  LAB(443)#,                                  10047140
        BFFSTART                =  LAB(444)#,                                  10047150
        ILOOP                   =  LAB(446)#,                                  10047160
        NRMASK                  =  LAB(203)#,                                  10049000
```

Data Documents/Inc.

```
                CHECKTIMER              =  LAB(336)#,                                   10050000
                CLOCK                   =  LAB(133)#,                                   10051000
                TIMEDOUT                =  LAB(93)#,                                    10052000
                READYSTRING             =  LAB(413)#,                                   10052010
                STARTOFSOFTBUFFER       =  LAB(114)#,                                   10052100
                ENDOFSOFTBUFFER         =  LAB(115)#,                                   10052200
                IL3                     =  LAB(92)#,                                    10064000
                IL4                     =  LAB(128)#,                                   10065000
    NOTHINGTODO  =  LAB(113)#,                                                          10072000
                IM                      =  LAB(121)#,                                   10072010
                ENDOFNOTHINGTODO        =  LAB(381)#,                                   10072100
    TESTCR  =  LAB(116)#,                                                               10075000
                TESTCP                  =  LAB(117)#,                                   10076000
                TESTMODEM               =  LAB(311)#,                                   10077000
                TESTLP                  =  LAB(312)#,                                   10078000
                NSECOND                 =  LAB(313)#;                                   10079000
    %                                                                                   10080000
    %                                                                                   10081000
    %                                                                                   10082000
    %       THE FOLLOWING DEFINES ARE FOR PRINTER CONTROL OPERATORS                     10083000
    %                                                                                   10084000
        DEFINE                                                                          10085000
                ENABLELPINTERRUPT       =  29#,         % FUN                        10086000
                DISABLELPINTERRUPT      =  61#,         % FUN                        10087000
                LPCLEAR                 =  93#,         % FUN                        10088000
                LPDATA                  =  29#,         % BTO                        10089000
                LPFORMAT                =  61#,         % BTO                        10090000
                LPERR                   =  29#,         % SEN                        10091000
                ENDOFPAGE               =  61#,         % SEN                        10092000
                LPMOTIONDONE            =  93#,         % SEN                        10093000
                PRINTCYCLEDONE          =  125#,        % SEN                        10094000
                LPREADY                 =  189#,        % SEN                        10095000
                LPDATAREADY             =  221#;        % SEN                        10096000
    %                                                                                   10097000
    %       THE NEXT DEFINE IS FOR THE BITS OF THE PRINTER STATUS WORDS                 10098000
    %                                                                                   10099000
        DEFINE                                                                          10100000
                NOTREADYBIT             =  128#,                                    10101000
                LOCKBIT                 =   64#,                                    10102000
                LOCKBIT2                =   32#,                                    10103000
                EOPBIT                  =   16#,                                    10104000
                LPERRBIT                =    8#,                                    10105000
                MOTIONDONEBIT           =    4#,                                    10106000
                LPBUFFFULLBIT           =    2#,                                    10107000
                BUSYBIT                 =    1#;                                    10108000
    %                                                                                   10109000
    %       THE NEXT DEFINE CONTAINS THE INDEXES FOR SPO MESSAGES                       10110000
    %       PERTAINING TO THE LINE PRINTER                                              10111000
    %                                                                                   10112000
        DEFINE                                                                          10113000
                LPNR                    =  103#,                                    10114000
                LPCK                    =  116#;                                    10115000
    %                                                                                   10116000
    %       THE NEXT DEFINE CONTAINS THE CARRIAGE CONTROL CONSTANTS                     10117000
    %                                                                                   10118000
        DEFINE                                                                          10119000
                SINGLESPACE             =   16#,                                    10120000
                DOUBLESPACE             =   32#,                                    10121000
                PAGESKIP                =    1#;                                    10122000
    %                                                                                   10123000
```

Data Documents/Inc.

```
        DEFINE
            MSG(X)                  =  DS1(ASCII[X])#;                      10124000
    %                                                                       10125000
    %                                                                       10126000
    %                                                                       10127000
    %       THE NEXT DEFINE LAYS OUT THE ARRANGEMENT OF THE PRINTER BUFFER  10128000
    %                                                                       10129000
        DEFINE                                                              10130000
            ENDPOS                  =  0#,                                  10132000
            LINEFORMAT              =  1#,                                  10133000
            LINEREPLICATOR          =  2#,                                  10134000
            FIRSTPRINTCHAR          =  3#;                                  10135000
    %                                                                       10136000
    %                                                                       10137000
    %       THE FOLLOWING ARE LABELS USED IN THE PRINTER ROUTINES           10138000
    %                                                                       10139000
        DEFINE                                                              10140000
            PRINTERNOTREADY         =  LAB(7)#,                             10141000
            PRINTERCHECK            =  LAB(8)#,                             10142000
            NOPRINTERACTIVITY       =  LAB(9)#,                             10143000
            PRINTALINE              =  LAB(10)#,                            10144000
            PRINTTHEBUFFER          =  LAB(11)#,                            10145000
            PRINTERLOCKED           =  LAB(13)#,                            10146000
            PRINTERLOCKED2          =  LAB(14)#,                            10147000
            SETPRINTERNOTREADY      =  LAB(36)#,                            10148000
            PRINTAFTER              =  LAB(17)#,                            10149000
            NORMALPRINT             =  LAB(18)#,                            10150000
            EXPANDPRINTERDATA       =  LAB(19)#,                            10151000
            PRINTERTEST             =  LAB(20)#,                            10152000
            PRINTNOBUFFER           =  LAB(325)#,                           10153000
            ENDOFLPBUFFER           =  LAB(389)#,                           10153100
            STARTOFLPBUFFER         =  LAB(390)#,                           10153110
            LPWRAPAROUND            =  LAB(391)#,                           10153120
            FETCHPRINTCHAR          =  LAB(392)#,                           10153130
            EXITFETCHPRINTCHAR      =  LAB(393)#,                           10153140
            LPUPDATE                =  LAB(394)#,                           10153150
            LOADPRINTCHAR           =  LAB(21)#,                            10154000
            PRINTERLOOP             =  LAB(22)#,                            10155000
             PRINTIT                =  LAB(23)#,                            10156000
            FP                      =  LAB(386)#,                           10156100
            PRINTERTRANSLATE        =  LAB(24)#,                            10157000
            LPTABLE                 =  LAB(45)#,                            10158000
            PRINTERLAB1             =  LAB(25)#,                            10159000
            PRINTERLAB2             =  LAB(26)#;                            10160000
    %                                                                       10161000
    %       THE FOLLOWING DEFINES ARE FOR STORAGE LOCATIONS USED BY THE     10162000
    %        PRINTER ROUTINES                                               10163000
    %                                                                       10164000
        DEFINE                                                              10165000
            PRINTERCCTABLE          =  LAB(177)#,                           10166000
            PRINTERBUFFERS          =  LAB(291)#,                           10167000
            PRINTERTEMP             =  LAB(387)#,      % 2                  10167110
            LPSTATUS                =  LAB(27)#,       % 1                  10168000
            NEXTPRINTERFORMAT       =  LAB(29)#,       % 1                  10169000
            PRINTERFORMATCOUNT      =  LAB(30)#,       % 1                  10170000
            PRINTERLOOPCONTROL      =  LAB(31)#,       % 1                  10171000
            LPPOINTER               =  LAB(32)#,       % 2                  10172000
            LPLIMIT                 =  LAB(33)#,       % 2                  10173000
            PRINTERQ                =  LAB(34)#,       % 2                  10174000
            PRINTERTAIL             =  LAB(35)#;       % 2                  10175000
    %                                                                       10176000
```

Data Documents/Inc.

```
%                                                                       10177000
%       THE FOLLOWIING DEFINES ARE FOR THE I/O OPERATORS NEEDED TO      10178000
%       HANDLE THE CARD READER.                                         10179000
%                                                                       10180000
    DEFINE                                                              10181000
        READHIGHSPEEDREADERSTATUS           = 183#,   % BTI             10181100
        LOADDMA0                            =  23#,   % BTO             10181110
        LOADDMA1                            =  55#,   % BTO             10181120
        INITIATEHIGHSPEEDREADER             =  55#,   % FUN             10181130
        ENABLEHIGHSPEEDREADERINTERRUPT      =  87#,   % FUN             10181140
        INHIBITDMACOUNT                     = 247#,   % FUN             10181150
        HIGHSPEEDREADERMODE                 = 215#,   % BTO & BTI       10181160
        LOADCRTTABLE                        = 151#,   % BTO             10181170
        INCREMENTCRTADDRESS                 = 151#,   % FUN             10181180
        CLEARHIGHSPEEDREADER                =  23#,   % FUN             10181190
        DISABLEHIGHSPEEDREADERINTERRUPT     = 119#,   % FUN             10181200
        HIGHSPEEDREADERNEEDSSERVICE         =  23#,                     10181210
        WRITEUPPERHALFOFCOL                 =  87#,   % BTO             10181220
        WRITELOWERHALFOFCOL                 = 119#,   % BTO             10181230
        READCRTADDRESS                      = 119#,   % BTI             10181240
        ENABLECRINTERRUPT       =   5#,     % FUN                        10182000
        DISABLECRINTERRUPT      =  69#,     % FUN                        10183000
        CRCLEAR                 = 101#,     % FUN                        10184000
        CRINITIATE              =  37#,     % FUN                        10185000
        CRONLINE                =   5#,     % SEN                        10186000
        CRERROR                 =  37#,     % SEN                        10187000
        CRDATAREADY             =  69#,     % SEN                        10188000
        CRBUSY                  = 101#,     % SEN                        10189000
        CRREAD                  =   5#;     % BTI                        10190000
%                                                                       10191000
%                                                                       10192000
%       THE NEXT BLOCK OF DEFINES CONTAIN THE DEFINES FOR THE BITS IN   10193000
%       THE CARD READER STATUS WORD.                                    10194000
%                                                                       10195000
    DEFINE                                                              10196000
        % NOTREADYBIT              = 128#,                               10197000
        % LOCKBIT                  =  64#,                               10198000
        % LOCKBIT2                 =  32#,                               10199000
        CRFIRSTBIT                  =  16#,                             10200000
        CRINHIBITBIT                =   8#,                             10201000
        CRSUPRESSNRMESSBIT          =   4#,                             10202000
        CRBUFFFULLBIT               =   2#;                             10203000
        % BUSYBIT                   =   1#;                             10204000
%                                                                       10205000
%                                                                       10205100
    DEFINE                                                              10205110
        CRSCANBIT                   =   4#;                             10205120
%                                                                       10205130
%                                                                       10205140
%                                                                       10205150
%                                                                       10205160
    DEFINE                                                              10205170
        CRTBIT                      =   4#,                             10205180
        EOFBIT                      =  64#,                             10205190
        FEEDCHECKBIT                =   8#,                             10205195
        CRERRORBIT                  =  16#;                             10205200
%                                                                       10205210
%                                                                       10205220
%                                                                       10206000
%       THE NEXT SECTION OF DEFINES CONTAINS THE INDECES IF THE SPO     10207000
```

Data Documents/Inc.

```
%          MESSAGES USED BY THE CARD READER ROUTINES.                    10208000
%                                                                        10209000
     DEFINE                                                              10210000
          CRNR                    =  65#,                                10211000
          NOMEM                   =  12#,                                10212000
          ICC                     =  203#,                               10212100
          CRERR                   =  78#,                                10213000
          CRINV                   =  92#;                                10214000
%                                                                        10215000
%                                                                        10216000
%          THE FOLLOWING DEFINES ARE STORAGE AREAS USED BY THE CARD READE10217000
%          CODE.                                                         10218000
%                                                                        10219000
     DEFINE                                                              10220000
          EBCDICVECTOR            =  LAB(141)#,                          10221000
          BCLVECTOR               =  LAB(40)#,    % VECTOR 16 × 1        10222000
          CRTABLE                 =  LAB(41)#,    % 2                    10223000
          CURRENTCARDTABLE        =  LAB(74)#,    % 2                    10224000
          CRBUFFER                =  LAB(42)#,    % VECTOR 80 × 2         10225000
          CRSTATUS                =  LAB(43)#,    % 1                    10226000
          CRFLAGS                 =  LAB(44)#,    % 1                    10227000
          CRSUPRESSCOUNT          =  LAB(46)#,    % 1                    10228000
          CRCOUNT                 =  LAB(72)#,    % 1                    10229000
          CRFF                    =  LAB(412)#,                          10229100
          CRPOINTER               =  LAB(47)#,    % 2                    10230000
          CRFIRSTSPACE            =  LAB(397)#,                          10230100
          CRTEMP                  =  LAB(48)#,    % 2                    10231000
          CRTEMP2                 =  LAB(401)#,                          10231100
          CRTEMP3                 =  LAB(402)#,                          10231110
          CRSCRATCH               =  LAB(49)#,    % 1                    10232000
          CRSCRATCH2              =  LAB(50)#,    % 1                    10233000
          CARDREADERQ             =  LAB(51)#,    % 2                    10234000
          CARDREADERQTAIL         =  LAB(52)#;    % 2                    10235000
%                                                                        10236000
%                                                                        10237000
%          THE NEXT BLOCK OF DEFINES IS FOR THE LABELS USED IN THE CARD  10238000
%          READER CODE.                                                  10239000
%                                                                        10240000
     DEFINE                                                              10241000
          LOADCRT                 =  LAB(408)#,                          10241100
          STARTCRTLOAD            =  LAB(409)#,                          10241110
          LOADCRTLOOP             =  LAB(410)#,                          10241120
          LOADCRTSINGLE           =  LAB(411)#,                          10241130
          CRINTERRUPT             =  LAB(53)#,                           10242000
          CARDREADERINTERRUPTNOTDATAREADY  =  LAB(54)#,                  10243000
          EMPTYCARDREADERHOPPER   =  LAB(55)#,                           10244000
          CRNOTREADY              =  LAB(56)#,                           10245000
          CRREADY                 =  LAB(57)#,                           10246000
          CARDREADERSTARTIO       =  LAB(59)#,                           10247000
          CARDREADERLOCKED        =  LAB(60)#,                           10248000
          CARDREADERLOCKED2       =  LAB(61)#,                           10249000
          MOVECRBUFFER            =  LAB(62)#,                           10250000
          GETNEXTCARDCOL          =  LAB(63)#,                           10251000
          TESTFORCRDONE           =  LAB(64)#,                           10252000
          MAYBEENDOFCRSUPRESSION  =  LAB(65)#,                           10253000
          LOCALTESTFORCRDONE      =  LAB(66)#,                           10254000
          INITIALIZECRSUPRESSION  =  LAB(67)#,                           10255000
          DONTTRANSFERCRBUFFER    =  LAB(68)#,                           10256000
          CRRESTARTSCAN           =  LAB(395)#,                          10256100
          STORECRCHAR             =  LAB(396)#,                          10256110
```

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```
            CROUTOFSPACE          = LAB(398)#,                                10256120
            ENDOFCRBUFFER         = LAB(399)#,                                10256130
            STARTOFCRBUFFER       = LAB(400)#,                                10256140
            LOOKAGAIN             = LAB(434)#,                                10256150
            LOOKFORNEXT           = LAB(435)#,                                10256160
            ENDCARD               = LAB(436)#,                                10256170
            BCLCARD               = LAB(437)#,                                10256180
            EBCDICCARD            = LAB(438)#,                                10256190
            BCLCRD                = LAB(439)#,                                10256200
            EBCCRD                = LAB(440)#,                                10256210
            ENDCRD                = LAB(441)#,                                10256220
            CREORGETCARD          = LAB(442)#,                                10256230
            CRNOTCC               = LAB(445)#,                                10256240
            CARDREADERERROR       = LAB(69)#,                                 10257000
            CHECKFORINVALIDCHAR   = LAB(70)#,                                 10258000
            STORECARDCHAR         = LAB(73)#,                                 10259000
            READCHECK             = LAB(75)#,                                 10260000
            INVALIDCARDCHAR       = LAB(71)#;                                 10261000
      %                                                                       10262000
      %                                                                       10263000
      %     THE NEXT BLOCK OF DEFINES DEFINES THE MODEM OPERATORS.            10264000
      %                                                                       10265000
      DEFINE                                                                  10266000
            ENABLEMODEMINTERRUPT  =  38#,     % FUN                         10267000
            DISABLEMODEMINTERRUPT =  70#,     % FUN                         10268000
            TURNONDTR             = 102#,     % FUN                         10269000
            TURNONRS              = 134#,     % FUN                         10270000
            TURNOFFRS             = 166#,     % FUN                         10271000
            GOTOBITMODE           =   6#,     % FUN                         10272000
            GOTOBYTEMODE          = 198#,     % FUN                         10273000
            MODEMCLEAR            = 230#,     % FUN                         10274000
            BITMODE               =   6#,     % SEN                         10275000
            BYTEREQUEST           =  38#,     % SEN                         10276000
            DATAPRESENT           =  70#,     % SEN                         10277000
            CARRIER               = 102#,     % SEN                         10278000
            CLEARTOSEND           = 134#,     % SEN                         10279000
            INTERLOCKON           = 166#,     % SEN                         10280000
            RINGRECEIVED          = 198#,     % SEN                         10281000
            ODDPARITY             = 230#,     % SEN                         10282000
            MODEMREAD             =   6#,     % BTI                         10283000
            MODEMWRITE            =   6#;     % BTO                         10284000
      %                                                                       10285000
      %                                                                       10286000
      %     THE NEXT GROUP OF DEFINES LISTS THE MODEM STATUS CONDITIONS.      10287000
      %                                                                       10288000
      DEFINE                                                                  10289000
            IDLE                  =   0#,                                     10290000
            IDLERECEIVE           =   2#,                                     10291000
            TRANSMITENQ           =   4#,                                     10292000
            RECEIVEENQ            =   6#,                                     10293000
            TRANSMITACK           =   8#,                                     10294000
            RECEIVEACK            =  10#,                                     10295000
            TRANSMITNAK           =  12#,                                     10296000
            TRANSMITHEADER        =  16#,                                     10297000
            RECEIVEHEADER         =  18#,                                     10298000
            TRANSMITMSG           =  20#,                                     10299000
            RECEIVEMSG            =  22#,                                     10300000
            TRANSMITBCC           =  24#,                                     10301000
            RECEIVEBCC            =  26#,                                     10302000
            ACKNOWLEDGE           =  28#,                                     10303000
```

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```
            RECEIVERESPONSE         =  30#,                                 10304000
            TRANSMITEOT             =  32#,                                 10305000
            LOOKFORRING             =  34#;                                 10306000
    %                                                                       10307000
    %                                                                       10308000
    %        THE FOLLOWING DEFINE DECLARES THE SPO MESSAGES                 10309000
    %        FOR THE MODEM ROUTINES.                                        10310000
    %                                                                       10311000
        DEFINE                                                              10312000
            HLMESS              =  0#,                                      10313000
            NOSYSTEMLINK        =  50#,                                     10314000
            CONNECTIONMADE      =  143#,                                    10315000
            CLSOFF              =  35#,                                     10316000
            MISSINGMESSAGE      =  19#;                                     10317000
    %                                                                       10318000
    %                                                                       10319000
    %        THE NEXT GROUP OF DEFINES LAYS OUT THE MODEM FLAG.             10320000
    %                                                                       10321000
        DEFINE                                                              10322000
            LINEACTIVEBIT       =  128#,                                    10323000
            MYSTARTBIT          =  64#,                                     10324000
            CONNECTEDBIT        =  32#,                                     10325000
            RINGBIT             =  16#,                                     10326000
            INTERLOCKBIT        =  8#,                                      10327000
            DTRBIT              =  4#,                                      10328000
            CARRIERBIT          =  2#,                                      10329000
            CLEARTOSENDBIT      =  1#;                                      10330000
    %                                                                       10331000
    %                                                                       10332000
    %        THE FOLLOWING BLOCK OF DEFINES ASSIGNES THE MODEM LABELS.      10333000
    %                                                                       10334000
        DEFINE                                                              10335000
            INTERLOCKINTERRUPT  =  LAB(130)#,                               10336000
            LOSSOFINTERLOCK     =  LAB(131)#,                               10337000
            INTERLOCKCLEANUP    =  LAB(152)#,                               10338000
            INTERLOCK           =  LAB(234)#,                               10339000
            CARRIERINTERRUPT    =  LAB(134)#,                               10340000
            RINGINTERRUPT       =  LAB(135)#,                               10341000
            CLEARTOSENDINTERRUPT=  LAB(136)#,                               10342000
            INITIATERECEIVE     =  LAB(137)#,                               10343000
            SYNCHRONIZERECEIVE  =  LAB(138)#,                               10344000
            LOOKFORDATA         =  LAB(337)#,                               10345000
            LOOKFORENQ          =  LAB(139)#,                               10346000
            IGNOREMESSAGE       =  LAB(335)#,                               10347000
            SETUPFORSYNC        =  LAB(140)#,                               10348000
            LOOKFORETX          =  LAB(142)#,                               10349000
            FOUNDANENQ          =  LAB(369)#,                               10349100
            ENDOFBLOCK          =  LAB(370)#,                               10349200
            INCOMMING           =  LAB(144)#,                               10350000
            LASTTRANOK          =  LAB(145)#,                               10351000
            CLOSEMSG            =  LAB(326)#,                               10352000
            CLOSETHELINE        =  LAB(146)#,                               10354000
            LOOKFORACK          =  LAB(147)#,                               10355000
            FOUNDTHEACK         =  LAB(149)#,                               10356000
            FOUNDANAK           =  LAB(150)#,                               10357000
            DECYPHERRESPONSE    =  LAB(151)#,                               10358000
            LOOKFORHEADER       =  LAB(153)#,                               10359000
            STOREAMESSAGE       =  LAB(155)#,                               10361000
            MODEMSTORE          =  LAB(156)#,                               10362000
            REVERSESUPRESS      =  LAB(157)#,                               10363000
```

Data Documents/Inc.

```
MODEMFETCH                  = LAB(158)#,                    10364000
BLANKSUPRESSION             = LAB(159)#,                    10365000
SUPRESSIT                   = LAB(160)#,                    10366000
LPSUPRESS                   = LAB(161)#,                    10367000
TOOMANYBLANKS               = LAB(162)#,                    10368000
CHECKBCC                    = LAB(163)#,                    10369000
LASTRECOK                   = LAB(322)#,                    10370000
BYPASSSUPRESS               = LAB(318)#,                    10371000
FOUNDANEOT                  = LAB(319)#,                    10372000
PLACEENDOFBUFFERPOSITION= LAB(320)#,                        10373000
BADRECNO                    = LAB(164)#,                    10374000
FORMATERROR                 = LAB(166)#,                    10375000
MSGTOOLONG                  = LAB(168)#,                    10376000
LOOKFORENDOFBLOCK           = LAB(169)#,                    10377000
EOM                         = LAB(89)#,                     10378000
GETACHAR                    = LAB(171)#,                    10379000
INITIATETRANSMIT            = LAB(172)#,                    10380000
OKTOSEND                    = LAB(173)#,                    10381000
SYNCHRONIZETRANSMISSION     = LAB(174)#,                    10382000
TRANSMITSYNC                = LAB(175)#,                    10383000
ACKNOWLEDGELASTREC          = LAB(176)#,                    10384000
NOLINEACTIVITY              = LAB(211)#,                    10385000
WAKEUPLINE                  = LAB(178)#,                    10386000
KILLTHELINE                 = LAB(179)#,                    10387000
SENDAHEADER                 = LAB(180)#,                    10388000
TAGAIN                      = LAB(182)#,                    10389000
EOB                         = LAB(184)#,                    10390000
ADDTOMESSAGE                = LAB(185)#,                    10391000
SENDAC                      = LAB(186)#,                    10392000
FINISHTRANSMIT              = LAB(187)#,                    10393000
READYTODROPLINE             = LAB(189)#,                    10394000
ABORTTRANSMIT               = LAB(190)#,                    10395000
STUFFIT                     = LAB(361)#,                    10395100
IGNOREDATAINTERRUPTS        = LAB(191)#,                    10396000
ANSWERRING                  = LAB(193)#,                    10397000
IGNORERING                  = LAB(194)#,                    10398000
TSLEEPER                    = LAB(195)#,                    10399000
RSLEEPER                    = LAB(196)#,                    10400000
TSLEEPHERE                  = LAB(331)#,                    10401000
RSLEEPHERE                  = LAB(332)#,                    10402000
FINDAMESSAGE                = LAB(197)#,                    10403000
FOUNDTRAFFIC                = LAB(201)#,                    10407000
SETUPUDINFO                 = LAB(323)#,                    10408000
NORMALCLEARTOSEND           = LAB(202)#,                    10409000
JUSTIDLEDTHELINE              = LAB(261)#,                  10410000
NORMALCARRIER               = LAB(205)#,                    10411000
FINDTHEACTION               = LAB(206)#,                    10412000
HANDLEBADTRAN               = LAB(209)#,                    10413000
CARRIERON                   = LAB(210)#,                    10414000
MODEMIDLE                   = LAB(212)#,                    10415000
OPENALINE                   = LAB(213)#,                    10416000
NEWACTIVITY                 = LAB(95)#,                     10417000
STORECC                     = LAB(219)#,                    10423000
SKIPBEFORE                  = LAB(220)#,                    10424000
SIMPLESKIP                  = LAB(221)#,                    10425000
SPACEIT                     = LAB(222)#,                    10426000
DSFIXED                     = LAB(223)#,                    10427000
DSFIXUP                     = LAB(224)#,                    10428000
SIMPLESPACE                 = LAB(225)#,                    10429000
STOREMSG                    = LAB(127)#,                    10430000
```

Data Documents/Inc.

```
                SENDANAK                = LAB(129)#,                    10431000
                SENDACK                 = LAB(188)#,                    10432000
                NOSPACEFORMODEM         = LAB(83)#,                     10433000
                RETRY                   = LAB(84)#,                     10434000
                LINKBACK                = LAB(86)#,                     10435000
                MAKEANEWQ               = LAB(87)#,                     10436000
                HL                      = LAB(88)#,                     10437000
                EOREC                   = LAB(94)#,                     10438000
                MAKENOTREADY            = LAB(143)#,                    10439000
                MAKEREADY               = LAB(165)#,                    10440000
                NRSTORE                 = LAB(415)#,                    10440100
                RSTORE                  = LAB(416)#,                    10440110
                CSTORE                  = LAB(417)#,                    10440120
                XIT                     = LAB(226)#;                    10441000
        %                                                               10442000
        %                                                               10443000
        %       THE NEXT BLOCK OF DEFINES RESERVES SPACE FOR THE MODEM STORAGE10444000
        %       LOCATIONS.                                              10445000
        %                                                               10446000
            DEFINE                                                      10447000
                RECEIVELABEL            = LAB(230)#,                    10448000
                TRANSMITLABEL           = LAB(231)#,                    10449000
                RINGLABEL               = LAB(232)#,                    10450000
                CARRIERLABEL            = LAB(233)#,                    10451000
                CLEARTOSENDLABEL        = LAB(235)#,                    10452000
                MODEMSTATUS             = LAB(236)#,                    10453000
                NEXTACTIVITY            = LAB(237)#,                    10454000
                LASTACTIVITY            = LAB(238)#,                    10455000
                ACTIONTYPE              = LAB(239)#,                    10456000
                MCOUNT                  = LAB(240)#,                    10457000
                RCOUNT                  = LAB(96)#,                     10458000
                RECNO                   = LAB(241)#,                    10459000
                TRANNO                  = LAB(242)#,                    10460000
                BCC                     = LAB(243)#,                    10461000
                MODEMFLAGS              = LAB(244)#,                    10462000
                MC1                     = LAB(245)#,                    10463000
                MC2                     = LAB(246)#,                    10464000
                MC3                     = LAB(321)#,                    10465000
                MODEMTEMP               = LAB(247)#,                    10466000
                UNIT                    = LAB(248)#,                    10467000
                UNITNO                  = LAB(183)#,                    10468000
                UNITUPDATE              = LAB(327)#,                    10469000
                STOREDCOUNT             = LAB(198)#,                    10469010
                FIRSTPOINTER            = LAB(199)#,                    10469020
                UNITBUFFEREND           = LAB(214)#,                    10469040
                UNITBUFFERSTART         = LAB(215)#,                    10469050
                UNITTAIL                = LAB(216)#,                    10469060
                UNITLIMIT               = LAB(120)#,                    10469070
                UD1                     = LAB(249)#,                    10473000
                UD2                     = LAB(250)#,                    10474000
                UDOFFSET                = LAB(251)#,                    10475000
                UDLENGTH                = LAB(252)#,                    10476000
                UDTOGS                  = LAB(253)#,                    10477000
                ACTIONLABEL             = LAB(255)#,                    10478000
                POWERSOF10              = LAB(256)#,                    10479000
                TOGTABLE                = LAB(37)#,                     10480000
                LENGTHTABLE             = LAB(38)#,                     10481000
                LASTTRAN                = LAB(77)#,                     10482000
                UNITBUFFERSTARTTABLE    = LAB(407)#,                    10482100
                UNITBUFFERENDTABLE      = LAB(125)#,                    10482110
```

Data Documents/Inc.

```
                UNITUPDATETABLE         =  LAB(124)#,                    10482120
                UNITLIMITTABLE          =  LAB(123)#,                    10482130
                MODEMLAB1               =  LAB(122)#,                    10482140
                UPDATEVECTOR             =  LAB(414)#,                   10482150
                LFP                      =  LAB(418)#,                   10482160
                LRP                      =  LAB(419)#,                   10482170
                QUEUES                   =  LAB(78)#,                    10483000
                SOFTQTAIL                =  LAB(167)#,                   10484000
                MODEMPOINTER             =  LAB(80)#,                    10485000
                LASTREC                  =  LAB(81)#,                    10486000
                OFFSETTABLE              =  LAB(82)#,                    10487000
                OUTPUTUNITTABLE          =  LAB(12)#,                    10488000
                INPUTUNITTABLE           =  LAB(58)4,                    10489000
                CC1TABLE                 =  LAB(181)#,                   10490000
                MASKTABLE                =  LAB(334)#,                   10491000
                MBUFF                    =  LAB(254)#;                   10492000
        %                                                                 10492100
        %                                                                 10492110
            DEFINE                                                        10492120
                FILLOUTBIT               =   1#,                         10492130
                ENDPOINTBIT              =   2#,                         10492140
                REVERSEBIT               =   4#;                         10492150
        %                                                                 10492160
        %                                                                 10492170
        %                                                                 10493000
        %                                                                 10494000
        %       THE NEXT GROUP OF DEFINITIONS IS USED BY THE MODEM CODE.  10495000
        %                                                                 10496000
            DEFINE                                                        10497000
        %                                                                 10498000
                ENS    =    GOTO(XIT)#,                                   10499000
        %                                                                 10500000
                DEBUGDUMP(X)    =   II := PRECISION;                      10501000
                                    SP1;      LOAD(X);                    10502000
                                    STIND(DEBUG);                         10503000
                                    SP2;      LOAD(DEBUG);                10504000
                                    IAR;      ST(DEBUG);                  10505000
                                    EMIT(15 + II,1,2);   PRECISION := II#, 10506000
        %                                                                 10507000
                RECEIVE      =      BRM(GETACHAR);                        10508000
                                    PRECISION := 1#,                      10509000
        %                                                                 10510000
                SEND(X)      =   IF PRECISION ≠ 1 THEN SP1;               10511000
                                 LOAD(X);                                 10512000
                                 BRM(SENDAC)#,                            10513000
        %                                                                 10514000
                TRANSMIT(X)  =     IF PRECISION ≠ 1 THEN SP1;             10515000
                                   LOAD(X);                               10516000
                                   BTO(MODEMWRITE)#,                      10517000
        %                                                                 10518000
                INITIALIZEBCC  =    IF PRECISION ≠ 1 THEN SP1;            10519000
                                    CLA;                                  10520000
                                    ST(BCC)#,                             10521000
        %                                                                 10522000
                INCREMENT(X)   =    LOAD(X);                              10523000
                                    IAR;                                  10524000
                                    ST(X)#,                               10525000
        %                                                                 10526000
                NEXT(X)    =    IF PRECISION ≠ 2 THEN SP2;                10527000
                                LOAD(X);                                  10528000
```

Data Documents/Inc.

```
                    ST(NEXTACTIVITY)#;                                      10529000
%                                                                           10530000
%                                                                           10531000
%       THIS GROUP OF DEFINES DECLARES THE OPERATORS TO HANDLE              10532000
%       SPO CONSOL READS AND WRITES.  THERE ARE OTHER OPERATORS,            10533000
%       BUT THE SOFTWARE DOES NOT USE THEM.                                 10534000
%                                                                           10535000
    DEFINE                                                                  10536000
        SPOCLEAR            =  33#,     % FUN                               10537000
        SPOWRITEREADY       =  33#,     % SEN                               10538000
        SPOREADREADY        =  65#,     % SEN                               10539000
        SPOWRITE            =   1#,     % BTO                               10540000
        SPOREAD             =   1#;     % BTI                               10541000
%                                                                           10542000
%                                                                           10543000
%       THE NEXT FEW DEFINES DECLARE THE SPO STATUS BITS.                   10544000
%                                                                           10545000
    DEFINE                                                                  10546000
        DONTSTOREBIT        =  128#,                                        10547000
        ECHOBIT             =   64#,                                        10548000
        KEYINCONTINUEDBIT   =   32#,                                        10549000
        %  NOT USED         =   16#,                                        10550000
        %  NOT USED         =    8#,                                        10551000
        LOCALBIT            =    4#,                                        10552000
        OUTBUSYBIT          =    2#,                                        10553000
        INBUSYBIT           =    1#;                                        10554000
%                                                                           10555000
%       THE FOLLOWING IS THE ONLY SPO MESSAGE FOR SPO.                      10556000
%                                                                           10557000
    DEFINE                                                                  10558000
        LINEINUSE           =  166#,                                        10558100
        REENTERKEYIN        =  128#;                                        10559000
%                                                                           10560000
%                                                                           10561000
%                                                                           10562000
%       THE NEXT BLOCK OF DEFINES IS FOR MACRO OPTIONS USED BY              10563000
%       THE SPO CODE SPECIFICALLY AND BY OTHER PIECES OF CODE               10564000
%       POSSIBILY.                                                          10565000
%                                                                           10566000
    DEFINE                                                                  10567000
        SPOUT(X)    =   IF PRECISION ≠ 2 THEN SP2;                          10568000
                        LOAD(X);                                            10569000
                        BRM(ENTERSPOUTMESSAGE)#,                            10570000
%                                                                           10571000
        SPOUTSLEEP(X)   =   IF PRECISION ≠ 2 AND X ≠ 0 THEN SP2;            10572000
                            IF X = 0 THEN CLA ELSE DESC(X);                 10573000
                            BRM(SPOSLEEP)#,                                 10574000
%                                                                           10575000
        CHAINDOWN   =   T(C,X);                                             10576000
                        LOADX(0);                                           10577000
                        SA2;                                                10578000
                        GOTO(LOC-5)#;                                       10579000
%                                                                           10580000
%                                                                           10581000
%       THE NEXT BLOCK OF CODE CONTAINS THE LABELS FOR THE SPO CODE.        10582000
%                                                                           10583000
    DEFINE                                                                  10584000
        SPOINPUT            =  LAB(263)#,                                   10585000
        ACTUALSPOREAD       =  LAB(264)#,                                   10586000
        ENDOFKEYIN          =  LAB(265)#,                                   10587000
```

Data Documents/Inc.

```
                SPOQUEUEACTIVE          = LAB(267)#,                    10588000
                LEAVEKEYIN              = LAB(268)#,                    10589000
                FOUNDWRU            = LAB(375)#,                        10589100
                LINEINACTIVE        = LAB(376)#,                        10589200
                ENQAGAIN            = LAB(377)#,                        10589300
                DELETEKEYIN             = LAB(269)#,                    10590000
                ENDOFLINE               = LAB(270)#,                    10591000
                NEWKEYIN                = LAB(271)#,                    10592000
                NOSPACEFORKEYIN         = LAB(272)#,                    10593000
                CHECKKEYINBUFFER    = LAB(324)#,                        10594000
                STARTOFKEYINBUFFER  = LAB(296)#,                        10595000
                ENDOFKEYINBUFFER    = LAB(297)#,                        10596000
                ENDOFSPOBUFFER      = LAB(299)#,                        10597000
                STARTOFSPOBUFFER    = LAB(301)#,                        10598000
                SPOBREAK            = LAB(302)#,                        10599000
                IDLESPOREAD             = LAB(279)#,                    10600000
                SPOUTNOTBUSY            = LAB(280)#,                    10601000
                NOSYSTEMSPOUTS      = LAB(76)#,                         10602000
                ECHOBACKKEYIN           = LAB(281)#,                    10603000
                LONGKEYIN               = LAB(282)#,                    10604000
                ENDOFECHOBACK           = LAB(283)#,                    10605000
                FINDASPOUT              = LAB(284)#,                    10606000
                SPOUTMSG                = LAB(285)#,                    10607000
                ENDOFSPOUT              = LAB(287)#,                    10608000
                SPOFETCH            = LAB(273)#,                        10609000
                ENDOFSPOLINE        = LAB(274)#,                        10609500
                FOUNDSPOUT          = LAB(275)#,                        10610000
                ENTERSPOUTMESSAGE       = LAB(292)#,                    10612000
                SPOSLEEP                = LAB(293)#,                    10613000
                TESTSPOINPUT            = LAB(294)#,                    10614000
                TESTSPOOUTPUT           = LAB(310)#;                    10615000
        %                                                               10616000
        %                                                               10617000
        %       THE NEXT BLOCK OF DEFINES IS FOR THE STORAGE LOCATIONS  10618000
        %       USED BY THE SPO CODE.                                   10619000
        %                                                               10620000
            DEFINE                                                      10621000
                SPOSTATUS               = LAB(314)#,                    10622000
                KEYINQ              = LAB(15)#,                         10623000
                KEYINQTAIL          = LAB(16)#,                         10624000
                SPOUTQ              = LAB(79)#,                         10625000
                SPOUTQTAIL          = LAB(315)#,                        10626000
                SPOUTLABEL              = LAB(295)#,                    10628000
                SPOUTCOUNT              = LAB(298)#,                    10631000
                SPOPOINTER          = LAB(300)#,                        10633000
                KEYINPOINTER            = LAB(303)#,                    10636000
                KEYINCOUNT              = LAB(304)#,                    10637000
                CHAR                    = LAB(305)#,                    10638000
                SPOTABLE                = LAB(306)#,                    10639000
                SPOMAX                  = LAB(307)#,                    10640000
                SPOMESS                 = LAB(317)#,                    10641000
                NEXTSPOUT               = LAB(308)#,                    10642000
                PUTSPOUT                = LAB(309)#;                    10643000
        %                                                               10644000
        PROCEDURE TSLEEP(XX);                                           10645000
                VALUE XX;                                               10646000
                REAL XX;                                                10647000
            IF XX = 0 THEN BRM(TSLEEPHERE) ELSE                         10648000
                BEGIN                                                   10649000
                    IF PRECISION ≠ 2 THEN SP2;                          10650000
```

Data Documents/Inc.

```
                DESC(XX);                                                   10651000
                GOTO(TSLEEPER);                                             10652000
            END;                                                            10653000
%                                                                           10654000
PROCEDURE RSLEEP(XX);                                                       10655000
            VALUE XX;                                                       10656000
            REAL XX;                                                        10657000
        IF XX = 0 THEN BRM(RSLEEPHERE) ELSE                                 10658000
           IF XX = IGNOREDATAINTERRUPTS THEN GOTO(STUFFIT) ELSE             10658100
            BEGIN                                                           10659000
                IF PRECISION ≠ 2 THEN SP2;                                  10660000
                DESC(XX);                                                   10661000
                GOTO(RSLEEPER);                                             10662000
            END;                                                            10663000
%                                                                           10664000
%                                                                           10664100
    DEFINE                                                                  10664110
            CPBUFFFULLBIT           = 4#;                                   10664120
%                                                                           10664130
%                                                                           10664140
%       THE FOLLOWING DEFINES DECLARE THE PUNCH OPERATORS.                  10665000
%                                                                           10666000
    DEFINE                                                                  10667000
            CPCLEAR                 = 167#,     % FUN                       10668000
            CPINITIATE              = 135#,     % FUN                       10669000
            ENABLECPINTERRUPT       = 7#,       % FUN                       10670000
            CPWRITEREADY            = 135#,     % SEN                       10671000
            CPFIRSTFOUR             = 103#,     % SEN                       10672000
            CPERROR                 = 71#,      % SEN                       10673000
            CPBUSY                  = 39#,      % SEN                       10673100
            CPREADY                 = 7#,       % SEN                       10674000
            CPWRITE                 = 7#;       % BTO                       10675000
%                                                                           10676000
%                                                                           10677000
%       THE NEXT GROUP OF DEFINES DECLARES THE STORAGE LOCATIONS NEEDE      10678000
%       FOR HANDLING THE PUNCH.                                             10679000
%                                                                           10680000
    DEFINE                                                                  10681000
            PUNCHQUEUE              = LAB(338)#,    % 2                      10682000
            PUNCHQUEUETAIL          = LAB(339)#,    % 2                      10683000
            CPSTATUS                = LAB(340)#,    % 1                      10684000
            PUNCHCOUNT              = LAB(341)#,    % 1                      10685000
            PC2                     = LAB(342)#,    % 1                      10686000
            ENDOFCPBUFFER           = LAB(382)#,                            10686100
            CPTEMP                  = LAB(343)#,    % 4                      10687000
            CPTEMP2                 = LAB(371)#,      % 4                    10687100
            CPTEMP3                 = LAB(372)#,      % 4                    10687200
            CPRESTOREPRECISION      = LAB(373)#,      % 1                    10687300
            PRECISIONCON            = LAB(374)#,      % 4                    10687400
            CURRENTPUNCHTABLE       = LAB(344)#,    % 2                      10688000
            PUNCHBUFFER             = LAB(345)#,    % 80 × 2                 10689000
            BCLPUNCHTABLE           = LAB(346)#,    % 80 × 2                 10690000
            EBCDICPUNCHTABLE        = LAB(452)#,      % 80 × 2               10690010
            PUNCHBUFFERS            = LAB(360)#;    % 1                      10690100
%                                                                           10691000
%                                                                           10692000
%       THE NEXT GROUP OF DEFINES DECLARES THE LABELS NEEDED                10693000
%                                                                           10694000
%                                                                           10695000
    DEFINE                                                                  10696000
```

Data Documents/Inc.

```
            CPSTR                   =  LAB(447)#,                                10696100
            SPOEBCDIC               =  LAB(448)#,                                10696110
            SPOBCL                  =  LAB(449)#,                                10696120
            MSGTOSYSTEM             =  LAB(450)#,                                10696130
            SPOFORGETMSG            =  LAB(451)#,                                10696140
            CPINTERRUPT             =  LAB(347)#,                                10697000
            CPTRANSFERDATA          =  LAB(348)#,                                10698000
            CPFINISHED              =  LAB(350)#,                                10700000
            CPUNCHERROR             =  LAB(351)#,                                10701000
            PUNCHCHECKER            =  LAB(352)#,                                10702000
            CPREADYNOW              =  LAB(353)#,                                10703000
            PUNCHCONVERT            =  LAB(354)#,                                10704000
            EXPANDPUNCHDATA         =  LAB(355)#,                                10705000
            ORDERPUNCHCYCLE         =  LAB(356)#,                                10706000
            BLANKOUTPUNCH           =  LAB(383)#,                                10706100
            PUNCHRETRY              =  LAB(403)#,                                10706200
            CPFETCH                 =  LAB(404)#,                                10706300
            STARTOFPUNCHBUFFER      =  LAB(405)#,                                10706400
            ENDOFPUNCHBUFFER        =  LAB(406)#,                                10706500
            CPNOTREADY              =  LAB(357)#,                                10707000
            CPLOCKED                =  LAB(358)#,                                10708000
            CPLOCKED2               =  LAB(359)#;                                10709000
        %                                                                        10710000
        %                                                                        10711000
        %       THE NEXT TWO DECLARATIONS ARE FOR THE PUNCH ERROR                10712000
        %       MESSAGES.                                                        10713000
        %                                                                        10714000
        DEFINE                                                                   10715000
            CPNR                    =  178#,                                     10716000
            CPCK                    =  191#;                                     10717000
        %                                                                        10718000
        %                                                                        10719000
        %                                                                        20000000
        %                                                                        20001000
        %       PROCEDURE SPACEHANDLER CONTAINS THE LOGIC NEEDED TO PERFORM      20002000
        %       THE SPACE HANDLING FUNCTIONS REQUIRED BY ANY CONFIGURATION       20003000
        %       OF THE DC-1000.                                                  20004000
        %                                                                        20005000
        PROCEDURE SPACEHANDLER;                                                  20006000
            BEGIN                                                                20007000
                REAL SEGMENT;                                                    20008000
        %                                                                        20009000
        %                                                                        20214000
        %                                                                        20215000
            END OF SPACE HANDLER;                                                20216000
        %                                                                        20217000
        %                                                                        20218000
        %       THE PROCEDURE TRANSLATORS CONTAINS THE LOGIC TO INCLUDE ANY      20219000
        %       TRANSLATORS NEEDED BY ANY OTHER PART OF THE DC-1000 SYSTEM.      20220000
        %                                                                        20221000
        PROCEDURE TRANSLATORS;                                                   20222000
            BEGIN                                                                20223000
                REAL SEGMENT;                                                    20224000
        %                                                                        20225000
            IF PRINTERTOG THEN                                                   20226000
               BEGIN                                                             20227000
            LABL(PRINTERTRANSLATE);                                              20228000
                HEADING("PRINTER"," TRANSL","ATE    ",0,3);                      20229000
        %                                                                        20230000
                DS2(0);                                                          20231000
```

Data Documents/Inc.

```
            SP1;                                                    20232000
            SL1;                                                    20233000
            RL1;                                                    20234000
            SL1;                                                    20235000
            SR1;                                                    20236000
            IAR;                                                    20237000
            SR1;                                                    20238000
            SP2;                                                    20239000
            SL8;                                                    20240000
            SR8;                                                    20241000
            ADD(DES(LPTABLE));                                      20242000
            T(C,X);                                                 20243000
            SP1;                                                    20244000
            LOADX(0);                                               20245000
            GOTOIND(PRINTERTRANSLATE);                              20246000
        END;                                                        20247000
%                                                                   20248000
    END OF TRANSLATORS;                                             20249000
%                                                                   20250000
%                                                                   20251000
%       THE FOLLOWING PROCEDURE RESERVES SPACE NEEDED BY THE VARIOUS 20252000
%       PERIPHERAL HANDLING ROUTINES.                               20253000
%                                                                   20254000
PROCEDURE STORAGE;                                                  20255000
    BEGIN                                                           20256000
        REAL SEGMENT;                                               20257000
%                                                                   20258000
    LABL(DEBUG);                                                    20259000
            HEADING("DEBUG   ",0,0,0,1);                            20260000
        DS2(MEMORY);                                                20261000
%                                                                   20262000
    LABL(CLOCK);                                                    20271000
            HEADING("CLOCK   ",0,0,0,1);                            20272000
        DS3(0);                                                     20273000
%                                                                   20273100
    LABL(BFFSTART);                                                 20273200
            HEADING("BFFSTAR","T       ",0,0,2);                    20273300
        DS2(0);                                                     20273400
%                                                                   20273500
    LABL(BFFEND);                                                   20273600
            HEADING("BFFEND ",0,0,0,1);                             20273700
        DS2(0);                                                     20273800
%                                                                   20274000
    LABL(NRMASK);                                                   20275000
            HEADING("NR MASK",0,0,0,1);                             20276000
        DS1(1 + (IF PUNCHTOG THEN 4 ELSE 0) +                       20277000
              (IF PRINTERTOG THEN 2 ELSE 0));                       20277010
%                                                                   20278000
    LABL(ITEMP);                                                    20279000
            HEADING("ITEMP   ",0,0,0,1);                            20280000
        DS4(0);                                                     20281000
%                                                                   20282000
    LABL(QUEUES);                                                   20283000
            HEADING("QUEUES ",0,0,0,1);                             20284000
        DS2(0);                                                     20285000
    LABL(SOFTQTAIL);                                                20286000
        DS2(0);                                                     20287000
%                                                                   20288000
    LABL(KEYINQ);                                                   20289000
            HEADING("KEYIN Q","UEUE    ",0,0,2);                    20290000
```

Data Documents/Inc.

```
        DS2(0);                                                          20291000
    LABL(KEYINQTAIL);                                                    20292000
        DS2(0);                                                          20293000
%                                                                        20294000
    LABL(CARDREADERQ);                                                   20295000
            HEADING("CARD RE","ADER QU","EUE    ",0,3);                  20296000
        DS2(0);                                                          20297000
    LABL(CARDREADERQTAIL);                                               20298000
        DS2(0);                                                          20299000
%                                                                        20300000
    LABL(SPOUTQ);                                                        20301000
            HEADING("SPOUT Q",0,0,0,1);                                  20302000
        DS2(0);                                                          20303000
    LABL(SPOUTQTAIL);                                                    20304000
        DS2(0);                                                          20305000
%                                                                        20306000
    LABL(PRINTERQ);                                                      20307000
            HEADING("PRINTER"," Q      ",0,0,2);                         20308000
        DS2(0);                                                          20309000
    LABL(PRINTERTAIL);                                                   20310000
        DS2(0);                                                          20311000
%                                                                        20312000
    LABL(PUNCHQUEUE);                                                    20312100
            HEADING("PUNCH Q","UEUE    ",0,0,2);                         20312200
        DS2(0);                                                          20312300
    LABL(PUNCHQUEUETAIL);                                                20312400
        DS2(0);                                                          20312500
%                                                                        20312600
%                                                                        20313000
%                                                                        20314000
    END OF STORAGE;                                                      20315000
%                                                                        20316000
%                                                                        20317000
%                                                                        20318000
%       THIS PROCEDURE CONTAINS THE CODE NEEDED TO PERFORM THE           20319000
%       OVERALL CONTROL FUNCTIONS OF THE DC-1000.                        20320000
%                                                                        20321000
PROCEDURE EXECUTIVE;                                                     20322000
    BEGIN                                                                20323000
%                                                                        20324000
    LABL(XIT);                                                           20325000
            HEADING("XIT    ",0,0,0,1);                                  20326000
%                                                                        20327000
        SP4;                                                             20328000
        LOAD(ITEMP);                                                     20329000
        IBE;                                                             20330000
        CST;                                                             20331000
%                                                                        20332000
    LABL(NOTHINGTODO);                                                   20333000
            HEADING("NOTHING"," TO DO ",0,0,2);                          20334000
        SIE;    NOP;    HLT;                                             20335000
        SS3;    NOP;    HLT;                                             20336000
%                                                                        20337000
%       EXECUTIVE CODE TO HANDLE MODEM.                                  20338000
%                                                                        20339000
    LABL(TESTMODEM);                                                     20340000
            HEADING("TEST MO","DEM    ",0,0,2);                          20341000
        SP1;                                                             20342000
        LOAD(MODEMFLAGS);                                                20343000
        SANN;                                                            20344000
```

Data Documents/Inc.

```
            GOTO(LOC+5);                                                    20345000
            BRM(MODEMIDLE);                                                 20346000
      %                                                                     20347000
      LABL(TESTLP);                                                         20348000
            HEADING("TEST LP",0,0,0,1);                                     20349000
      IF PRINTERTOG THEN BRM(PRINTERCHECK);                                 20350000
      %                                                                     20356000
      LABL(TESTCR);                                                         20357000
            HEADING("TESTCR ",0,0,0,1);                                     20358000
      IF READERTOG THEN BRM(CRREADY);                                       20359000
      %                                                                     20370000
      LABL(TESTCP);                                                         20371000
            HEADING("TEST CP",0,0,0,1);                                     20372000
      IF PUNCHTOG THEN BRM(PUNCHCHECKER);                                   20372100
      %                                                                     20373000
      LABL(TESTSPOOUTPUT);                                                  20374000
            HEADING("TEST SP","O OUTPU","T       ",0,3);                    20375000
          SEN(SPOWRITEREADY);                                               20376000
            GOTO(LOC+4);                                                    20377000
            GOTOIND(SPOUTLABEL);                                            20378000
      %                                                                     20379000
      LABL(TESTSPOINPUT);                                                   20380000
            HEADING("TEST SP","O INPUT",0,0,2);                             20381000
          SEN(SPOREADREADY);                                                20382000
            GOTO(LOC+4);                                                    20383000
            GOTO(SPOINPUT);                                                 20384000
      %                                                                     20385000
      LABL(NSECOND);                                                        20386000
            HEADING("N-SECON","D       ",0,0,2);                          20387000
          SP1;                                                              20388000
            LOAD(NRMASK);                                                   20389000
            SAZN;                                                           20390000
            GOTO(CHECKTIMER);                                               20391000
            SOD;                                                            20392000
            GOTO(LOC+15);                                                   20393000
            SP2;                                                            20394000
            LOAD(SPOUTQ);                                                   20395000
            SUB(SPOUTQTAIL);                                                20395100
            SAZ;                                                            20396000
            GOTO(LOC+7);                                                    20397000
            CLA;                                                            20398000
            IAR;                                                            20399000
            BRM(MAKEREADY);                                                 20400000
      %                                                                     20400100
          IF PRINTERTOG THEN                                                20401000
            BEGIN                                                           20402000
              SP1;                                                          20403000
              LOAD(NRMASK);                                                 20404000
              SR1;                                                          20405000
              SOD;                                                          20406000
              GOTO(LOC+15);                                                 20407000
              SP2;                                                          20408000
              LOAD(PRINTERQ);                                               20409000
              SUB(PRINTERTAIL);                                             20409100
              SAZ;                                                          20410000
              GOTO(LOC+7);                                                  20411000
              LOAD(3);                                                      20412000
              BRM(MAKEREADY);                                               20413000
            END;                                                            20414000
      %                                                                     20415000
```

Data Documents/Inc.

```
            IF PUNCHTOG THEN                                                    20415020
               BEGIN                                                            20415040
                  SP1;                                                          20415060
                  LOAD(NRMASK);                                                 20415080
                  SR1;                                                          20415100
                  SR1;                                                          20415120
                  SOD;                                                          20415140
                  GOTO(LOC+15);                                                 20415160
                  SP2;                                                          20415180
                  LOAD(PUNCHQUEUE);                                             20415200
                  SUB(PUNCHQUEUETAIL);                                          20415205
                  SAZ;                                                          20415220
                  GOTO(LOC+7);                                                  20415240
                  LOAD(2);                                                      20415260
                  BRM(MAKEREADY);                                               20415280
               END;                                                             20415300
            %                                                                   20415320
         LABL(CHECKTIMER);                                                      20416000
                  HEADING("CHECK T","IMER    ",0,0,2);                         20417000
               SP2;                                                             20418000
               LOAD(LASTACTIVITY);                                              20419000
               SUB(TRANSMITENQ);                                                20420000
               SAZ;                                                             20421000
               GOTO(NOTHINGTODO);                                               20422000
               IBD;                                                             20422100
               CSQ(LOC+3);                                                      20422200
               SP3;                                                             20423000
               LOAD(CLOCK);                                                     20424000
               IAR;                                                             20425000
               ST(CLOCK);                                                       20426000
               SANN;                                                            20427000
               GOTO(ENDOFNOTHINGTODO);                                          20428000
            %                                                                   20429000
         LABL(TIMEDOUT);                                                        20430000
                  HEADING("TIMEDOU","T       ",0,0,2);                         20431000
               SP2;                                                             20432000
               CLA;                                                             20433000
               ST(LASTACTIVITY);                                                20434000
               SP1;                                                             20435000
               INCREMENT(MC3);                                                  20436000
               SAZN;                                                            20437000
               GOTO(LOC+7);                                                     20438000
               BRM(OPENALINE);                                                  20439000
               GOTO(ENDOFNOTHINGTODO);                                          20440000
               SPOUT(HLMESS);                                                   20441000
               CLA;                                                             20441100
               ST(LASTACTIVITY);                                                20441200
            %                                                                   20442000
         LABL(ENDOFNOTHINGTODO);                                                20442100
               HEADING("END OF ","NOTHING"," TO DO ",0,3);                      20442200
               IBE;                                                             20442300
               CSQ(NOTHINGTODO);                                                20442400
            %                                                                   20443000
         END OF EXECUTIVE;                                                      20444000
            %                                                                   20445000
            %                                                                   20446000
            %     INITIALIZE SYSTEM CREATES THE CODE NEEDED TO CLEAR ALL DEVICES20447000
            %     AND TO INTERROGATE THE SATAUS OF EACH DEVICE AND SET THE      20448000
            %     STATUS WORDS TO THE PROPER STATE.  THEN THE FREE SPACE QUEUES 20449000
            %     ARE CREATED USING THE REST OF MEMORY.                         20450000
```

Data Documents/Inc.

```
%                                                                    20451000
PROCEDURE INITIALIZSYSTEM;                                           20452000
    BEGIN                                                            20453000
        INTEGER FREE,TOTAL;                                          20454000
        REAL USE,FACTOR;                                             20455000
        REAL ARRAY F[0:5];                                           20456000
        INTEGER ARRAY M[0:5];                                        20457000
        LABEL LOOP,DONE;                                             20458000
%                                                                    20459000
%                                                                    20460000
%                                                                    20461000
    LABL(INITIALIZE);                                                20462000
            HEADING("INITIAL","IZE     ",0,0,2);                     20463000
%                                                                    20464000
%                                                                    20465000
%        THE FOLLOWING IS SYSTEM INITIALIZE CODE FOR THE MODEMS.     20466000
%                                                                    20467000
        IBD;                                                         20468000
        CSQ(LOC+3);                                                  20469000
    IF HIGHSPEEDREADERTOG THEN                                       20469080
      BEGIN                                                          20469090
        SP2;                                                         20469100
        IF READERDEFAULT = 1 THEN DESC(EBCDICVECTOR) ELSE            20469110
            DESC(BCLVECTOR);                                         20469112
        BRM(LOADCRT);                                                20469120
        FUN(CLEARHIGHSPEEDREADER);                                   20469130
      END;                                                           20469140
        FUN(TURNONDTR);                                              20470000
        SP2;                                                         20471000
        CLA;                                                         20472000
        ST(0 & USEIT TYPE);                                          20472100
    LABL(ILOOP);                                                     20472200
        IAR;                                                         20473000
        SAZ;                                                         20474000
        GOTO(ILOOP);                                                 20475000
        SEN(INTERLOCKON);                                            20476000
        GOTO(IL3);                                                   20477000
        SP1;                                                         20478000
        LOAD(CONNECTEDBIT + INTERLOCKBIT + DTRBIT);                  20479000
        ST(MODEMFLAGS);                                              20480000
        SP2;                                                         20481000
        DESC(IGNORERING);                                            20482000
        ST(RINGLABEL);                                               20483000
        GOTO(IL4);                                                   20484000
    LABL(IL3);                                                       20485000
        SPOUT(NOSYSTEMLINK);                                         20486000
%                                                                    20487000
    LABL(IL4);                                                       20488000
        FUN(ENABLEMODEMINTERRUPT);                                   20489000
        LOAD(IM);                                                    20546000
        MIN;                                                         20547000
        SP2;                                                         20552000
        DESC(NOTHINGTODO);                                           20553000
        T(C,0);                                                      20554000
        GOTO(HL);                                                    20555000
%                                                                    20556000
%                                                                    20560000
    LABL(IM);                                                        20561000
            HEADING("IM      ",0,0,0,1);                             20562000
        DS1(9 + (IF READERTOG THEN 2 ELSE 0) +                       20563000
```

Data Documents/Inc.

```
                    (IF PUNCHTOG THEN 4 ELSE 0));                                  20563100
%                                                                                  20563110
%                                                                                  20563120
    LABL(READYSTRING);                                                             20563130
            HEADING("READY S","TRING  ",0,0,2);                                    20563140
        DS2(4"3030");                                                              20563150
    IF PUNCHTOG THEN DS2(4"3032");                                                 20563160
    IF PRINTERTOG THEN DS2(4"3033");                                               20563170
        DS1(CR);                                                                   20563172
%                                                                                  20563180
%                                                                                  20563190
%                                                                                  20563200
%                                                                                  20564000
%                                                                                  20598000
    FILL M[*] WITH 50,200,500,150,500,500;                                         20598100
    FILL F[*] WITH .05,.1,0,.4,1.2,1.0;                                            20598110
%                                                                                  20598120
    IF NOT READERTOG THEN M[2] := 0;                                               20598130
    IF NOT PUNCHTOG THEN M[5] := 0;                                                20598140
    IF NOT PRINTERTOG THEN M[4] := 0;                                              20598150
    FACTOR := 0;                                                                   20598152
    FOR II := 0 STEP 1 UNTIL 5 DO FACTOR := FACTOR + M[II];                        20598154
    IF LOC.ADDRESS + FACTOR - 50 > MEMORY THEN M[-1] := 0;                         20598156
%                                                                                  20598160
    FACTOR := 0;                                                                   20598170
    FOR II := 0 STEP 1 UNTIL 5 DO                                                  20598180
        IF M[II] # 0 THEN FACTOR := FACTOR + F[II];                                20598190
%                                                                                  20598200
LOOP:   TOTAL := 0;                                                                20598210
    FOR II := 0 STEP 1 UNTIL 5 DO TOTAL := TOTAL + M[II];                          20598220
    USE := (FREE := (MEMORY - LOC.ADDRESS - TOTAL)) / FACTOR;                      20598230
    IF FREE < 10 THEN GO TO DONE;                                                  20598240
%                                                                                  20598250
    FOR II := 0 STEP 1 UNTIL 5 DO                                                  20598260
        IF M[II] # 0 THEN M[II] := M[II] + (F[II] x USE);                          20598270
    GO TO LOOP;                                                                    20598280
%                                                                                  20598290
DONE:   IF FREE < 0 THEN                                                           20598300
            WHILE FREE < 0 DO                                                      20598310
              BEGIN                                                                20598320
                FOR II := 1 STEP 1 UNTIL 5 DO                                      20598330
                    IF M[II] # 0 THEN M[II] := M[II] - 1;                          20598340
                TOTAL := 0;                                                        20598350
                FOR II := 0 STEP 1 UNTIL 5 DO                                      20598360
                    TOTAL := TOTAL + M[II];                                        20598370
                FREE := MEMORY - LOC.ADDRESS  - TOTAL;                             20598380
              END                                                                  20598390
        ELSE                                                                       20598400
            M[3] := M[3] + FREE - 1;                                               20598410
%                                                                                  20598420
%                                                                                  20598430
%                                                                                  20598440
    LABL(STARTOFSOFTBUFFER);                                                       20598450
        LOCATE(FREE := LOC.ADDRESS + M[0]);                                        20598460
    LABL(ENDOFSOFTBUFFER);                                                         20598470
%                                                                                  20598480
    LABL(STARTOFKEYINBUFFER);                                                      20598490
        LOCATE(FREE := LOC.ADDRESS + M[1]);                                        20598500
    LABL(ENDOFKEYINBUFFER);                                                        20598510
%                                                                                  20598520
```

Data Documents/Inc.

```
      IF READERTOG THEN                                                    20598530
         BEGIN                                                             20598540
           LABL(STARTOFCRBUFFER);                                          20598550
                LOCATE(FREE := LOC.ADDRESS + M[2]);                        20598560
           LABL(ENDOFCRBUFFER);                                            20598570
         END;                                                              20598580
%                                                                          20598590
      LABL(STARTOFSPOBUFFER);                                              20598600
           LOCATE(FREE := LOC.ADDRESS + M[3]);                             20598610
      LABL(ENDOFSPOBUFFER);                                                20598620
%                                                                          20598630
      IF PRINTERTOG THEN                                                   20598640
         BEGIN                                                             20598650
           LABL(STARTOFLPBUFFER);                                          20598660
                LOCATE(FREE := LOC.ADDRESS + M[4]);                        20598670
           LABL(ENDOFLPBUFFER);                                            20598680
         END;                                                              20598690
%                                                                          20598700
      IF PUNCHTOG THEN                                                     20598710
         BEGIN                                                             20598720
           LABL(STARTOFPUNCHBUFFER);                                       20598730
               LOCATE(MEMORY);                                             20598740
           LABL(ENDOFPUNCHBUFFER);                                         20598750
         END;                                                              20598760
%                                                                          20598770
%                                                                          20598780
%                                                                          20598790
%                                                                          20598800
      END OF INITIALIZE SYSTEM;                                            20599000
%                                                                          20600000
%                                                                          20601000
%       INTERRUPTCODE CONTAINS THE CODE TO HANDLE ALL INTERRUPTS           20602000
%       RECEIVED BY THE DC-1000 AND THEN SOME.                             20603000
%                                                                          20604000
      PROCEDURE INTERRUPTCODE;                                             20605000
        BEGIN                                                              20606000
          REAL SEGMENT;                                                    20607000
%                                                                          20608000
        LABL(I00);                                                         20609000
              HEADING("I00     ",0,0,0,1);                                 20610000
%                                                                          20611000
          SP4;                                                             20612000
          ST(ITEMP);                                                       20613000
          SEN(DATAPRESENT);                                                20614000
          GOTOIND(TRANSMITLABEL);                                          20615000
          GOTOIND(RECEIVELABEL);                                           20616000
%                                                                          20617000
        LABL(I01);                                                         20618000
              HEADING("I01     ",0,0,0,1);                                 20619000
%                                                                          20620000
        IF READERTOG THEN                                                  20621000
          BEGIN                                                            20622000
            SP4;                                                           20623000
            ST(ITEMP);                                                     20624000
            GOTO(CRINTERRUPT);                                             20625000
          END;                                                             20626000
%                                                                          20632000
        LABL(I02);                                                         20633000
              HEADING("I02     ",0,0,0,1);                                 20634000
%                                                                          20635000
```

Data Documents/Inc.

```
        IF PUNCHTOG THEN                                                20636000
           BEGIN                                                        20636020
             SP4;                                                       20636040
             ST(ITEMP);                                                 20636060
             GOTO(CPINTERRUPT);                                         20636080
           END;                                                         20636220
    %                                                                   20637000
        LABL(IO3);                                                      20638000
              HEADING("IO3     ",0,0,0,1);                            20639000
    %                                                                   20640000
              SP4;                                                      20641000
              ST(ITEMP);                                                20642000
              SP1;                                                      20643000
              CIS;                                                      20644000
              SODN;                                                     20645000
              GOTO(CLEARTOSENDINTERRUPT);                               20646000
              SR1;                                                      20647000
              SODN;                                                     20648000
              GOTO(CARRIERINTERRUPT);                                   20649000
              SR1;                                                      20650000
              SR1;                                                      20651000
              SR1;                                                      20656000
              SOD;                                                      20657000
              GOTO(LOC+8);                                              20658000
              SEN(RINGRECEIVED);                                        20659000
              GOTO(INTERLOCKINTERRUPT);                                 20660000
              GOTO(RINGINTERRUPT);                                      20661000
              ENS;                                                      20662000
    %                                                                   20663000
        END OF INTERRUPT CODE;                                          20664000
    %                                                                   20665000
    %                                                                   20666000
    %                                                                   20667000
    %         THE NEXT PROCEDURE CONTAINS THE CODE WHICH IS USED TO     20668000
    %         SEARCH FOR STRINGS IN DATA.  IT WILL  BE INCLUDED IF      20669000
    %         MULTI-CODE CARD READING IS DESIRED BY THE USER.  IF THE   20670000
    %         USER DOES NOT EXPLICITLY SPECIFY EITHER BCL OR EBCDIC CODE 20671000
    %         THIS CODE WILL BE LEFT OUT, THEREBYE INCREASING THE       20672000
    %         BUFFER SIZES.                                             20673000
    %                                                                   20674000
    %                                                                   20675000
    PROCEDURE SCANNERS;                                                 20676000
        BEGIN                                                           20677000
    %                                                                   20678000
    %                                                                   20679000
        LABL(DEBLANK);                                                  20680000
              HEADING("DEBLANK",0,0,0,1);                               20681000
            DS2(0);                                                     20682000
        LABL(DBREENTER);                                                20683000
             SP1;                                                       20684000
             T(B,X);                                                    20685000
             LOADX(0);                                                  20686000
             SUB(CR);                                                   20687000
             SAZN;                                                      20687100
             GOTO(DBEND);                                               20687200
             SUB(COMPRESSCHAR - CR);                                    20690000
             SAZN;                                                      20691000
             GOTO(DBLANKSUP);                                           20692000
             SUB(BLANK - COMPRESSCHAR);                                 20693000
             SAZ;                                                       20694000
```

Data Documents/Inc.

```
            GOTO(DBNONBLANK);                                          20695000
            BRM(IANDC);                                                20695100
            GOTO(DBREENTER);                                           20697000
      %                                                                20698000
      LABL(DBEND);                                                     20699000
            HEADING("DBEND  ",0,0,0,1);                                20699100
            SOF;                                                       20700000
            GOTOIND(DEBLANK);                                          20701000
      %                                                                20702000
      LABL(DBLANKSUP);                                                 20703000
            BRM(IANDC);                                                20704000
            BRM(IANDC);                                                20705000
            BRM(IANDC);                                                20706000
            GOTO(DBREENTER);                                           20707000
      %                                                                20708000
      LABL(DBNONBLANK);                                                20709000
            ROF;                                                       20710000
            GOTOIND(DEBLANK);                                          20711000
      %                                                                20712000
      LABL(SCANFORDELIMETER);                                          20713000
            HEADING("SCAN FO","R DELIM","ETER   ",0,3);                20714000
            DS2(0);                                                    20715000
      LABL(SFDREENTER);                                                20716000
            SP1;                                                       20717000
            T(B,X);                                                    20718000
            LOADX(0);                                                  20719000
            SUB(CR);                                                   20720000
            SAZN;                                                      20721000
            GOTO(SFDEND);                                              20721100
            SUB(ASCII[";"] - CR);                                      20722000
            SAZN;                                                      20723000
            GOTO(SFDFOUND);                                            20724000
            BRM(IANDC);                                                20725000
            GOTO(SFDREENTER);                                          20726000
      %                                                                20727000
      LABL(SFDEND);                                                    20728000
            SOF;                                                       20729000
            GOTOIND(SCANFORDELIMETER);                                 20730000
      %                                                                20731000
      LABL(SFDFOUND);                                                  20732000
            BRM(IANDC);                                                20733000
            ROF;                                                       20734000
            GOTOIND(SCANFORDELIMETER);                                 20735000
      %                                                                20736000
      LABL(COMPARESTRING);                                             20737000
            HEADING("COMPARE"," STRING",0,0,2);                        20738000
            DS2(0);                                                    20739000
      LABL(CSREENTER);                                                 20740000
            SP1;                                                       20741000
            T(B,X);                                                    20742000
            LOADX(0);                                                  20743000
            T(D,X);                                                    20744000
            SUBX(0);                                                   20745000
            SAZ;                                                       20746000
            GOTO(CSNEQ);                                               20747000
            LOADX(1);                                                  20748000
            SUB(CR);                                                   20749000
            SAZN;                                                      20750000
            GOTO(CSEND);                                               20751000
            INCR(D,D);                                                 20752000
```

Data Documents/Inc.

```
            BRM(IANDC);                                                  20753000
            GOTO(CSREENTER);                                             20754000
        %                                                                20755000
    LABL(CSEND);                                                         20756000
        SOF;                                                             20757000
        GOTOIND(COMPARESTRING);                                          20758000
        %                                                                20759000
    LABL(CSNEQ);                                                         20760000
        ROF;                                                             20761000
        GOTOIND(COMPARESTRING);                                          20762000
        %                                                                20763000
    LABL(IANDC);                                                         20764000
            HEADING("I AND C",0,0,0,1);                                  20765000
        DS2(0);                                                          20766000
        SP2;                                                             20767000
        INCR(B,B);                                                       20768000
        T(B,C);                                                          20769000
        SUB(BFFEND);                                                     20770000
        SAZ;                                                             20771000
        GOTOIND(IANDC);                                                  20772000
        LOAD(BFFSTART);                                                  20773000
        T(C,B);                                                          20774000
        GOTOIND(IANDC);                                                  20775000
        %                                                                20776000
    END OF SCANNERS;                                                     20777000
        %                                                                20778000
        %                                                                20779000
        %                                                                30000000
        %                                                                30001000
        %       LINEPRINTERREADY CONTAINS THE CODE WHICH DECIEDES WHAT TO DO  30002000
        %       WHEN THE LINE PRINTER IS READY (ON LINE).  THE CODE CONTAINED 30003000
        %       HEREIN DECIDES WHEN TO FILL THE LINE PRINTER BUFFER,  WHEN TO 30004000
        %       ORDER A PRINT OR FORM FEED, AND WHEN TO PREVENT USE OF THE    30005000
        %       PRINTER.  MULTIPLE FORMAT AS WELL AS PRINT BEFORE AND PRINT   30006000
        %       AFTER ARE INCLUDED HERE.                                      30007000
        %                                                                     30008000
    PROCEDURE LINEPRINTERREADY;                                          30009000
        BEGIN                                                            30010000
            REAL SEGMENT;                                                30011000
        %                                                                30012000
        LABL(PRINTERCHECK);                                              30013000
                HEADING("PRINTER"," CHECK ",0,0,2);                      30014000
            DS2(0);                                                      30015000
            SP1;                                                         30015100
            LOAD(LPSTATUS);                                              30015200
            RL1;                                                         30016000
            SANN;                                                        30017000
            GOTO(PRINTERLOCKED);                                         30018000
        %                                                                30019000
        LABL(NOPRINTERACTIVITY);                                         30020000
                HEADING("NO PRIN","TER ACT","IVITY  ",0,3);              30021000
            SEN(PRINTCYCLEDONE);                                         30022000
            GOTOIND(PRINTERCHECK);                                       30023000
            SEN(LPMOTIONDONE);                                           30024000
            GOTOIND(PRINTERCHECK);                                       30025000
            CLA;                                                         30026000
            SEN(LPERR);                                                  30027000
            GOTO(LOC+4);                                                 30028000
            ADD(LPERRBIT + LOCKBIT);                                     30029000
            SEN(ENDOFPAGE);                                              30030000
```

Data Documents/Inc.

```
            GOTO(LOC+4);                                                    30031000
            ADD(EOPBIT);                                                    30032000
            ST(LPSTATUS);                                                   30036000
            ANDM(LPERRBIT);                                                 30037000
            SAZN;                                                           30038000
            GOTO(PRINTALINE);                                               30039000
            SPOUT(LPCK);                                                    30040000
            SP1;                                                            30041000
            FUN(LPCLEAR);                                                   30042000
            LOAD(LOCKBIT);                                                  30043000
            ST(LPSTATUS);                                                   30044000
            GOTOIND(PRINTERCHECK);                                          30045000
%                                                                           30046000
    LABL(PRINTERLOCKED);                                                    30047000
            HEADING("PRINTER"," INTERL","OCKED  ",0,3);                     30048000
            FUN(LPCLEAR);                                                   30049000
            SEN(LPREADY);                                                   30050000
            GOTO(LOC+4);                                                    30051000
            GOTO(PRINTERLOCKED2);                                           30052000
            LOAD(LPSTATUS);                                                 30053000
            ANDM(255 - LOCKBIT2);                                           30054000
            ADD(LOCKBIT2);                                                  30055000
            ST(LPSTATUS);                                                   30056000
            GOTOIND(PRINTERCHECK);                                          30057000
%                                                                           30058000
    LABL(PRINTERLOCKED2);                                                   30059000
            HEADING("PRINTER"," LOCKED","2      ",0,3);                     30060000
            RL1;                                                            30061000
            SAN;                                                            30062000
            GOTOIND(PRINTERCHECK);                                          30063000
            LOAD(MOTIONDONEBIT);                                            30064000
            ST(LPSTATUS);                                                   30065000
            GOTO(NOPRINTERACTIVITY);                                        30066000
%                                                                           30067000
    LABL(SETPRINTERNOTREADY);                                               30068000
            HEADING("SET PRI","NTER NO","T READY",0,3);                     30069000
            LOAD(LOCKBIT);                                                  30070000
            ST(LPSTATUS);                                                   30071000
            SPOUT(LPNR);                                                    30072000
            GOTOIND(PRINTERCHECK);                                          30073000
%                                                                           30074000
%                                                                           30075000
    LABL(PRINTALINE);                                                       30076000
            HEADING("PRINT A"," LINE  ",0,0,2);                             30077000
            FUN(LPCLEAR);                                                   30078000
            LOAD(PRINTERFORMATCOUNT);                                       30079000
            SAZ;                                                            30080000
            GOTO(PRINTTHEBUFFER);                                           30081000
            SP2;                                                            30082000
            LOAD(PRINTERQ);                                                 30083000
            T(C,X);                                                         30084000
            SUB(PRINTERTAIL);                                               30084100
            SAZN;                                                           30085000
            GOTOIND(PRINTERCHECK);                                          30086000
            SEN(LPREADY);                                                   30087000
            GOTO(SETPRINTERNOTREADY);                                       30088000
            CLA;                                                            30090000
            IAR;                                                            30090005
            ADDR(X,C);                                                      30090010
            ST(LFP);                                                        30090015
```

Data Documents/Inc.

```
                SUB(DES(ENDOFLPBUFFER));                                30090020
                SANN;                                                   30090025
                GOTO(LOC+6);                                            30090030
                ADD(DES(STARTOFLPBUFFER));                              30090035
                ST(LFP);                                                30090040
                LOAD(2);                                                30090045
                ADDR(X,C);                                              30090050
                ST(LRP);                                                30090055
                SUB(DES(ENDOFLPBUFFER));                                30090060
                SANN;                                                   30090065
                GOTO(LOC+6);                                            30090070
                ADD(DES(STARTOFLPBUFFER));                              30090075
                ST(LRP);                                                30090080
                SP1;                                                    30090100
                LOADIND(LFP);                                           30090105
                SP2;                                                    30090110
                ANDM(15);                                               30090220
                ADD(DES(PRINTERCCTABLE));                               30090300
                T(C,X);                                                 30090400
                SP1;                                                    30090500
                LOADX(0);                                               30090600
                STIND(LFP);                                             30090800
                ANDM(127);                                              30091000
                SAZ;                                                    30092000
                GOTO(LOC+16);                                           30093000
                LOADIND(LFP);                                           30094000
                ADDIND(LRP);                                            30095000
                ANDM(15 + 128);                                         30095100
                STIND(LFP);                                             30096000
                CLA;                                                    30097000
                IAR;                                                    30098000
                STIND(LRP);                                             30099000
                GOTO(LOC+21);                                           30099100
                LOADIND(LFP);                                           30101000
                SL1;      SR1;                                          30101100
                SUB(SINGLESPACE);                                       30101110
                SAZ;                                                    30101120
                GOTO(LOC+14);                                           30101130
                LOADIND(LRP);                                           30101140
                SUB(48);                                                30101150
                SAZ;                                                    30101160
                GOTO(LOC+7);                                            30101170
                STIND(LFP);                                             30101180
                IAR;                                                    30101190
                STIND(LRP);                                             30101200
                LOADIND(LFP);                                           30101210
                ST(NEXTPRINTERFORMAT);                                  30102000
                SANN;                                                   30103000
                GOTO(PRINTAFTER);                                       30104000
%                                                                       30105000
                LOADIND(LRP);                                           30106000
                ANDM(15);                                               30106100
                CIA;                                                    30107000
                ST(PRINTERFORMATCOUNT);                                 30108000
                GOTO(NORMALPRINT);                                      30109000
%                                                                       30110000
        LABL(PRINTAFTER);                                               30111000
                HEADING("PRINT A","FTER   ",0,0,2);                     30112000
                LOADIND(LRP);                                           30113000
                ANDM(15);                                               30113100
```

Data Documents/Inc.

```
            CIA;                                                    30114000
            ST(PRINTERFORMATCOUNT);                                 30115000
            CLA;                                                    30116000
            STIND(LFP);                                             30117000
            IAR;                                                    30118000
            STIND(LRP);                                             30119000
            GOTO(PRINTIT);                                          30120000
      %                                                             30121000
      LABL(NORMALPRINT);                                            30122000
            HEADING("NORMAL ","PRINT  ",0,0,2);                     30123000
            SP2;                                                    30124000
            LOAD(LRP);                                              30125000
            ST(LPLIMIT);                                            30125010
            LOADIND(PRINTERQ);                                      30130000
            SR8;                                                    30131000
            SUB(5);                                                 30134000
            SAZN;                                                   30135000
            GOTO(PRINTNOBUFFER);                                    30136000
            ADD(5);                                                 30137000
            ADD(PRINTERQ);                                          30138000
            IAR;                                                    30138100
            ST(LPPOINTER);                                          30139000
            SUB(DES(ENDOFLPBUFFER));                                30139100
            SANN;                                                   30139130
            GOTO(LOADPRINTCHAR);                                    30140100
      %                                                             30140110
      LABL(LPWRAPAROUND);                                           30140120
            HEADING("LP WRAP","AROUND ",0,0,2);                     30140130
            ADD(DES(STARTOFLPBUFFER));                              30140190
            ST(LPPOINTER);                                          30140200
      %                                                             30141000
      LABL(LOADPRINTCHAR);                                          30142000
            HEADING("LOAD A ","PRINT C","HAR    ",0,3);             30143000
            CLA;                                                    30144000
            SP1;                                                    30145000
            BRM(FETCHPRINTCHAR);                                    30146000
            SUB(COMPRESSCHAR);                                      30147000
            SAZN;                                                   30148000
            GOTO(EXPANDPRINTERDATA);                                30149000
            ADD(COMPRESSCHAR);                                      30150000
            BRM(PRINTERTRANSLATE);                                  30151000
            BTD(LPDATA);                                            30154000
            GOTO(LOADPRINTCHAR);                                    30154200
      %                                                             30155000
      LABL(FETCHPRINTCHAR);                                         30156000
            HEADING("FETCH P","RINT CH","AR     ",0,3);             30157000
            DS2(0);                                                 30157100
            SP2;                                                    30158000
      %                                                             30158100
      LABL(FP);                                                     30158110
            LOAD(LPPOINTER);                                        30159000
            DECR(C,C);                                              30160000
            ST(LPPOINTER);                                          30161000
            SUB(LPLIMIT);                                           30162000
            SAZN;                                                   30163000
            GOTO(PRINTNOBUFFER);                                    30164000
            DESC(STARTOFLPBUFFER);                                  30164150
            SUB(LPPOINTER);                                         30164152
            SUB(1);                                                 30164154
            SAZ;                                                    30164156
```

Data Documents/Inc.

```
            GOTO(EXITFETCHPRINTCHAR);                                    30164160
            DESC(ENDOFLPBUFFER);                                         30164170
            ST(LPPOINTER);                                               30164180
            GOTO(FP);                                                    30164185
    %                                                                    30164190
        LABL(EXITFETCHPRINTCHAR);                                        30164200
            SP1;                                                         30164210
            LOADIND(LPPOINTER);                                          30164220
            GOTOIND(FETCHPRINTCHAR);                                     30164230
    %                                                                    30165000
        LABL(PRINTNOBUFFER);                                             30166000
                HEADING("PRINT N","O BUFFE","R      ",0,3);              30167000
            SP2;                                                         30175000
            LOADIND(PRINTERQ);                                           30175100
            SR8;                                                         30176000
            ADD(PRINTERQ);                                               30177000
            IAR;   IAR;                                                  30177100
            T(C,X);                                                      30178000
            SUB(DES(ENDOFLPBUFFER));                                     30179000
            SANN;                                                        30181100
            GOTO(LPUPDATE);                                              30181110
            ADD(DES(STARTOFLPBUFFER));                                   30181120
            T(C,X);                                                      30181130
    %                                                                    30181140
        LABL(LPUPDATE);                                                  30181150
                HEADING("LP UPDA","TE      ",0,0,2);                     30181160
            T(X,C);                                                      30181170
            ST(PRINTERQ);                                                30181180
            SEN(LPREADY);                                                30183100
            GOTO(SETPRINTERNOTREADY);                                    30183200
            GOTO(PRINTIT);                                               30190000
    %                                                                    30191000
        LABL(EXPANDPRINTERDATA);                                         30192000
                HEADING("EXPAND ","PRINTER"," DATA  ",0,3);              30193000
            BRM(FETCHPRINTCHAR);                                         30194000
            CIA;                                                         30202000
            ST(PRINTERLOOPCONTROL);                                      30203000
            BRM(FETCHPRINTCHAR);                                         30204000
            BRM(PRINTERTRANSLATE);                                       30205000
            T(C,A);                                                      30206000
            T(A,C);                                                      30207000
            SEN(LPDATAREADY);                                            30208000
            GOTO(LOC-2);                                                 30211000
            BTU(LPDATA);                                                 30211100
            INCREMENT(PRINTERLOOPCONTROL);                               30213000
            SAZ;                                                         30214000
            GOTO(LOC-14);                                                30215000
            GOTO(LOADPRINTCHAR);                                         30216000
    %                                                                    30217000
        LABL(PRINTTHEBUFFER);                                            30218000
                HEADING("PRINT T","HE BUFF","ER      ",0,3);             30219000
            SEN(LPREADY);                                                30220000
             GOTO(SETPRINTERNOTREADY);                                   30221000
    %                                                                    30222000
        LABL(PRINTIT);                                                   30223000
                HEADING("PRINTIT",0,0,0,1);                              30224000
            SP1;                                                         30225000
            LOAD(LPSTATUS);                                              30226000
            SR1;                                                         30227000
            SL1;                                                         30228000
```

Data Documents/Inc.

```
                IAR;                                                    30229000
                ST(LPSTATUS);                                           30230000
                RL1;                                                    30231000
                RL1;                                                    30232000
                RL1;                                                    30233000
                SAN;                                                    30234000
                GOTO(PRINTERLAB2);                                      30235000
                LOAD(PAGESKIP);                                         30236000
                BTO(LPFORMAT);                                          30237000
                CLA;                                                    30238000
                IAR;                                                    30239000
                ST(LPSTATUS);                                           30240000
                GOTOIND(PRINTERCHECK);                                  30241000
        %                                                               30242000
        LABL(PRINTERLAB2);                                              30243000
                HEADING("PRINTER","LAB2  ",0,0,2);                      30244000
                LOAD(NEXTPRINTERFORMAT);                                30245000
                SUB(SINGLESPACE);                                       30246000
                SAZ;                                                    30247000
                GOTO(LOC+17);                                           30248000
        %                                                               30249000
                LOAD(PRINTERFORMATCOUNT);                               30250000
                SODN;                                                   30251000
                GOTO(LOC+12);                                           30252000
                SANN;                                                   30253000
                IAR;                                                    30254000
                NOP;                                                    30255000
                RR1;                                                    30256000
                ST(PRINTERFORMATCOUNT);                                 30257000
                LOAD(DOUBLESPACE);                                      30258000
                ST(NEXTPRINTERFORMAT);                                  30259000
        %                                                               30260000
                LOAD(NEXTPRINTERFORMAT);                                30261000
                BTO(LPFORMAT);                                          30262000
                INCREMENT(PRINTERFORMATCOUNT);                          30263000
                GOTOIND(PRINTERCHECK);                                  30264000
        %                                                               30265000
        %                                                               30266000
            END OF LINE PRINTER READY;                                  30267000
        %                                                               30268000
        %                                                               30269000
        %       LINEPRINTERTABLE CONTAINS THE SPECIAL FORM ASCII(67) TO BCL 30270000
        %       EXTERNAL TABLES NEEDED BY THE ROUTINE PRINTERTRANSLATE TO 30271000
        %       CONVERT THE ASCII(67) INPUT INTO PRINTED OUTPUT.        30272000
        %                                                               30273000
        PROCEDURE LINEPRINTERTABLES;                                    30274000
            BEGIN                                                       30275000
            REAL SEGMENT;                                               30276000
        %                                                               30277000
            LABL(LPTABLE);                                              30278000
                    HEADING("LP TABL","E       ",0,0,2);                30279000
        %                                                               30280000
            FILL ATEMP[*] WITH                                          30281000
                4"100C0F31",4"1F320B33",4"28341C35",                    30281010
                4"30362F37",4"3D382D39",4"2C213A22",                    30281020
                4"1B232024",4"3B251126",4"0A270128",                    30281030
                4"02290312",4"04130514",4"06150716",                    30281040
                4"08170918",4"0D192E3C",4"3E2A1D1E",                    30281050
                4"0E1A003F";                                            30281060
        %                                                               30281070
```

Data Documents/Inc.

```
    FOR II := 0 STEP 1 UNTIL 15 DO DS4(ATEMP[II]);                    30281080
%                                                                     30281090
%                                                                     30289000
    LABL(PRINTERCCTABLE);                                             30290000
          HEADING("PRINTER"," CC TAB","LE     ",0,3);                 30291000
    FOR II := 16,0,16,0,128+16,128 DO DS1(II);                        30292000
%                                                                     30293000
    END OF LINE PRINTER TABLES;                                       30294000
%                                                                     30295000
%                                                                     30296000
%       LINEPRINTERSTORAGE RESERVES THE STORAGE LOCATIONS NEEDED      30297000
%       TO HANDLE THE LINE PRINTER.                                   30298000
%                                                                     30299000
PROCEDURE LINEPRINTERSTORAGE;                                         30300000
    BEGIN                                                             30301000
        REAL SEGMENT;                                                 30302000
    LABL(LPSTATUS);                                                   30303000
          HEADING("LP STAT","US     ",0,0,2);                       30304000
        DS1(0);                                                       30305000
%                                                                     30306000
    LABL(PRINTERTEMP);                                                30306140
          HEADING("PRINTER"," TEMP  ",0,0,2);                         30306150
        DS2(0);                                                       30306160
%                                                                     30306170
    LABL(LFP);                                                        30306180
          HEADING("LFP    ",0,0,0,1);                                 30306190
        DS2(0);                                                       30306200
%                                                                     30306210
    LABL(LRP);                                                        30306220
          HEADING("LRP    ",0,0,0,1);                                 30306230
        DS2(0);                                                       30306240
%                                                                     30306250
    LABL(NEXTPRINTERFORMAT);                                          30307000
          HEADING("NEXT PR","INT FOR","MAT    ",0,3);                 30308000
        DS1(0);                                                       30309000
%                                                                     30310000
    LABL(PRINTERFORMATCOUNT);                                         30311000
          HEADING("FORMAT ","COUNT  ",0,0,2);                         30312000
        DS1(0);                                                       30313000
%                                                                     30318000
    LABL(PRINTERLOOPCONTROL);                                         30319000
          HEADING("PRINTER"," LOOP C","ONTROL ",0,3);                 30320000
        DS1(0);                                                       30321000
%                                                                     30322000
    LABL(LPPOINTER);                                                  30323000
          HEADING("LP POIN","TER    ",0,0,2);                       30324000
        DS2(0);                                                       30325000
%                                                                     30326000
    LABL(LPLIMIT);                                                    30327000
          HEADING("LP LIMI","T      ",0,0,2);                       30328000
        DS2(0);                                                       30329000
%                                                                     30330000
%                                                                     30331000
    END OF LINE PRINTER STORAGE;                                      30332000
%                                                                     30333000
%                                                                     35000000
%       CARDREADERINTERRUPT CONTAINS THE CODE TO HANDLE               35001000
%       A CARD READER INTERRUPT.  IF THE INTERRUPT WAS                35002000
%       CAUSED BY DATA READY THEN THE COLUMN IS STORED IN THE         35003000
%       CARD READER BUFFER AREA(CRBUFFER).  IF THE INTERRUPT          35004000
```

Data Documents/Inc.

```
%          WAS ANYTHING ELSE, THEN PROPER ACTION FOR READER                    35005000
%          NOT READY OR END OF CARD I/O ARE TAKEN.                             35006000
%                                                                              35007000
PROCEDURE CARDREADERINTERRUPT;                                                 35008000
    BEGIN                                                                      35009000
            REAL SEGMENT;                                                      35010000
%                                                                              35011000
    LABL(CRINTERRUPT);                                                         35012000
            HEADING("CARD RE","ADER IN","TERRUPT",0,3);                        35013000
%                                                                              35013100
    IF HIGHSPEEDREADERTUG THEN                                                 35013110
       BEGIN                                                                   35013120
         SP1;                                                                  35013130
         BTI(READHIGHSPEEDREADERSTATUS);                                       35013140
         ST(CRSCRATCH);                                                        35013150
         ANDM(CRTBIT);                                                         35013160
         SAZN;                                                                 35013170
         GOTO(LOC+7);                                                          35013180
         CLA;                                                                  35013190
         ST(CRSTATUS);                                                         35013200
         ENS;                                                                  35013210
         LOAD(CRSCRATCH);                                                      35013220
         ANDM(NOTREADYBIT + EOFBIT + FEEDCHECKBIT);                            35013230
         SAZ;                                                                  35013240
         GOTO(EMPTYCARDREADERHOPPER);                                          35013250
         LOAD(CRSCRATCH);                                                      35013260
         ANDM(CRERRORBIT);                                                     35013270
         SAZ;                                                                  35013280
         GOTO(READCHECK);                                                      35013290
         LOAD(CRSTATUS);                                                       35013292
         SOD;                                                                  35013294
         ENS;                                                                  35013296
         LOAD(CRBUFFFULLBIT);                                                  35013300
         ST(CRSTATUS);                                                         35013310
         ENS;                                                                  35013320
       END                                                                     35013330
    ELSE                                                                       35013340
       BEGIN                                                                   35013350
%                                                                              35014000
         SEN(CRDATAREADY);                                                     35015000
         GOTO(CARDREADERINTERRUPTNOTDATAREADY);                                35016000
         SP1;                                                                  35017000
         LOAD(CRCOUNT);                                                        35018000
         SAZN;                                                                 35019000
         GOTO(READCHECK);                                                      35020000
         IAR;                                                                  35021000
         ST(CRCOUNT);                                                          35022000
         LOAD(CRSTATUS);                                                       35023000
         ANDM(255 - CRFIRSTBIT);                                               35024000
         ST(CRSTATUS);                                                         35025000
         SP2;                                                                  35026000
         BTI(CRREAD);                                                          35027000
         SL8;                                                                  35028000
         BTI(CRREAD);                                                          35029000
         STIND(CRPOINTER);                                                     35030000
         LOAD(CRPOINTER);                                                      35031000
         IAR;                                                                  35032000
         IAR;                                                                  35033000
         ST(CRPOINTER);                                                        35034000
         ENS;                                                                  35035000
```

Data Documents/Inc.

```
%                                                                       35036000
    LABL(CARDREADERINTERRUPTNOTDATAREADY);                              35037000
          HEADING("READER ","INTERRU","PT NOT ","DATA   ",4);           35038000
%                                                                       35039000
      FUN(CRCLEAR);                                                     35040000
      SP1;                                                              35041000
      LOAD(CRSTATUS);                                                   35042000
      ANDM(CRFIRSTBIT);                                                 35043000
      SAZ;                                                              35044000
      GOTO(EMPTYCARDREADERHOPPER);                                      35045000
      LOAD(CRCOUNT);                                                    35046000
      SAZ;                                                              35047000
      GOTO(READCHECK);                                                  35048000
      LOAD(CRBUFFFULLBIT);                                              35049000
      ST(CRSTATUS);                                                     35050000
      ENS;                                                              35051000
    END;                                                                35051100
%                                                                       35052000
    LABL(EMPTYCARDREADERHOPPER);                                        35053000
          HEADING("EMPTY C","ARD REA","DER HOP","PER    ",4);           35054000
%                                                                       35055000
      PRECISION := 1;                                                   35056000
    IF HIGHSPEEDREADERTOG THEN                                          35056100
      BEGIN                                                             35056110
      FUN(CLEARHIGHSPEEDREADER);                                        35056115
      ANDM(FEEDCHECKBIT);                                               35056120
      SAZN;                                                             35056130
      GOTO(LOC+6);                                                      35056140
      LOAD(NOTREADYBIT);                                                35056150
      GOTO(LOC+4);                                                      35056160
      LOAD(CRBUFFFULLBIT);                                              35056170
    END                                                                 35056180
    ELSE                                                                35056190
      BEGIN                                                             35056200
      LOAD(CRSTATUS);                                                   35057000
      ANDM(CRSUPRESSNRMESSBIT);                                         35057100
      ADD(NOTREADYBIT);                                                 35057200
    END;                                                                35057300
      ST(CRSTATUS);                                                     35060000
      ENS;                                                              35061000
%                                                                       35062000
    LABL(READCHECK);                                                    35063000
          HEADING("READ CH","ECK    ",0,0,2);                         35064000
%                                                                       35065000
      PRECISION := 1;                                                   35066000
      FUN(CRCLEAR);                                                     35067000
      LOAD(LOCKBIT);                                                    35068000
      ST(CRSTATUS);                                                     35069000
      SPOUT(CRERR);                                                     35070000
      ENS;                                                              35071000
    END OF CARD READER INTERRUPT;                                       35072000
%                                                                       35073000
%                                                                       35074000
%       PROCEDURE CARDREADERNOTREADY CONTAINS THE CODE TO SPOUT         35075000
%       "CR NOT READY" ON THE SPO.                                      35076000
%                                                                       35077000
PROCEDURE CARDREADERNOTREADY;                                           35078000
    BEGIN                                                               35079000
      REAL SEGMENT;                                                     35080000
%                                                                       35081000
```

Data Documents/Inc.

```
        LABL(CRNOTREADY);                                                    35082000
              HEADING("CARD RE","ADER NO","T READY",0,3);                    35083000
            PRECISION := 1;                                                  35084000
            SL1;                                                             35085000
            SAN;                                                             35086000
            GOTO(LOC+7);                                                     35087000
            SR1;                                                             35087100
            ST(CRSTATUS);                                                    35087200
            GOTO(TESTCP);                                                    35087300
        %                                                                    35088000
            LOAD(CRSTATUS);                                                  35088100
            ANDM(CRSUPRESSNRMESSBIT);                                        35088200
            SAZN;                                                            35088300
            GOTO(LOC+8);                                                     35088400
            LOAD(LOCKBIT);                                                   35088500
            ST(CRSTATUS);                                                    35088600
            GOTO(TESTCP);                                                    35088700
            SPOUT(CRNR);                                                     35089000
            SP1;                                                             35090000
            LOAD(LOCKBIT);                                                   35093000
            ST(CRSTATUS);                                                    35094000
            GOTO(TESTCP);                                                    35095000
        %                                                                    35096000
        END OF CARD READER NOT READY;                                        35097000
        %                                                                    35098000
        %                                                                    35099000
        %       CARDREADERRCTREADY CONTAINS THE CODE TO DETERMINE            35100000
        %       IF A CARD I/O CAN BE STARTED, OR IF ANY ERROR MESSAGES       35101000
        %       SHOULD BE PRINTED ON THE SUPERVISORY PRINTER;                35102000
        %                                                                    35103000
        PROCEDURE CARDREADERREADY;                                           35104000
            BEGIN                                                            35105000
            REAL SEGMENT;                                                    35106000
        %                                                                    35107000
            LABL(CRREADY);                                                   35108000
                  HEADING("CARD RE","ADER RE","ADY    ",0,3);                35109000
        %                                                                    35110000
            DS2(0);                                                          35111000
            SP1;                                                             35111100
            LOAD(CRSTATUS);                                                  35111200
            SANN;                                                            35111300
            GOTO(CRNOTREADY);                                                35111400
            SODN;                                                            35112000
            GOTO(TESTCP);                                                    35113000
            RR1;                                                             35114000
            SODN;                                                            35115000
            GOTO(MOVECRBUFFER);                                              35116000
        %                                                                    35117000
            RL1;                                                             35118000
            SL1;                                                             35119000
            SANN;                                                            35120000
            GOTO(CARDREADERLOCKED);                                          35121000
        %                                                                    35122000
            LABL(CARDREADERSTARTIO);                                         35123000
                  HEADING("CARD RE","ADER ST","ART I/O",0,3);                35124000
        %                                                                    35125000
            SP2;                                                             35126000
            DESC(CRBUFFER);                                                  35127000
        IF HIGHSPEEDREADERTOG THEN                                           35127100
          BEGIN                                                              35127110
```

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```
          BTO(LOADDMA0);                                                    35127120
          SR8;                                                              35127130
          BTO(LOADDMA1);                                                    35127140
        END                                                                 35127150
      ELSE                                                                  35127160
          ST(CRPOINTER);                                                    35128000
          SP1;                                                              35129000
      IF NOT HIGHSPEEDREADERTOG THEN                                        35129100
        BEGIN                                                               35129110
          LOAD(-80);                                                        35130000
          ST(CRCOUNT);                                                      35131000
        END;                                                                35131100
          LOAD(CRSTATUS);                                                   35132000
          ANDM(CRSUPRESSNRMESSBIT);                                         35132100
          ADD(CRFIRSTBIT + BUSYBIT);                                        35132200
          ST(CRSTATUS);                                                     35133000
          CLA;                                                              35133100
          ST(CRFLAGS);                                                      35133200
          IF HIGHSPEEDREADERTOG THEN FUN(CLEARHIGHSPEEDREADER) ELSE         35134000
              FUN(CRCLEAR);                                                 35134010
      IF NOT HIGHSPEEDREADERTOG THEN                                        35134100
        BEGIN                                                               35134110
          FUN(CRINITIATE);                                                  35135000
          FUN(ENABLECRINTERRUPT);                                           35136000
        END                                                                 35136100
      ELSE                                                                  35136110
        BEGIN                                                               35136120
          BTI(READHIGHSPEEDREADERSTATUS);                                   35136122
          SAN;                                                              35136124
          GOTO(LOC+12);                                                     35136126
          LOAD(CRSTATUS);                                                   35136127
          ANDM(LOCKBIT + LOCKBIT2 + CRSUPRESSNRMESSBIT);                    35136128
          ADD(NOTREADYBIT);                                                 35136129
          ST(CRSTATUS);                                                     35136130
          GOTOIND(CRREADY);                                                 35136131
          FUN(INITIATEHIGHSPEEDREADER);                                     35136132
          FUN(ENABLEHIGHSPEEDREADERINTERRUPT);                              35136140
        END;                                                                35136150
          GOTOIND(CRREADY);                                                 35137000
%                                                                           35138000
    LABL(CARDREADERLOCKED);                                                 35139000
          HEADING("CARD RE","ADER LO","CKED   ",0,3);                       35140000
    IF NOT HIGHSPEEDREADERTOG THEN                                          35141000
          FUN(CRCLEAR);                                                     35141100
          RL1;                                                              35142000
          SANN;                                                             35143000
          GOTO(CARDREADERLOCKED2);                                          35144000
    IF HIGHSPEEDREADERTOG THEN                                              35144100
        BEGIN                                                               35144110
          BTI(READHIGHSPEEDREADERSTATUS),                                   35144120
          SANN;                                                             35144130
        END                                                                 35144140
      ELSE                                                                  35144150
          SEN(CRONLINE);                                                    35145000
          GOTO(LOC+4);                                                      35146000
          GOTOIND(CRREADY);                                                 35147000
%                                                                           35148000
          LOAD(LOCKBIT + LOCKBIT2);                                         35149000
          ST(CRSTATUS);                                                     35152000
          GOTOIND(CRREADY);                                                 35153000
```

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```
%                                                                       35154000
    LABL(CARDREADERLOCKED2);                                            35155000
          HEADING("CARD RE","ADER LO","CKED2  ",0,3);                   35156000
    IF HIGHSPEEDREADERTOG THEN                                          35157000
       BEGIN                                                            35157010
         BTI(READHIGHSPEEDREADERSTATUS);                                35157020
         SANN;                                                          35157030
       END                                                              35157040
    ELSE                                                                35157050
         SEN(CRONLINE);                                                 35158000
         GOTOIND(CRREADY);                                              35159000
         GOTO(CARDREADERSTARTIO);                                       35160000
%                                                                       35161000
    END OF CARD READER READY;                                           35162000
%                                                                       35163000
%                                                                       35164000
%                                                                       35165000
%         PROCEDURE MOVEIT CONTAINS THE CODE TO MOVE A CARD             35166000
%         IMAGE FROM THE CARDBUFFER TO A DATA AREA.  THIS CODE ALSO     35167000
%         COMPRESSES ALL RUNS OF FIVE OR MORE BLANKS INTO THE           35168000
%         STANDARD FORM FOR BLANK SUPRESSED DATA.                       35169000
%                                                                       35170000
PROCEDURE CARDREADERMOVER;                                              35171000
    BEGIN                                                               35172000
         REAL SEGMENT;                                                  35173000
%                                                                       35174000
    LABL(MOVECRBUFFER);                                                 35175000
          HEADING("MOVE CR"," BUFFER",0,0,2);                           35176000
         PRECISION := 1;                                                35177000
         LOAD(CRFLAGS);                                                 35177100
         ANDM(CRSCANBIT);                                               35177110
         SAZ;                                                           35177120
         GOTO(CRRESTARTSCAN);                                           35177130
         SP2;                                                           35177140
         LOAD(CARDREADERQ);                                             35177150
         SUB(CARDREADERQTAIL);                                          35177160
         CIA;                                                           35177162
         IAR;                                                           35177164
         SAZN;                                                          35177170
         GOTO(TESTCP);                                                  35177180
         SP1;                                                           35177190
         LOAD(-79);                                                     35181000
         ST(CRCOUNT);                                                   35182000
         LOAD(CRSCANBIT);                                               35187000
         ST(CRFLAGS);                                                   35188000
         CLA;                                                           35188100
         ST(CRSUPRESSCOUNT);                                            35189000
         SP2;                                                           35189010
         DESC(CRBUFFER);                                                35199000
         DECR(C,D);                                                     35200000
         LOAD(CARDREADERQTAIL);                                         35200100
         ST(CRPOINTER);                                                 35200200
         GOTO(LOC+5);                                                   35201000
%                                                                       35202000
    LABL(GETNEXTCARDCOL);                                               35203000
          HEADING("GET NEX","T CARD ","COL    ",0,3);                   35204000
%                                                                       35205000
         IAR;                                                           35206000
         ST(CRCOUNT);                                                   35207000
         INCR(D,X);                                                     35209000
```

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```
      IF HIGHSPEEDREADERTUG THEN                                    35209100
        T(X,D)                                                      35209110
      ELSE                                                          35209120
        INCR(X,D);                                                  35210000
      IF HIGHSPEEDREADERTUG THEN                                    35210100
        BEGIN                                                       35210105
          SP1                                                       35210110
        END                                                         35210115
      ELSE                                                          35210120
        BEGIN                                                       35210130
          SP2;                                                      35211000
        END;                                                        35211110
          LOADX(0);                                                 35212000
    %                                                               35213000
      IF HIGHSPEEDREADERTUG THEN                                    35213100
        BEGIN                                                       35213110
          SANN;                                                     35213112
          GOTO(INVALIDCARDCHAR);                                    35213114
          ANDM(127);                                                35213120
        END                                                         35213160
      ELSE                                                          35213170
        BEGIN                                                       35213180
          RR1;                                                      35214000
          SODN;                                                     35215000
          ADD(2047);                                                35216000
          RL8;                                                      35217000
          ST(CRSCRATCH);                                            35218000
          ANDM(65408);                                              35219000
          T(Z,A);                                                   35220000
          SAZN;                                                     35221000
          GOTO(LOC+10);                                             35222000
    %                                                               35223000
          INCR(A,A);                                                35224000
          SANN;                                                     35225000
          GOTO(LOC+5);                                              35226000
          SL1;                                                      35227000
          GOTO(LOC-6);                                              35228000
    %                                                               35229000
          SL1;                                                      35230000
          SAZ;                                                      35231000
          GOTO(INVALIDCARDCHAR);                                    35232000
    %                                                               35233000
          LOAD(CRSCRATCH);                                          35235000
          ANDM(15);                                                 35236000
          ADD(CURRENTCARDTABLE);                                    35238000
          T(C,X);                                                   35239000
          LOADX(0);                                                 35240000
          SANN;                                                     35241000
          GOTO(CHECKFORINVALIDCHAR);                                35242000
    %                                                               35243000
          SR8;                                                      35244000
          ADD(DES(CRTABLE));                                        35245000
          T(C,X);                                                   35246000
          ADDR(A,X);                                                35247000
          SP1;                                                      35248000
          LOADX(0);                                                 35249000
          SANN;                                                     35250000
          GOTO(INVALIDCARDCHAR);                                    35251000
        END;                                                        35251100
    %                                                               35252000
```

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```
      LABL(STORECARDCHAR);                                                  35253000
            HEADING("STORE C","ARD CHA","R      ",0,3);                     35254000
      %                                                                     35255000
            BRM(STORECRCHAR);                                               35256000
            SP1;                                                            35256200
            SUB(BLANK);                                                     35259000
            SAZ;                                                            35260000
            GOTO(MAYBEENDOFCRSUPRESSION);                                   35261000
            LOAD(CRSUPRESSCOUNT);                                           35262000
            SAZ;                                                            35262100
            GOTO(LOC+9);                                                    35262110
            SP2;                                                            35262120
            LOAD(CRTEMP);                                                   35262130
            ST(CRFIRSTSPACE);                                               35262140
            SP1;                                                            35262150
            CLA;                                                            35262160
            SUB(5);                                                         35263000
            SAZN;                                                           35264000
            GOTO(INITIALIZECRSUPRESSION);                                   35265000
            ADD(6);                                                         35266000
            ST(CRSUPRESSCOUNT);                                             35267000
      %                                                                     35268000
      LABL(TESTFORCRDONE);                                                  35269000
            HEADING("TEST FO","R CR DO","NE     ",0,3);                     35270000
      %                                                                     35271000
            SP1;                                                            35272000
            LOAD(CRCOUNT);                                                  35273000
            SAZ;                                                            35274000
            GOTO(GETNEXTCARDCOL);                                           35275000
            LOAD(CRSUPRESSCOUNT);                                           35276000
            SAZN;                                                           35277000
            GOTO(MAYBEENDOFCRSUPRESSION);                                   35278000
            SP2;                                                            35279000
            LOAD(CRFIRSTSPACE);                                             35280000
            ST(CRPOINTER);                                                  35281000
            GOTO(LOCALTESTFORCRDONE);                                       35282000
      %                                                                     35285000
      LABL(MAYBEENDOFCRSUPRESSION);                                         35286000
            HEADING("MAYBE E","ND OF C","R SUPRE","SSION  ",4);             35287000
            SP1;                                                            35288000
            LOAD(CRFLAGS);                                                  35289000
            ANDM(3);                                                        35289100
            SAZN;                                                           35290000
            ST(CRSUPRESSCOUNT);                                             35291000
            SAZN;                                                           35292000
            GOTO(LOCALTESTFORCRDONE);                                       35293000
            LOAD(CRSCANBIT);                                                35294000
            ST(CRFLAGS);                                                    35294010
            SP2;                                                            35294100
            LOAD(CRFIRSTSPACE);                                             35294110
            ST(CRPOINTER);                                                  35294120
            LOAD(CRTEMP);                                                   35294125
            ST(CRTEMP3);                                                    35294127
            SP1;                                                            35294130
            LOAD(COMPRESSCHAR);                                             35295100
            BRM(STORECRCHAR);                                               35295200
            SP2;                                                            35296000
            LOAD(CRSUPRESSCOUNT);                                           35297000
            SR8;                                                            35298000
            T(Z,X);                                                         35303000
```

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```
          SXZ;                                                  35304000
          INCR(X,X);                                            35305000
          SUB(10);                                              35306000
          SAN;                                                  35307000
          GOTO(LOC-5);                                          35308000
          ADD(10);                                              35309000
          SP2;                                                  35310000
          SL8;                                                  35311000
          ORR(X,C);                                             35312000
          RL8;                                                  35313000
          ADD(12336);                                           35314000
          T(C,A);                                               35314100
          SR8;                                                  35314110
          BRM(STORECRCHAR);                                     35314120
          T(A,C);                                               35314130
          BRM(STORECRCHAR);                                     35314140
          SP1;                                                  35328000
          LOADIND(CRTEMP3);                                     35329000
          BRM(STORECRCHAR);                                     35330000
   %                                                            35331000
      LABL(LOCALTESTFORCRDONE);                                 35334000
              HEADING("LOCAL T","EST FOR"," CR DON","E       ",4);  35335000
   %                                                            35336000
          SP1;                                                  35337000
          LOAD(CRCOUNT);                                        35338000
          SAZ;                                                  35339000
          GOTO(GETNEXTCARDCOL);                                 35340000
   %                                                            35341000
          LOAD(CR);                                             35343000
          BRM(STORECRCHAR);                                     35344000
   %                                                            35356100
          SP1;                                                  35356105
          LOADIND(CARDREADERQTAIL);                             35356110
          SUB(QM);                                              35356115
          SAZ;                                                  35356120
          GOTO(CRNOTCC);                                        35356125
          SP2;                                                  35356130
          DESC(STARTOFCRBUFFER);                                35356135
          ST(BFFSTART);                                         35356140
          DESC(ENDOFCRBUFFER);                                  35356145
          ST(BFFEND);                                           35356150
          LOAD(CARDREADERQTAIL);                                35356155
          T(C,B);                                               35356160
          BRM(IANDC);                                           35356165
   %                                                            35356170
      LABL(LOOKAGAIN);                                          35356175
              HEADING("LOOK AG","AIN    ",0,0,2);               35356180
          BRM(DEBLANK);                                         35356185
          SOVN;                                                 35356190
          GOTO(CRNOTCC);                                        35356195
          SP2;                                                  35356200
          DESC(ENDCRD);                                         35356205
          T(C,D);                                               35356210
          T(B,A);                                               35356215
          BRM(COMPARESTRING);                                   35356220
          SOVN;                                                 35356225
          GOTO(ENDCARD);                                        35356230
      IF BCLREADERTOG OR EBCDICREADERTOG THEN                   35356232
        BEGIN                                                   35356234
          SP2;                                                  35356235
```

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```
            DESC(BCLCRD);                                                    35356240
            T(C,D);                                                          35356245
            T(A,B);                                                          35356250
            BRM(COMPARESTRING);                                              35356255
            SOVN;                                                            35356260
            GOTO(BCLCARD);                                                   35356265
            SP2;                                                             35356270
            DESC(EBCCRD);                                                    35356275
            T(C,D);                                                          35356280
            T(A,B);                                                          35356285
            BRM(COMPARESTRING);                                              35356290
            SOVN;                                                            35356295
            GOTO(EBCDICCARD);                                                35356300
          END;                                                               35356302
    %                                                                        35356305
        LABL(LOOKFORNEXT);                                                   35356310
              HEADING("LOOK FO","R NEXT ",0,0,2);                            35356315
            T(A,B);                                                          35356320
            BRM(SCANFORDELIMETER);                                           35356325
            SOV;                                                             35356330
            GOTO(LOOKAGAIN);                                                 35356335
            GOTO(CRNOTCC);                                                   35356340
    %                                                                        35356345
        LABL(ENDCARD);                                                       35356350
              HEADING("END CAR","D      ",0,0,2);                          35356355
            SP1;                                                             35356360
            LOAD(CRSUPRESSNRMESSBIT);                                        35356365
            ST(CRSTATUS);                                                    35356375
        IF BCLREADERTOG AND EBCDICREADERTOG THEN                             35356380
          BEGIN                                                              35356385
            SP2;                                                             35356390
            IF BOOLEAN(READERDEFAULT) THEN DESC(EBCDICVECTOR) ELSE           35356395
                DESC(BCLVECTOR);                                             35356400
            IF HIGHSPEEDREADERTOG THEN BRM(LOADCRT) ELSE                     35356405
                ST(CURRENTCARDTABLE);                                        35356410
          END;                                                               35356415
            GOTO(CRNOTCC);                                                   35356420
    %                                                                        35356425
        IF BCLREADERTOG OR EBCDICREADERTOG THEN                              35356427
          BEGIN                                                              35356429
        LABL(BCLCARD);                                                       35356430
              HEADING("BCL CAR","D      ",0,0,2);                          35356435
            SP2;                                                             35356440
        IF BCLREADERTOG THEN                                                 35356445
          BEGIN                                                              35356450
            DESC(BCLVECTOR);                                                 35356455
            IF HIGHSPEEDREADERTOG THEN BRM(LOADCRT) ELSE                     35356460
                ST(CURRENTCARDTABLE);                                        35356465
            GOTO(CRFORGETCARD);                                              35356467
          END                                                                35356470
        ELSE                                                                 35356475
          BEGIN                                                              35356480
            SPOUT(ICC);                                                      35356485
            SP1;                                                             35356490
            LOAD(LOCKBIT);                                                   35356495
            ST(CRSTATUS);                                                    35356500
            GOTO(TESTCP);                                                    35356502
          END;                                                               35356505
    %                                                                        35356515
        LABL(EBCDICCARD);                                                    35356520
```

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```
                HEADING("EBCDIC ","CARD    ",0,0,2);                          35356525
            SP2;                                                               35356530
        IF EBCDICREADERTOG THEN                                                35356535
          BEGIN                                                                35356540
            DESC(EBCDICVECTOR);                                                35356545
            IF HIGHSPEEDREADERTOG THEN BRM(LOADCRT) ELSE                       35356550
                ST(CURRENTCARDTABLE);                                          35356555
            GOTO(CRFORGETCARD);                                                35356557
          END                                                                  35356560
        ELSE                                                                   35356565
          BEGIN                                                                35356570
            SPOUT(ICC);                                                        35356575
            SP1;                                                               35356580
            LOAD(LOCKBIT);                                                     35356585
            ST(CRSTATUS);                                                      35356590
            GOTO(TESTCP);                                                      35356592
          END;                                                                 35356595
          END;                                                                 35356600
    %                                                                          35356605
    %                                                                          35356610
        LABL(CRNOTCC);                                                         35356615
                HEADING("CR NOT ","CC      ",0,0,2);                           35356620
            SP2;                                                               35359000
            LOAD(CRPOINTER);                                                   35359100
            ST(CARDREADERQTAIL);                                               35370000
    %                                                                          35370010
        LABL(CRFORGETCARD);                                                    35370020
                HEADING("CR FORG","T CARD ",0,0,2);                            35370030
            SP1;                                                               35375000
            CLA;                                                               35376000
            ST(CRFLAGS);                                                       35377000
            GOTO(CARDREADERSTARTIO);                                           35383000
    %                                                                          35384000
        LABL(STORECRCHAR);                                                     35384100
                HEADING("STORE C","R CHAR ",0,0,2);                            35384110
            DS2(0);                                                            35384120
            SP1;                                                               35384125
            T(C,X);                                                            35384127
            STIND(CRPOINTER);                                                  35384130
            T(C,B);                                                            35384135
            SP2;                                                               35384140
            LOAD(CRPOINTER);                                                   35384150
            ST(CRTEMP);                                                        35384160
            IAR;                                                               35384170
            ST(CRPOINTER);                                                     35384180
            SUB(CARDREADERQ);                                                  35384190
            SAZN;                                                              35384200
            GOTO(CROUTOFSPACE);                                                35384210
            LOAD(CRPOINTER);                                                   35384220
            SUB(DES(ENDOFCRBUFFER));                                           35384230
            SAZ;                                                               35384240
            GOTO(LOC+6);                                                       35384250
            DESC(STARTOFCRBUFFER);                                             35384260
            GOTO(LOC-16);                                                      35384270
            SP1;                                                               35384272
            T(X,C);                                                            35384274
            GOTOIND(STORECRCHAR);                                              35384276
    %                                                                          35384280
        LABL(CROUTOFSPACE);                                                    35384290
            T(D,C);                                                            35384300
```

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```
            ST(CRTEMP2);                                                    35384310
            GOTO(TESTCP);                                                   35384320
%                                                                           35384330
        LABL(CRRESTARTSCAN);                                                35384340
                HEADING("CR REST","ART SCA","N      ",0,3);                 35384350
            SP2;                                                            35384360
            LOAD(CRPOINTER);                                                35384370
            SUB(CARDREADERQ);                                               35384380
            SAZN;                                                           35384390
            GOTO(TESTCP);                                                   35384400
            LOAD(CRTEMP2);                                                  35384410
            T(C,D);                                                         35384420
            GOTOIND(STORECRCHAR);                                           35384430
%                                                                           35384440
        LABL(INITIALIZECRSUPRESSION);                                       35385000
                HEADING("INITIAL","IZE CR ","COMPRES","SION   ",4);         35386000
%                                                                           35387000
            PRECISION := 1;                                                 35388000
            LOAD(6);                                                        35389000
            ST(CRSUPRESSCOUNT);                                             35390000
            LOAD(CRSCANBIT + 1);                                            35391000
            ST(CRFLAGS);                                                    35393000
            GOTO(TESTFORCRDONE);                                            35394000
%                                                                           35395000
        IF NOT HIGHSPEEDREADERTOG THEN                                      35395100
           BEGIN                                                            35395110
        LABL(CHECKFORINVALIDCHAR);                                          35422000
                HEADING("CHECK F","OR INVA","LID CHA","R      ",4);         35423000
%                                                                           35424000
            SR8;                                                            35425000
            SP1;                                                            35426000
            SUB(128);                                                       35427000
            SAZ;                                                            35428000
            GOTO(STORECARDCHAR);                                            35429000
           END;                                                             35429100
%                                                                           35430000
        LABL(INVALIDCARDCHAR);                                              35431000
                HEADING("INVALID"," CARD C","HAR    ",0,3);                 35432000
%                                                                           35433000
            SP2;                                                            35434000
        IF HIGHSPEEDREADERTOG THEN                                          35434100
            T(D,C)                                                          35434200
        ELSE                                                                35434300
            DECR(D,C);                                                      35435000
            SUB(DES(CRBUFFER));                                             35436000
            SAZ;                                                            35437000
            GOTO(LOC+7);                                                    35438000
            SP1;                                                            35439000
            LOAD(QM);                                                       35440000
            GOTO(STORECARDCHAR);                                            35441000
            PRECISION := 2;                                                 35442000
            SPOUT(CRINV);                                                   35443000
            SP1;                                                            35444000
            LOAD(LOCKBIT);                                                  35445000
            ST(CRSTATUS);                                                   35446000
            GOTO(TESTOP);                                                   35447000
%                                                                           35447010
        IF HIGHSPEEDREADERTOG THEN                                          35447020
          BEGIN                                                             35447030
        LABL(LOADCRT);                                                      35447100
```

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```
            HEADING("LOAD CR","T       ",0,0,2);                    35447110
        PRECISION := 2;                                             35447120
        DS2(0);                                                     35447130
        T(C,X);                                                     35447140
        LOAD(MODEMSTATUS);                                          35447150
        SAZ;                                                        35447160
        GOTO(LOC - 3);                                              35447170
        FUN(CLEARHIGHSPEEDREADER);                                  35447172
        FUN(INHIBITDMACOUNT);                                       35447177
        DESC(CRFF);                                                 35447180
        BTO(LOADDMA0);                                              35447190
        SR8;                                                        35447200
        BTO(LOADDMA1);                                              35447210
        SP1;                                                        35447230
        CLA;                                                        35447240
        IAR;                                                        35447250
        BTO(HIGHSPEEDREADERMODE);                                   35447260
        FUN(INITIATEHIGHSPEEDREADER);                               35447270
%                                                                   35447300
    LABL(STARTCRTLOAD);                                             35447310
            HEADING("START C","RT LOAD",0,0,2);                     35447320
        SP1;                                                        35447330
        FUN(CLEARHIGHSPEEDREADER);                                  35447332
        LOAD(200);                                                  35447334
        BTO(HIGHSPEEDREADERMODE);                                   35447336
        LOADX(C);                                                   35447340
        SAZN;                                                       35447350
        GOTO(LOADCRTSINGLE);                                        35447360
        BTI(READCRTADDRESS);                                        35447370
        SUBX(0);                                                    35447375
        SAZN;                                                       35447380
        GOTO(LOC+6);                                                35447385
        FUN(INCREMENTCRTADDRESS);                                   35447390
        GOTO(LOC-9);                                                35447395
        LOAD(-17);                                                  35447400
        ST(CRSCRATCH);                                              35447410
%                                                                   35447420
    LABL(LOADCRTLOOP);                                              35447430
            HEADING("LOAD CR","T LOOP ",0,0,2);                     35447440
        INCR(X,X);                                                  35447450
        SP1;                                                        35447460
        LOADX(0);                                                   35447470
        BTO(LOADCRTTABLE);                                          35447480
        FUN(INCREMENTCRTADDRESS);                                   35447490
        INCREMENT(CRSCRATCH);                                       35447500
        SAZ;                                                        35447510
        GOTO(LOADCRTLOOP);                                          35447520
        INCR(X,X);                                                  35447530
        GOTO(STARTCRTLOAD);                                         35447540
%                                                                   35447545
    LABL(LOADCRTSINGLE);                                            35447550
            HEADING("LOAD CR","T SINGL","E       ",0,3);            35447560
        FUN(CLEARHIGHSPEEDREADER);                                  35447565
        LOAD(200);                                                  35447567
        BTO(HIGHSPEEDREADERMODE);                                   35447569
        INCR(X,X);                                                  35447570
        LOADX(0);                                                   35447580
        SAZN;                                                       35447590
        GOTOIND(LOADCRT);                                           35447600
        BTI(READCRTADDRESS);                                        35447610
```

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```
            SUBX(0);                                                    35447615
            SAZN;                                                       35447620
            GOTO(LOC+6);                                                35447625
            FUN(INCREMENTCRTADDRESS);                                   35447630
            GOTO(LOC-9);                                                35447635
            INCR(X,X);                                                  35447640
            LOADX(0);                                                   35447645
            BTO(LOADCRTTABLE);                                          35447650
            GOTO(LOADCRTSINGLE);                                        35447660
        END;                                                            35447665
%                                                                       35447670
%                                                                       35447680
%                                                                       35447690
%                                                                       35448000
    END OF CARD READER MOVER;                                           35449000
%                                                                       35450000
%                                                                       35451000
%       CARDREADERSTORAGE RESERVES ALL OF THE LOW MEMORY STORAGE        35452000
%       LOCATIONS NEEDED FOR HANDLING THE CARD READER.                  35453000
%                                                                       35454000
PROCEDURE CARDREADERSTORAGE;                                            35455000
    BEGIN                                                               35456000
        REAL SEGMENT;                                                   35457000
%                                                                       35458000
    LABL(CRSTATUS);                                                     35459000
        HEADING("CR STAT","US WORD",0,0,2);                             35460000
    DS1(LOCKBIT);                                                       35461000
%                                                                       35462000
    LABL(CRFLAGS);                                                      35463000
        HEADING("CARD RE","ADER FL","AGS    ",0,3);                     35464000
    DS1(0);                                                             35465000
%                                                                       35466000
    LABL(CRCOUNT);                                                      35467000
        HEADING("CARD RE","ADER CO","UNT    ",0,3);                     35468000
    DS1(0);                                                             35469000
%                                                                       35470000
    LABL(CRSUPRESSCOUNT);                                               35471000
        HEADING("CR BLAN","K SUPRE","SSION C","OUNT    ",4);            35472000
    DS1(0);                                                             35473000
%                                                                       35474000
    LABL(CRPOINTER);                                                    35475000
        HEADING("CARD RE","ADER PO","INTER  ",0,3);                     35476000
    DS2(0);                                                             35477000
%                                                                       35477700
    LABL(CRFIRSTSPACE);                                                 35477710
        HEADING("CR FIRS","T SPACE",0,0,2);                             35477720
    DS2(0);                                                             35477730
%                                                                       35478000
    LABL(CRTEMP);                                                       35479000
        HEADING("CR TEMP",0,0,0,1);                                     35480000
    DS2(0);                                                             35481000
%                                                                       35481100
    LABL(CRTEMP2);                                                      35481110
        HEADING("CRTEMP2",0,0,0,1);                                     35481120
    DS2(0);                                                             35481130
%                                                                       35481140
    LABL(CRTEMP3);                                                      35481150
        HEADING("CRTEMP3",0,0,0,1);                                     35481160
    DS2(0);                                                             35481170
%                                                                       35482000
```

Data Documents/Inc.

```
      LABL(CRSCRATCH);                                                          35483000
            HEADING("CR SCRA","TCH     ",0,0,2);                              35484000
          DS1(0);                                                               35485000
1     %                                                                         35486000
2         LABL(CRSCRATCH2);                                                     35487000
3               HEADING("CR SCRA","TCH 2  ",0,0,2);                           35488000
4         DS1(0);                                                             35489000
5     %                                                                       35490000
6         LABL(CURRENTCARDTABLE);                                             35491000
7               HEADING("CURRENT"," CARD T","ABLE    ",0,3);                  35492000
8         IF BOOLEAN(READERDEFAULT) THEN DA(EBCDICVECTOR) ELSE                35493000
9             DA(BCLVECTOR);                                                  35493100
10    %                                                                       35494000
11    %                                                                       35494100
12        LABL(CREF);                                                         35494110
13        IF HIGHSPEEDREADERTOG THEN DS1(255);                                35494120
14        END OF CARD READER STORAGE;                                         35495000
15    %                                                                       35496000
16    %                                                                       35497000
17    %         CARDREADERTABLES CONTAINS THE DATA NEEDED BY THE              35498000
18    %         CARD READER ROUTINES.  THIS PROCEDURE ALSO RESERVES           35499000
19    %         THE PHYSICAL I/O BUFFER FOR THE CARD READING PROCESS.         35500000
20    %                                                                       35501000
21    PROCEDURE CARDREADERTABLES;                                             35502000
22        BEGIN                                                               35503000
23            REAL SEGMENT;                                                   35504000
24    %                                                                       35505000
25        IF HIGHSPEEDREADERTOG THEN                                          35505100
26           BEGIN                                                            35505110
27    %                                                                       35505120
28        IF BCLREADERTOG OR READERDEFAULT = 0 THEN                           35505122
29          BEGIN                                                             35505124
30        LABL(BCLVECTOR);                                                    35505130
31              HEADING("BCL VEC","TOR     ",0,0,2);                        35505140
32        FILL ATEMP[*] WITH                                                  35505145
33                  4"FF203132",4"33343536",4"3738FF3F",                      35505150
34                  4"23403A3E",4"2139DF30",4"2F535455",                      35505160
35                  4"56575859",4"FF5E2C25",4"3D5D225A",                      35505170
36                  4"BF2D4A4B",4"4C4D4E4F",4"5051FFFF",                      35505180
37                  4"242A293B",4"27527F26",4"41424344",                      35505190
38                  4"45464748",4"FFFF2E5B",4"283C6049",                      35505200
39                  4"009F5C5F",4"2B000000";                                  35505210
40        FOR II := 0 STEP 1 UNTIL 19 DO DS4(ATEMP[II]);                      35505215
41          END;                                                              35505217
42    %                                                                       35505220
43        IF EBCDICREADERTOG THEN                                             35505222
44          BEGIN                                                             35505224
45        LABL(EBCDICVECTOR);                                                 35505226
46              HEADING("EBCDIC ","VECTOR ",0,0,2);                           35505228
47        FILL ATEMP[*] WITH                                                  35505230
48            4"FF203132",4"33343536",4"3738FF3A",                            35505232
49            4"2340FF3D",4"2239DF30",4"2F535455",                            35505234
50            4"56575859",4"21FF2C25",4"FF3E3F5A",                            35505236
51            4"BF2D4A4B",4"4C4D4E4F",4"50515E5D",                            35505238
52            4"242A293B",4"FF527F26",4"41424344",                            35505240
53            4"45464748",4"275B2E3C",4"282B6049",                            35505242
54            4"009F5C00";                                                    35505244
55    %                                                                       35505246
56        FOR II := 0 STEP 1 UNTIL 18 DO DS4(ATEMP[II]);                      35505248
57          END;                                                              35505250
```

Data Documents/Inc.

```
      END                                                                    35505252
    ELSE                                                                     35505254
      BEGIN                                                                  35505256
%                                                                            35505260
    IF BCLREADERTOG OR READERDEFAULT = 0 THEN                                35505270
      BEGIN                                                                  35505280
    LABL(BCLVECTOR);                                                         35506000
          HEADING("BCL VEC","TOR    ",0,0,2);                              35507000
%                                                                            35508000
        FOR II := 0,10,20,ASCII["x"]+128,30,ASCII["+"]+128,                  35509000
              128,128,40,50,60,128,70,128,128,128 DO DS1(II);                35510000
      END;                                                                   35510100
%                                                                            35511000
    IF EBCDICREADERTOG THEN                                                  35511100
      BEGIN                                                                  35511200
    LABL(EBCDICVECTOR);                                                      35512000
          HEADING("EBCDIC ","VECTOR ",0,0,2);                                35513000
        FOR II := 0,10,20,ASCII["x"]+128,30,128,128,128,80,90,100,           35514000
              128,110,128,128,128 DO DS1(II);                                35515000
      END;                                                                   35515100
%                                                                            35516000
    LABL(CRTABLE);                                                           35517000
          HEADING("CR TABL","E      ",0,0,2);                              35518000
%                                                                            35519000
    FILL ATEMP[*] WITH                                                       35520000
        4"20313233",4"34353637",4"3039302F",                                 35520010
        4"53545556",4"5758305A",4"2D4A4B4C",                                 35520020
        4"4D4E4F50",4"30522641",4"42434445",                                 35520030
        4"46473049",4"38803F23",4"403A3E21",                                 35520040
        4"30805980",4"5E2C253D",4"5D223080",                                 35520050
        4"51808024",4"2A293B27",4"30804880",                                 35520060
        4"802E5B28",4"3C600080",4"36803A23",                                 35520070
        4"40803D22",4"80805921",4"802C2580",                                 35520080
        4"3E3F8080",4"515E5D24",4"2A293B80",                                 35520090
        4"80804827",4"5B2E3C28",4"2B608080";                                 35520100
%                                                                            35520110
    FOR II := 0 STEP 1 UNTIL 29 DO DS4(ATEMP[II]);                           35520120
%                                                                            35561100
      END;                                                                   35561110
%                                                                            35562000
%                                                                            35562100
    LABL(ENDCRD);                                                            35562110
        DS4(4"454E440D");                                                    35562120
%                                                                            35562130
    IF BCLREADERTOG OR EBCDICREADERTOG THEN                                  35562132
      BEGIN                                                                  35562134
    LABL(BCLCRD);                                                            35562140
        DS4(4"42434C0D");                                                    35562150
%                                                                            35562160
    LABL(EBCCRD);                                                            35562170
        DS4(4"45424344");                                                    35562180
        DS3(4"49430D");                                                      35562190
      END;                                                                   35562192
%                                                                            35562200
    LABL(CRBUFFER);                                                          35563000
          HEADING("CARD RE","ADER BU","FFER   ",0,3);                        35564000
%                                                                            35565000
        FOR II := 0 STEP 1 UNTIL                                             35566000
              (IF HIGHSPEEDREADERTOG THEN 19 ELSE 39) DO DS4(0);             35566100
%                                                                            35567000
```

Data Documents/Inc.

```
        END OF CARD READER TABLES;                                          35568000
%                                                                           35569000
%                                                                           40000000
%           THE NEXT PROCEDURE CONTAINS THE GENERAL SPO CODE.               40001000
%                                                                           40002000
PROCEDURE SPOCODE;                                                          40003000
    BEGIN                                                                   40004000
        REAL SEGMENT;                                                       40005000
%                                                                           40006000
    LABL(ENTERSPOUTMESSAGE);                                                40007000
            HEADING("ENTER S","POUT ME","SSAGE  ",0,3);                     40008000
        PRECISION := 2;                                                     40009000
        DS2(0);                                                             40010000
        ADD(DES(SPOMESS));                                                  40011000
        STIND(PUTSPOUT);                                                    40014000
        SP1;                                                                40014100
        LOAD(240);                                                          40014200
        MIN;                                                                40014300
        SP2;                                                                40014400
        LOAD(PUTSPOUT);                                                     40015000
        IAR;     IAR;                                                       40016000
        ST(PUTSPOUT);                                                       40017000
        SUB(DES(SPOMAX));                                                   40018000
        SAZ;                                                                40019000
        GOTO(LOC+6);                                                        40020000
        DESC(SPOTABLE);                                                     40021000
        ST(PUTSPOUT);                                                       40022000
        SP1;                                                                40023000
        LOAD(9 + (IF READERTOG THEN 2 ELSE 32) +                            40023100
                (IF PUNCHTOG THEN 4 ELSE 64));                              40023200
        MIN;                                                                40023250
        GOTOIND(ENTERSPOUTMESSAGE);                                         40024000
%                                                                           40025000
    LABL(SPOSLEEP);                                                         40026000
            HEADING("SPO SLE","EP     ",0,0,2);                             40027000
        DS2(0);                                                             40028000
        SAZ;                                                                40029000
        GOTO(LOC+5);                                                        40030000
        SP2;                                                                40031000
        LOAD(SPOSLEEP);                                                     40032000
        ST(SPOUTLABEL);                                                     40033000
        GOTO(TESTSPOINPUT);                                                 40034000
%                                                                           40035000
    END OF SPO CODE;                                                        40036000
%                                                                           40037000
%                                                                           40038000
%           THE NEXT PROCEDURE CONTAINS THE CODE FOR HANDLING SPO INPUT.    40039000
%           IT CAN HANDLE MULTI-LINE SPO INPUTS,BACKSPACING, INCLUDING      40040000
%           BACKSPACING PAST THE BEGINNING OF LINE, AND KEYINS WHEN NO      40041000
%           SPACE IS AVAILABLE FOR STORING THE MESSAGE.  DELETE IS ALSO     40042000
%           HANDLED PROPERLY BY THIS PIECE OF CODE.  ONE NEED ONLY DEPRESS  40043000
%           THE FIRST KEY OF THE MESSAGE THEN WAIT FOR THAT LETTER TO BE    40044000
%           PRINTED IN ORDER TO START THE ENTRY OF A SPO MESSAGE.           40045000
%           THE  CHARACTER " IS THE BACKSPACE CHARACTER AS IT IS FOR        40046000
%           THE CENTRAL SPO.  A MESSAGE CAN BE DELETED BY TYPING RUB OUT    40047000
%           (THE KEY).  DEPRESSING RETURN CAUSED END OF MESSAGE ACTION.     40048000
%                                                                           40049000
PROCEDURE KEYINCODE;                                                        40050000
    BEGIN                                                                   40051000
        REAL SEGMENT;                                                       40052000
```

Data Documents/Inc.

```
%                                                                    40053000
    LABL(SPOINPUT);                                                  40054000
          HEADING("SPO INP","UT      ",0,0,2);                       40055000
1       SP1;                                                         40056000
2       LOAD(SPOSTATUS);                                             40057000
3       SOD;                                                         40058000
4       GOTO(NEWKEYIN);                                              40059000
5       SANN;                                                        40060000
6       GOTO(IDLESPOREAD);                                           40061000
7       SL1;                                                         40062000
8       SANN;                                                        40063000
9       GOTO(ACTUALSPOREAD);                                         40064000
10      BTI(SPOREAD);                                                40065000
11      GOTO(NSECOND);                                               40066000
12  %                                                                40067000
13  LABL(ACTUALSPOREAD);                                             40068000
14        HEADING("ACTUAL ","SPO REA","D       ",0,3);               40069000
15      SEN(SPOREADREADY);                                           40070000
16      GOTO(NSECOND);                                               40071000
17      BTI(SPOREAD);                                                40072000
18      CMA;                                                         40073000
19      SAZN;                                                        40074000
20      GOTO(DELETEKEYIN);                                           40075000
21      CMA;                                                         40076000
22      ANDM(127);                                                   40077000
23      ST(CHAR);                                                    40078000
24      STIND(KEYINPOINTER);                                         40079000
25      SUB(5);                                                      40079100
26      SAZN;                                                        40079200
27      GOTO(FOUNDWRU);                                              40079300
28      SUB(CR-5);                                                   40080000
29      SAZN;                                                        40081000
30      GOTO(ENDOFKEYIN);                                            40082000
31      SUB(32 - CR);                                                40083000
32      SANN;                                                        40084000
33      GOTO(NSECOND);                                               40085000
34      SUB(96 - 32 + CR);                                           40086000
35      SAN;                                                         40087000
36      GOTO(NSECOND);                                               40088000
37      SP2;                                                         40092000
38      INCREMENT(KEYINPOINTER);                                     40093000
39      BRM(CHECKKEYINBUFFER);                                       40093100
40      GOTO(NSECOND);                                               40094000
41  %                                                                40095000
42  LABL(ENDOFKEYIN);                                                40096000
43        HEADING("END OF ","KEYIN  ",0,0,2);                        40097000
44      PRECISION := 1;                                              40098000
45      LOAD(SPOSTATUS);                                             40099000
46      SAN;                                                         40100000
47      GOTO(LOC+10);                                                40101000
48      SPOUT(REENTERKEYIN);                                         40101100
49      GOTO(SPOFORGETMSG);                                          40101120
50  IF BCLPUNCHTOG OR EBCDICPUNCHTOG THEN                            40101140
51    BEGIN                                                          40101160
52      SP2;                                                         40101180
53      DESC(STARTOFKEYINBUFFER);                                    40101200
54      ST(BFFSTART);                                                40101220
55      DESC(ENDOFKEYINBUFFER);                                      40101240
56      ST(BFFEND);                                                  40101260
57      LOAD(KEYINQTAIL);                                            40101280
```

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```
            T(C,B);                                                    40101300
            BRM(DEBLANK);                                              40101320
            SOVN;                                                      40101340
            GOTO(MSGTOSYSTEM);                                         40101360
            SP2;                                                       40101380
            DESC(CPSTR);                                               40101400
            T(C,D);                                                    40101420
            BRM(COMPARESTRING);                                        40101440
            SOV;                                                       40101460
            GOTO(MSGTOSYSTEM);                                         40101480
            BRM(IANDC);                                                40101485
            BRM(DEBLANK);                                              40101500
            SOVN;                                                      40101520
            GOTO(MSGTOSYSTEM);                                         40101540
            IF BCLPUNCHTOG AND EBCDICPUNCHTOG THEN T(B,A);             40101560
          IF BCLPUNCHTOG THEN                                          40101580
            BEGIN                                                      40101600
            SP2;                                                       40101620
            DESC(BCLCRD);                                              40101640
            T(C,D);                                                    40101660
            BRM(COMPARESTRING);                                        40101680
            SOVN;                                                      40101700
            GOTO(SPOBCL);                                              40101720
            END;                                                       40101740
          IF EBCDICPUNCHTOG THEN                                       40101760
            BEGIN                                                      40101780
            SP2;                                                       40101800
            DESC(EBCCRD);                                              40101820
            T(C,D);                                                    40101840
            IF BCLPUNCHTOG THEN T(A,B);                                40101860
            BRM(COMPARESTRING);                                        40101880
            SOVN;                                                      40101900
            GOTO(SPOEBCDIC);                                           40101920
            END;                                                       40101940
            GOTO(MSGTOSYSTEM);                                         40101960
          %                                                            40101980
          IF EBCDICPUNCHTOG THEN                                       40102000
            BEGIN                                                      40102020
          LABL(SPOEBCDIC);                                             40102040
                HEADING("SPO EBC","DIC     ",0,0,2);                 40102060
            SP2;                                                       40102080
            DESC(EBCDICPUNCHTABLE);                                    40102100
            ST(CURRENTPUNCHTABLE);                                     40102120
            GOTO(SPOFORGETMSG);                                        40102140
            END;                                                       40102160
          %                                                            40102180
          IF BCLPUNCHTOG THEN                                          40102200
            BEGIN                                                      40102220
          LABL(SPOBCL);                                                40102240
                HEADING("SPO BCL",0,0,0,1);                          40102260
            SP2;                                                       40102280
            DESC(BCLPUNCHTABLE);                                       40102300
            ST(CURRENTPUNCHTABLE);                                     40102320
            GOTO(SPOFORGETMSG);                                        40102340
            END;                                                       40102360
            END;                                                       40102365
          %                                                            40102380
          LABL(MSGTOSYSTEM);                                           40102400
                HEADING("MSG TO ","SYSTEM ",0,0,2);                  40102420
            SP2;                                                       40106010
```

Data Documents/Inc.

```
            INCREMENT(KEYINPOINTER);                                    40106020
            BRM(CHECKKEYINBUFFER);                                      40106024
            LOAD(KEYINPOINTER);                                         40106026
            ST(KEYINQTAIL);                                             40106030
    %                                                                   40106032
    LABL(SPOFORGETMSG);                                                 40106034
            HEADING("SPO FOR","GET MSG",0,0,2);                         40106036
            SP1;                                                        40106040
            LOAD(SPOSTATUS);                                            40106050
            ANDM(255 - DONTSTOREBIT - INBUSYBIT);                       40106060
            ST(SPOSTATUS);                                              40106070
            GOTO(NSECOND);                                              40139000
    %                                                                   40140000
    LABL(FOUNDWRU);                                                     40140010
            HEADING("FOUND W","RU      ",0,0,2);                        40140020
            LOAD(MODEMFLAGS);                                           40140030
            SAN;                                                        40140040
            GOTO(LINEINACTIVE);                                         40140050
            SP2;                                                        40140060
            LOAD(LASTACTIVITY);                                         40140070
            ADD(MODEMSTATUS);                                           40140080
            ADD(NEXTACTIVITY);                                          40140090
            SUB(RECEIVEACK);                                            40140100
            SAZN;                                                       40140110
            GOTO(ENQAGAIN);                                             40140120
            SPOUT(LINEINUSE);                                           40140130
            SP1;                                                        40140140
            GOTO(DELETEKEYIN);                                          40140150
    %                                                                   40140160
    LABL(ENQAGAIN);                                                     40140170
            HEADING("ENQ AGA","IN      ",0,0,2);                        40140180
            SP1;                                                        40140190
            LOAD(MODEMFLAGS);                                           40140200
            ANDM(63);                                                   40140210
            ST(MODEMFLAGS);                                             40140220
            GOTO(DELETEKEYIN);                                          40140225
    %                                                                   40140230
    LABL(LINEINACTIVE);                                                 40140240
            HEADING("LINE IN","  ACTIVE",0,0,2);                       40140250
            IBD;                                                        40140260
            CSQ(HL);                                                    40140270
            SP1;                                                        40140280
            LOAD(1 + (IF PRINTERTOG THEN 2 ELSE 0) +                    40140282
                 (IF PUNCHTOG THEN 4 ELSE 0));                          40140284
            ST(NRMASK);                                                 40140286
            GOTO(DELETEKEYIN);                                          40140290
    %                                                                   40140300
    LABL(DELETEKEYIN);                                                  40141000
            HEADING("DELETE ","KEYIN   ",0,0,2);                        40142000
            PRECISION := 1;                                             40143000
            LOAD(CR);                                                   40144000
            ST(CHAR);                                                   40145000
            LOAD(SPOSTATUS);                                            40146000
            ANDM(255 - DONTSTOREBIT - INBUSYBIT);                       40147000
            ST(SPOSTATUS);                                              40148000
            GOTO(NSECOND);                                              40163000
    %                                                                   40164000
    LABL(ENDOFLINE);                                                    40165000
            HEADING("END OF ","LINE    ",0,0,2);                        40166000
            SP1;                                                        40167000
```

Data Documents/Inc.

```
          LOAD(SPOSTATUS);                                              40168000
          ADD(KEYINCONTINUEDBIT);                                       40169000
          ST(SPOSTATUS);                                                40170000
          GOTO(LOC+15);                                                 40173000
     %                                                                  40174000
LABL(CHECKKEYINBUFFER);                                                 40174100
          HEADING("CHECK K","EYIN BU","FFER    ",0,3);                  40174110
          DS2(0);                                                       40174120
          SP2;                                                          40174130
          DESC(ENDOFKEYINBUFFER);                                       40174140
          SUB(KEYINPOINTER);                                            40174150
          SAZ;                                                          40174160
          GOTO(LOC+6);                                                  40174170
          DESC(STARTOFKEYINBUFFER);                                     40174180
          ST(KEYINPOINTER);                                             40174190
          LOAD(KEYINPOINTER);                                           40174200
          SUB(KEYINQ);                                                  40174210
          SAZ;                                                          40174220
          GOTOIND(CHECKKEYINBUFFER);                                    40174230
          GOTO(NOSPACEFORKEYIN);                                        40174240
     %                                                                  40174250
LABL(NEWKEYIN);                                                         40175000
          HEADING("NEW KEY","IN     ",0,0,2);                         40176000
          PRECISION := 1;                                               40176100
          RR1;                                                          40177000
          SOD;                                                          40178000
          GOTO(LOC+13);                                                 40179000
          RL1;                                                          40180000
          ANDM(255 - KEYINCONTINUEDBIT - INBUSYBIT);                    40181000
          ADD(KEYINCONTINUEDBIT + INBUSYBIT);                           40182000
          ST(SPOSTATUS);                                                40183000
          BTI(SPOREAD);                                                 40184000
          GOTO(NSECOND);                                                40184010
          SP2;                                                          40184800
          LOAD(KEYINQTAIL);                                             40185000
          ST(KEYINPOINTER);                                             40186000
          SP1;                                                          40194000
          LOAD(SPOSTATUS);                                              40197000
          SR1;                                                          40198000
          SL1;                                                          40199000
          IAR;                                                          40200000
          ST(SPOSTATUS);                                                40201000
          GOTO(ACTUALSPOREAD);                                          40202000
     %                                                                  40203000
LABL(NOSPACEFORKEYIN);                                                  40204000
          HEADING("NO SPAC","E FOR K","EYIN    ",0,3);                  40205000
          SP1;                                                          40206000
          LOAD(SPOSTATUS);                                              40207000
          ANDM(255 - DONTSTOREBIT - INBUSYBIT);                         40208000
          ADD(DONTSTOREBIT + INBUSYBIT);                                40209000
          ST(SPOSTATUS);                                                40210000
          GOTO(NSECOND);                                                40224000
     %                                                                  40225000
LABL(IDLESPOREAD);                                                      40271000
          HEADING("IDLE SP","O READ ",0,0,2);                           40272000
          SP1;                                                          40273000
          BTI(SPOREAD);                                                 40274000
          ANDM(127);                                                    40275000
          ST(CHAR);                                                     40276000
          SUB(CR);                                                      40277000
```

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```
            SAZN;                                                    40278000
            GOTO(ENDOFKEYIN);                                        40279000
            SUB(DELETE - CR);                                        40280000
            SAZN;                                                    40281000
            GOTO(DELETEKEYIN);                                       40282000
            GOTO(NSECOND);                                           40285000
      %                                                              40292000
          END OF KEYIN CODE;                                         40293000
      %                                                              40294000
      %                                                              40295000
      %       THE NEXT PROCEDURE CONTAINS THE CODE TO PRINT SPO OUTPUT 40296000
      %       AND INPUT ON THE SUPERVISORY PRINTER.                  40297000
      %       IT HANDLES PROBLEMS OF CONTINUED RECORDS ON INPUT OR   40298000
      %       OUTPUT.                                                40299000
      %                                                              40300000
      PROCEDURE SPOUTCODE;                                           40301000
          BEGIN                                                      40302000
              REAL SEGMENT;                                          40303000
      %                                                              40304000
          LABL(SPOUTNOTBUSY);                                        40305000
                HEADING("SPOUT N","OT BUSY",0,0,2);                  40306000
              SPI;                                                   40307000
              LOAD(SPOSTATUS);                                       40308000
              SOD;                                                   40309000
              GOTO(FINDASPOUT);                                      40310000
              ANDM(255 - OUTBUSYBIT - ECHOBIT);                      40311000
              ADD(ECHOBIT + OUTBUSYBIT);                             40312000
              ST(SPOSTATUS);                                         40313000
              LOAD(-72);                                             40313100
              ST(SPOUTCOUNT);                                        40313200
              SP2;                                                   40314000
              DESC(ECHOBACKKEYIN);                                   40315000
              ST(SPOUTLABEL);                                        40316000
      %                                                              40317000
          LABL(ECHOBACKKEYIN);                                       40318000
                HEADING("ECHO BA","CK KEYI","N      ",0,3);          40319000
              SP1;                                                   40320000
              LOAD(CHAR);                                            40325000
              SAZN;                                                  40326000
              GOTO(TESTSPOINPUT);                                    40327000
              BTO(SPOWRITE);                                         40328000
              SUB(CR);                                               40329000
              SAZN;                                                  40330000
              GOTO(ENDOFECHOBACK);                                   40331000
              CLA;                                                   40332000
              ST(CHAR);                                              40333000
              INCREMENT(SPOUTCOUNT);                                 40333100
              SAZ;                                                   40333200
              GOTO(TESTSPCINPUT);                                    40334000
              SPOUTSLEEP(ENDOFSPOLINE);                              40334100
      %                                                              40335000
          LABL(ENDOFECHOBACK);                                       40355000
                HEADING("END OF ","ECHO BA","CK     ",0,3);          40356000
              PRECISION := 1;                                        40357000
              SPOUTSLEEP(C);                                         40358000
              SP1;                                                   40359000
              LOAD(LF);                                              40360000
              BTO(SPOWRITE);                                         40361000
              CLA;                                                   40362000
              ST(CHAR);                                              40363000
```

Data Documents/Inc.

```
        LOAD(SPOSTATUS);                                                40364000
        ANDM(INBUSYBIT + DONTSTOREBIT);                                 40365000
        ST(SPOSTATUS);                                                  40366000
        SPOUTSLEEP(SPOUTNOTBUSY);                                       40367000
%                                                                       40368000
    LABL(NOSYSTEMSPOUTS);                                               40368100
            HEADING("NO SYST","EM SPOL","TS      ",0,3);                40368110
        SP2;                                                            40368120
        LOAD(SPOUTQ);                                                   40368130
        ST(SPOPOINTER);                                                 40368135
        SUB(SPOUTQTAIL);                                                40368140
        SAZN;                                                           40368150
        GOTO(TESTSPOINPUT);                                             40368160
        SP1;                                                            40368170
        LOAD(SPOSTATUS);                                                40368180
        ANDM(255 - LOCALBIT);                                           40368190
        GOTO(FOUNDSPOUT);                                               40368200
%                                                                       40368210
    LABL(FINDASPOUT);                                                   40369000
            HEADING("FIND A ","SPOUT  ",0,0,2);                         40370000
        SP2;                                                            40371000
        LOADIND(NEXTSPOUT);                                             40393000
        SAZN;                                                           40394000
        GOTO(NOSYSTEMSPOUTS);                                           40395000
        ST(SPOPOINTER);                                                 40396000
        CLA;    STIND(NEXTSPOUT);                                       40397000
        LOAD(NEXTSPOUT);                                                40398000
        IAR;    IAR;                                                    40399000
        ST(NEXTSPOUT);                                                  40400000
        SUB(DES(SPOMAX));                                               40401000
        SAZ;                                                            40402000
        GOTO(LOC+6);                                                    40403000
        DESC(SPOTABLE);                                                 40404000
        ST(NEXTSPOUT);                                                  40405000
        SP1;                                                            40406000
        LOAD(SPOSTATUS);                                                40407000
        ANDM(255 - LOCALBIT);                                           40408000
        ADD(LOCALBIT);                                                  40409000
%                                                                       40411100
    LABL(FOUNDSPOUT);                                                   40411200
        ST(SPOSTATUS);                                                  40412000
        LOAD(-73);                                                      40414000
        ST(SPOUTCOUNT);                                                 40419000
        LOAD(SPOSTATUS);                                                40420000
        ANDM(255 - OUTBUSYBIT);                                         40421000
        ADD(OUTBUSYBIT);                                                40422000
        ST(SPOSTATUS);                                                  40423000
%                                                                       40424000
    LABL(SPOUTMSG);                                                     40425000
            HEADING("SPOUT M","SG      ",0,0,2);                        40426000
        SPOUTSLEEP(C);                                                  40427000
        SP1;                                                            40428000
        INCREMENT(SPOUTCOUNT);                                          40429000
        SAZN;                                                           40430000
        GOTO(ENDOFSPOLINE);                                             40431000
        LOAD(SPOSTATUS);                                                40432000
        SODN;                                                           40433000
        GOTO(SPOBREAK);                                                 40434000
        BRM(SPOFETCH);                                                  40435000
        BTO(SPOWRITE);                                                  40443000
```

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```
            SUB(CR);                                                    40444000
            SAZ;                                                        40445000
            GOTO(TESTSPOINPUT);                                         40446000
      %                                                                 40447000
      LABL(ENDOFSPOUT);                                                 40448000
            HEADING("END OF ","SPOUT  ",0,0,2);                         40449000
            LOAD(SPOSTATUS);                                            40451000
            SR1;     SR1;                                               40452000
            SUBN;                                                       40453000
            GOTO(LOC+7);                                                40453100
            SP2;                                                        40453200
            LOAD(SPOPOINTER);                                           40454000
            ST(SPOUTQ);                                                 40455000
            SP2;                                                        40456000
            SPOUTSLEEP(0);                                              40457000
            SP1;                                                        40458000
            LOAD(LF);                                                   40459000
            BTO(SPOWRITE);                                              40460000
            LOAD(SPOSTATUS);                                            40460010
            ANDM(255 - 6);                                              40460020
            ST(SPOSTATUS);                                              40460030
            SPOUTSLEEP(SPOUTNOTBUSY);                                   40463000
      %                                                                 40464000
      LABL(SPOBREAK);                                                   40464100
            HEADING("SPO BRE","AD     ",0,0,2);                         40464110
            PRECISION := 1;                                             40464115
            BRM(SPOFETCH);                                              40464120
            SUB(CR);                                                    40464130
            SAZ;                                                        40464140
            GOTO(LOC-6);                                                40464150
            LOAD(CR);                                                   40464160
            BTO(SPOWRITE);                                              40464170
            GOTO(ENDOFSPOUT);                                           40464180
      %                                                                 40464190
      LABL(ENDOFSPOLINE);                                               40464200
            HEADING("END OF ","SPO LIN","E      ",0,3);                 40464210
            SP1;                                                        40464215
            LOAD(CR);                                                   40464220
            BTO(SPOWRITE);                                              40464230
            LOAD(-72);                                                  40464240
            ST(SPOUTCOUNT);                                             40464250
            SPOUTSLEEP(0);                                              40464260
            SP1;                                                        40464270
            LOAD(LF);                                                   40464280
            BTO(SPOWRITE);                                              40464290
            LOAD(SPOSTATUS);                                            40464292
            ANDM(ECHOBIT);                                              40464294
            SAZN;                                                       40464296
            GOTO(SPOUTMSG);                                             40464300
            SPOUTSLEEP(ECHOBACKKEYIN);                                  40464302
      %                                                                 40464310
      LABL(SPOFETCH);                                                   40464320
            HEADING("SPO FET","CH     ",0,0,2);                         40464330
            DS2(0);                                                     40464340
            SP2;                                                        40464350
            LOAD(SPOPOINTER);                                           40464360
            I(C,X);                                                     40464370
            IAR;                                                        40464380
            ST(SPOPOINTER);                                             40464390
            SUB(DES(ENDOFSPOBUFFER));                                   40464400
```

Data Documents/Inc.

```
            SAZ;                                                    40464410
            GOTO(LOC+6);                                            40464420
            DESC(STARTOFSPOBUFFER);                                 40464430
            ST(SPOPOINTER);                                         40464440
            SP1;                                                    40464450
            LOADX(0);                                               40464460
            GOTOIND(SPOFETCH);                                      40464470
      %                                                             40464480
      %                                                             40472000
      %                                                             40503000
      END OF SPOUT CODE;                                            40504000
      %                                                             40505000
      %                                                             40506000
      %       THE NEXT PROCEDURE RESERVES THE STORAGE NEEDDED TO    40507000
      %       HANDLE THE SPO.                                       40508000
      %                                                             40509000
      PROCEDURE SPOSTORAGE;                                         40510000
          BEGIN                                                     40511000
            REAL SEGMENT;                                           40512000
      %                                                             40513000
          LABL(SPOUTCOUNT);                                         40514000
                HEADING("SPOUT C","OUNT    ",0,0,2);              40515000
            DS1(0);                                                 40516000
      %                                                             40529000
          LABL(SPOUTLABEL);                                         40530000
                HEADING("SPOUT L","ABEL    ",0,0,2);              40531000
            DA(SPOUTNOTBUSY);                                       40532000
      %                                                             40533000
          LABL(SPOPOINTER);                                         40538000
                HEADING("SPOUT P","OINTER ",0,0,2);                 40539000
            DS2(0);                                                 40540000
      %                                                             40541000
          LABL(NEXTSPOUT);                                          40542000
                HEADING("NEXT SP","OUT     ",0,0,2);              40543000
            DA(SPOTABLE);                                           40544000
      %                                                             40545000
          LABL(PUTSPOUT);                                           40546000
                HEADING("PUT SPO","UT      ",0,0,2);              40547000
            DA(SPOTABLE);                                           40548000
      %                                                             40549000
          LABL(CHAR);                                               40550000
                HEADING("CHAR    ",0,0,0,1);                      40551000
            DS1(0);                                                 40552000
      %                                                             40553000
      %                                                             40565000
          LABL(KEYINPOINTER);                                       40566000
                HEADING("KEYIN P","OINTER ",0,0,2);                 40567000
            DS2(0);                                                 40568000
      %                                                             40569000
          LABL(SPOSTATUS);                                          40570000
                HEADING("SPO STA","TUS     ",0,0,2);              40571000
            DS1(0);                                                 40572000
      %                                                             40573000
      %                                                             40574000
          END OF SPO STORAGE;                                       40575000
      %                                                             40576000
      %       THE NEXT PROCEDURE CONTAINS TABLES NEEDED BY THE SPO  40577000
      %       ROUTINES.                                             40578000
      %                                                             40579000
      PROCEDURE SPOTABLES;                                          40580000
```

Data Documents/Inc.

```
      BEGIN                                                                    40581000
           REAL SEGMENT;                                                       40582000
      %                                                                        40583000
      LABL(SPOTABLE);                                                          40584000
           HEADING("SPO TAB","LES     ",0,0,2);                               40585000
      FOR II := 0 STEP 1 UNTIL 11 DO DS2(0);                                   40586000
      %                                                                        40587000
      LABL(SPOMAX);                                                            40588000
      %                                                                        40589000
      LABL(SPOMESS);                                                           40590000
      FILL ATEMP[*] WITH                                                       40591000
           4"4E4F2052",4"4553504F",4"4E53450D",                                40591010
           4"4E4F204D",4"45400D40",4"49535349",                                40591020
           4"4E47204D",4"45535341",4"47450D54",                                40591030
           4"52414E53",4"4049542D",4"4142F52",                                 40591040
           4"540D4E4F",4"20535953",4"54454D20",                                40591050
           4"4C494E4B",4"0D435220",4"4E4F5420",                                40591060
           4"52454144",4"590D4352",4"20524541",                                40591070
           4"44204348",4"45434B0D",4"43522049",                                40591080
           4"4E562043",4"48520D4C",4"50204E4F",                                40591090
           4"54205245",4"4144590D",4"5052494E",                                40591100
           4"54204348",4"45434B0D",4"52452D45",                                40591110
           4"4E544552",4"204B4549",4"494E0D43",                                40591120
           4"4F4E4E45",4"4354494F",4"4E204553",                                40591130
           4"5441424C",4"49534845",4"440D4C49",                                40591140
           4"4E452049",4"4E205553",4"450D4350",                                40591150
           4"204E4F54",4"20524541",4"44590D50",                                40591160
           4"554E4348",4"20434845",4"434B0D43",                                40591170
           4"5220494E",4"5620434F",4"44450D00";                                40591180
      %                                                                        40591190
      FOR II := 0 STEP 1 UNTIL 53 DO                                           40591200
           DS4(ATEMP[II]);                                                     40591210
      %                                                                        40591220
      %                                                                        40591230
      IF BCLPUNCHTOG OR EBCDICPUNCHTOG THEN                                    40591240
        BEGIN                                                                  40591250
      LABL(CPSTR);                                                             40591260
           DS3(4"43500D");                                                     40591270
        END;                                                                   40591280
      %                                                                        40591290
      %                                                                        40591300
           FOR II := "A","O"," ","R","E","S","P","O","N","S","E"               40593000
                DO MSG(II);                                                    40594000
           DS1(CR);                                                            40595000
      %                                                                        40597000
           FOR II := "N","O"," ","M","E","M" DO MSG(II);                       40599000
           DS1(CR);                                                            40600000
      %                                                                        40601000
           FOR II := "M","I","S","S","I","N","G"," ","M","E","S","S","A",      40603000
                "G","E" DO MSG(II);                                            40604000
           DS1(CR);                                                            40605000
      %                                                                        40606000
           FOR II := "T","R","A","N","S","M","I","T"," ","A","B","O","R",      40608000
                "T" DO MSG(II);                                                40609000
           DS1(CR);                                                            40610000
      %                                                                        40611000
           FOR  II := "A","O"," ","S","Y","S","T","E","M"," ","L","I","N",     40613000
                "K" DO MSG(II);                                                40614000
           DS1(CR);                                                            40615000
      %                                                                        40616000
```

Data Documents/Inc.

```
                FOR II := "C","R"," ","N","O","T"," ","R","E","A","D","Y"          40618000
                    DO MSG(II);                                                    40619000
                DS1(CR);                                                           40620000
        %                                                                          40621000
                FOR II := "C","R"," ","R","E","A","D"," ","C","H","E","C",         40623000
                    "K" DO MSG(II);                                                40624000
                DS1(CR);                                                           40625000
        %                                                                          40626000
                FOR II := "C","R"," ","I","N","V"," ","C","H","R" DO MSG(II);      40628000
                DS1(CR);                                                           40629000
        %                                                                          40630000
                FOR II := "L","P"," ","N","O","T"," ","R","E","A","D","Y"          40632000
                    DO MSG(II);                                                    40633000
                DS1(CR);                                                           40634000
        %                                                                          40635000
                FOR II := "P","R","I","N","T"," ","C","H","E","C","K"              40637000
                    DO MSG(II);                                                    40638000
                DS1(CR);                                                           40639000
        %                                                                          40640000
                FOR II := "R","E","-","E","N","T","E","R"," ","K","E","Y",         40642000
                    "I","N" DO MSG(II);                                            40643000
                DS1(CR);                                                           40644000
        %                                                                          40645000
                FOR II := "C","O","N","N","E","C","T","I","O","N"," ",             40647000
                    "E","S","T","A","B","L","I","S","H","E","D"                    40648000
                    DO MSG(II);                                                    40649000
                DS1(CR);                                                           40650000
        %                                                                          40651000
        %                                                                          40651100
        %                                                                          40651110
            END OF SPO TABLES;                                                     40652000
        %                                                                          40653000
        %                                                                          45000000
        %       PUNCH-INTERRUPT IS A PROCEDURE WHICH CONTAINS THE CODE TO          45001000
        %       HANDLE THE CARD PUNCH INTERRUPTS.                                  45002000
        %                                                                          45003000
        PROCEDURE PUNCHINTERRUPT;                                                  45004000
            BEGIN                                                                  45005000
                REAL SEGMENT;                                                      45006000
            DEFINE LOADANDPUNCH(ZZ)   =                                            45007000
                    BEGIN   LOADX(ZZ);   BTO(CPWRITE);   END#;                     45007100
        %                                                                          45008000
            LABL(CPINTERRUPT);                                                     45009000
                    HEADING("CP INTE","RRUPT  ",0,0,2);                            45010000
                ST(CPTEMP);                                                        45010100
                T(B,A);                                                            45010200
                T(D,C);                                                            45010300
                ST(CPTEMP2);                                                       45010400
                T(Q,A);                                                            45010500
                T(Y,C);                                                            45010600
                ST(CPTEMP3);                                                       45010700
                SP1;                                                               45010800
                SEN(CPBUSY);                                                       45010810
                GUTO(CPFINISHED);                                                  45010830
                LOAD(64);                                                          45010900
                MIN;                                                               45011000
                IBE;                                                               45011100
                CSQ(LOC+3);                                                        45011200
                LOAD(PRECISIONCON);                                                45011300
                SP1;                                                               45011400
```

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```
          ST(CPRESTOREPRECISION);                                          45011500
          LOAD(-8);                                                        45015000
          ST(PC2);                                                         45016000
          SP2;                                                             45017000
          DESC(PUNCHBUFFER);                                               45018000
          T(C,X);                                                          45023000
          LOAD(20);                                                        45024000
          T(C,A);                                                          45025000
          SEN(CPFIRSTCUR);                                                 45025100
          INCR(X,X);                                                       45025500
     %                                                                     45026000
LABL(CPTRANSFERDATA);                                                      45027000
          HEADING("CP TRAN","SFER DA","TA      ",0,3);                     45028000
          SP1;                                                             45029000
          FOR SEGMENT := 0 STEP 2 UNTIL 18 DO LOADANDPUNCH(SEGMENT);       45030000
          ADDR(A,X);                                                       45031000
          SP1;                                                             45032000
          INCREMENT(PC2);                                                  45033000
          SAZ;                                                             45034000
          GOTO(CPTRANSFERDATA);                                            45035000
     %                                                                     45035400
LABL(CPRESTOREPRECISION);                                                  45035500
          HEADING("CP REST","ORE PRE","CISION ",0,3);                      45035600
          DS1(0);                                                          45035700
          IBD;                                                             45035800
          CSQ(LOC+3);                                                      45035900
          SP1;                                                             45036000
          LOAD(4);                                                         45036100
          MIN;                                                             45036200
          SP4;                                                             45036300
          LOAD(CPTEMP3);                                                   45036400
          T(C,Y);                                                          45036500
          T(A,Q);                                                          45036600
          LOAD(CPTEMP2);                                                   45036700
          T(C,D);                                                          45036800
          T(A,B);                                                          45036900
          LOAD(CPTEMP);                                                    45037000
          IBE;                                                             45037100
          CSI;                                                             45037200
     %                                                                     45054000
LABL(CPFINISHED);                                                          45055000
          HEADING("CP FINI","SHED   ",0,0,2);                              45056000
          PRECISION := 1;                                                  45056100
          FUN(CPCLEAR);                                                    45056200
          SEN(CPERROR);                                                    45057000
          GOTO(LOC+4);                                                     45058000
          GOTO(CPUNCHERROR);                                               45059000
          CLA;                                                             45059100
          ST(CPSTATUS);                                                    45062000
          ENS;                                                             45075000
     %                                                                     45076000
LABL(CPUNCHERROR);                                                         45077000
          HEADING("CP ERRO","R      ",0,0,2);                              45077100
          PRECISION := 1;                                                  45077150
          FUN(CPCLEAR);                                                    45077200
          LOAD(LOCKBIT + CPBUFFFULLBIT);                                   45078000
          ST(CPSTATUS);                                                    45079000
          SPOUT(CPCK);                                                     45080000
          ENS;                                                             45081000
     %                                                                     45082000
```

Data Documents/Inc.

```
    END OF PUNCH INTERRUPT;                                                 45083000
%                                                                           45084000
%                                                                           45085000
%       THE PROCEDURE PUNCH-CHECKER IS CALLED BY THE NOTHING-TO-DO          45086000
%       LOOP TO CHECK THE STATUS OF THE CARD PUNCH AND PUNCH OUT ANY        45087000
%       CARD IMAGES IN THE PUNCH QUEUE.                                     45088000
%                                                                           45089000
PROCEDURE PUNCHCODE;                                                        45090000
    BEGIN                                                                   45091000
        REAL SEGMENT;                                                       45092000
%                                                                           45093000
    LABL(PUNCHCHECKER);                                                     45094000
            HEADING("PUNCH C","HECKER ",0,0,2);                             45095000
        DS2(0);                                                             45096000
        SP1;                                                                45097000
        LOAD(CPSTATUS);                                                     45098000
        SODN;                                                               45099000
        GOTOIND(PUNCHCHECKER);                                              45100000
        SL1;                                                                45101000
        SANN;                                                               45102000
        GOTO(CPLOCKED);                                                     45103000
%                                                                           45104000
    LABL(CPREADYNOW);                                                       45105000
            HEADING("CP READ","Y NOW  ",0,0,2);                             45106000
        SP1;                                                                45106100
        LOAD(CPSTATUS);                                                     45106200
        ANDM(CPBUFFFULLBIT);                                                45106300
        SAZ;                                                                45106400
        GOTO(PUNCHRETRY);                                                   45106500
        SP2;                                                                45107000
        LOAD(PUNCHQUEUE);                                                   45108000
        T(C,A);                                                             45108050
        SUB(PUNCHQUEUETAIL);                                                45108100
        SAZN;                                                               45109000
        GOTOIND(PUNCHCHECKER);                                              45110000
        SEN(CPREADY);                                                       45111000
        GOTO(CPNOTREADY);                                                   45112000
        DESC(PUNCHBUFFER);                                                  45115000
        DECR(C,D);                                                          45116000
        LOAD(CURRENTPUNCHTABLE);                                            45117000
        T(C,B);                                                             45118000
%                                                                           45125000
    LABL(PUNCHCONVERT);                                                     45126000
            HEADING("PUNCH C","ONVERT ",0,0,2);                             45127000
        BRM(CPFETCH);                                                       45127100
        SUB(CR);                                                            45127110
        SAZN;                                                               45127120
        GOTO(ORDERPUNCHCYCLE);                                              45127130
        SUB(COMPRESSCHAR - CR);                                             45127140
        SAZN;                                                               45138000
        GOTO(EXPANDPUNCHDATA),                                              45139000
        ADD(COMPRESSCHAR);                                                  45140000
        SUB(32);                                                            45141000
        SANN;                                                               45142000
        LOAD(31);                                                           45143000
        SUB(64);                                                            45144000
        SAN;                                                                45145000
        GOTO(LOC+6);                                                        45146000
        ADD(64);                                                            45147000
        GOTO(LOC+4);                                                        45148000
```

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```
            LOAD(31);                                                    45149000
            T(B,X);                                                      45150000
            SL1;                                                         45150100
            ADDR(C,X);                                                   45151000
            LOADX(0);                                                    45152000
            INCR(D,X);                                                   45153000
            STX(0);                                                      45154000
            INCR(X,D);                                                   45155000
            GOTO(PUNCHCONVERT);                                          45156000
      %                                                                  45157000
      LABL(EXPANDPUNCHDATA);                                             45158000
            HEADING("EXPAND ","PUNCH D","ATA     ",0,3);                 45159000
            BRM(CPFETCH);                                              45161100
            SP1;                                                       45161110
            CIA;                                                       45168000
            ST(PC2);                                                   45169000
            BRM(CPFETCH);                                              45169100
            SP2;                                                       45169105
            INCR(D,X);                                                 45169110
            CLA;                                                       45169115
            STX(0);                                                    45169120
            INCR(X,D);                                                 45169125
            SP1;                                                       45169130
            INCREMENT(PC2);                                            45169135
            SAZ;                                                       45169140
            GOTO(LOC-15);                                              45169145
            GOTO(PUNCHCONVERT);                                        45169150
      %                                                                45169155
      LABL(BLANKOUTPUNCH);                                             45169200
            HEADING("BLANK O","UT PUNC","H       ",0,3);               45169300
            SP2;                                                       45170000
            INCR(D,X);                                                 45171000
            CLA;                                                       45172000
            STX(0);                                                    45173000
            INCR(X,D);                                                 45174000
            SP1;                                                       45175000
            INCREMENT(PC2);                                            45176000
            SAZ;                                                       45177000
            GOTO(BLANKOUTPUNCH);                                       45178000
      %                                                                45180000
      LABL(ORDERPUNCHCYCLE);                                           45181000
            HEADING("ORDER P","UNCH CY","CLE     ",0,3);               45182000
            SP2;                                                       45182050
            INCR(D,C);                                                 45182100
            SUB(DES(ENDOFCPBUFFER));                                   45182200
            SR1;                                                       45182300
            SP1;                                                       45182400
            ST(PC2);                                                   45182500
            SAZ;                                                       45182600
            GOTO(BLANKOUTPUNCH);                                       45182700
            SP2;                                                       45187000
            T(A,C);                                                    45187010
            ST(PUNCHQUEUE);                                            45187020
            SP1;                                                       45187030
      %                                                                45187040
      LABL(PUNCHRETRY);                                                45187050
            HEADING("PUNCH R","ETRY   ",0,0,2);                        45187060
            LOAD(CPBUFFFULLBIT + BUSYBIT);                             45187070
            ST(CPSTATUS);                                              45188000
            FUN(CPCLEAR);                                              45189000
```

Data Documents/Inc.

```
            SEN(CPREADY);                                                    45189100
            GOTO(CPNOTREADY);                                                45189200
            FUN(ENABLECPINTERRUPT);                                          45190000
            FUN(CPINITIATE);                                                 45191000
            GOTOIND(PUNCHCHECKER);                                           45192000
      %                                                                      45193000
      LABL(CPFETCH);                                                         45193100
            HEADING("CPFETCH",0,0,0,1);                                      45193110
            DS2(0);                                                          45193120
            T(A,X);                                                          45193130
            INCR(A,C);                                                       45193140
            T(C,A);                                                          45193150
            SP2;                                                             45193160
            SUB(DES(ENDOFPUNCHBUFFER));                                      45193170
            SAZ;                                                             45193180
            GOTO(LOC+6);                                                     45193190
            DESC(STARTOFPUNCHBUFFER);                                        45193200
            T(C,A);                                                          45193210
            LOADX(0);                                                        45193220
            SR8;                                                             45193230
            GOTOIND(CPFETCH);                                                45193240
      %                                                                      45193250
      LABL(CPNOTREADY);                                                      45194000
            HEADING("CP NOT ","READY  ",0,0,2);                              45195000
            SP1;                                                             45196000
            SPOUT(CPNR);                                                     45197000
            SP1;                                                             45198000
            LOAD(LOCKBIT);                                                   45199000
            ST(CPSTATUS);                                                    45200000
            GOTOIND(PUNCHCHECKER);                                           45201000
      %                                                                      45202000
      LABL(CPLOCKED);                                                        45203000
            HEADING("CP LOCK","ED     ",0,0,2);                              45204000
            SL1;                                                             45205000
            SANN;                                                            45206000
            GOTO(CPLOCKED2);                                                 45207000
            SEN(CPREADY);                                                    45208000
            GOTO(LOC+4);                                                     45209000
            GOTOIND(PUNCHCHECKER);                                           45210000
            LOAD(CPSTATUS);                                                  45210100
            ANDM(255 - LOCKBIT2);                                            45210200
            ADD(LOCKBIT2);                                                   45211000
            ST(CPSTATUS);                                                    45212000
            GOTOIND(PUNCHCHECKER);                                           45213000
      %                                                                      45214000
      LABL(CPLOCKED2);                                                       45215000
            HEADING("CP LOCK","ED2    ",0,0,2);                              45216000
            SEN(CPREADY);                                                    45217000
            GOTOIND(PUNCHCHECKER);                                           45218000
            LOAD(CPSTATUS);                                                  45218100
            ANDM(CPBUFFFULLBIT);                                             45219000
            ST(CPSTATUS);                                                    45220000
            GOTO(CPREADYNOW);                                                45221000
      %                                                                      45222000
      END OF PUNCH CHECKER;                                                  45223000
      %                                                                      45224000
      %                                                                      45225000
      %     THE PROCEDURE CPSTORE DECLARES THE STORAGE LOCATIONS NEEDED      45226000
      %     BY THE CARD PUNCH CODE.                                          45227000
      %                                                                      45228000
```

Data Documents/Inc.

```
PROCEDURE PUNCHSTORAGE;                                                 45229000
    BEGIN                                                               45230000
        REAL SEGMENT;                                                   45231000
1   %                                                                   45232000
2       LABL(CPSTATUS);                                                 45233000
3           HEADING("CP STAT","US      ",0,0,2);                        45234000
4       DS1(0);                                                         45235000
5   %                                                                   45236000
6       LABL(PUNCHCOUNT);                                               45237000
7           HEADING("PUNCH C","OUNT    ",0,0,2);                        45238000
8       DS1(0);                                                         45239000
9   %                                                                   45240000
10      LABL(PC2);                                                      45241000
11          HEADING("PC2     ",0,0,0,1);                                45242000
12      DS1(0);                                                         45243000
13  %                                                                   45244000
14      LABL(CPTEMP);                                                   45245000
15          HEADING("CP TEMP",0,0,0,1);                                 45246000
16      DS4(0);                                                         45247000
17  %                                                                   45247100
18      LABL(CPTEMP2);                                                  45247150
19          DS4(0);                                                     45247200
20  %                                                                   45247250
21      LABL(CPTEMP3);                                                  45247300
22          DS4(0);                                                     45247350
23  %                                                                   45247400
24      LABL(PRECISIONCON);                                             45247450
25          HEADING("PRECISI","ON CON ",0,0,2);                         45247500
26      DS2(4113);                                                      45247550
27      DS2(4627);                                                      45247600
28  %                                                                   45248000
29      LABL(CURRENTPUNCHTABLE);                                        45249000
30          HEADING("CURRENT"," PUNCH ","TABLE  ",0,3);                 45250000
31      DA(BCLPUNCHTABLE);                                              45251000
32  %                                                                   45252000
33      LABL(PUNCHBUFFERS);                                             45253000
34          HEADING("PUNCH B","UFFERS ",0,0,2);                         45254000
35      DS1(0);                                                         45255000
36  %                                                                   45256000
37      END OF PUNCH STORAGE;                                           45257000
38  %                                                                   45258000
39  %                                                                   45259000
40  %       PUNCH TABLES CREATES THE TABLES NEEDED FOR PUNCH OPERATION ON 45260000
41  %       THE DC1000.                                                 45261000
42  %                                                                   45262000
43  PROCEDURE PUNCHTABLES;                                              45263000
44      BEGIN                                                           45264000
45          REAL ARRAY AR[0:63];                                        45265000
46          REAL SEGMENT;                                               45266000
47  %                                                                   45267000
48      LABL(PUNCHBUFFER);                                              45268000
49          HEADING("PUNCH B","UFFER  ",0,0,2);                         45269000
50      FOR SEGMENT := 0 STEP 1 UNTIL 39 DO DS4(0);                     45270000
51      LABL(ENDOFCPBUFFER);                                            45270100
52  %                                                                   45271000
53      IF BCLPUNCHTOG OR NOT BOOLEAN(PUNCHDEFAULT) THEN                45271100
54        BEGIN                                                         45271200
55      LABL(BCLPUNCHTABLE);                                            45272000
56          HEADING("BCL PUN","CH TABL","E       ",0,3);                45273000
57      FILL ATEMP[*] WITH                                              45274000
```

Data Documents/Inc.

```
            4"00000006",4"02060042",4"04420222",                    45274010
            4"08000406",4"08120412",4"04220A00",                    45274020
            4"02420400",4"08420300",4"02000100",                    45274030
            4"00800040",4"00200010",4"00080004",                    45274040
            4"00020001",4"0012040A",4"080A0212",                    45274050
            4"000A0082",4"00220900",4"08800840",                    45274060
            4"08200810",4"08080804",4"08020801",                    45274070
            4"05000480",4"04400420",4"04100408",                    45274080
            4"04040402",4"04010280",4"02400220",                    45274090
            4"02100208",4"02040202",4"02010822",                    45274100
            4"0600020A",4"02820806";                                45274110
      %                                                             45274120
        FOR II := 0 STEP 1 UNTIL 31 DO DS4(ATEMP[II]);              45274130
          END;                                                      45274140
      %                                                             45274150
        IF EBCDICPUNCHTOG THEN                                      45274155
          BEGIN                                                     45274160
        LABL(EBCDICPUNCHTABLE);                                     45274162
              HEADING("EBCDIC ","PUNCH T","ABLE    ",0,3);          45274164
        FILL ATEMP[*] WITH                                          45274170
            4"00000302",4"00060042",4"04420222",                    45274180
            4"08000902",4"08120412",4"0422080A",                    45274190
            4"02420400",4"08420300",4"02000100",                    45274200
            4"00800040",4"00200010",4"00080004",                    45274210
            4"00020001",4"0082040A",4"0822000A",                    45274220
            4"020A0206",4"00220900",4"08800840",                    45274230
            4"08200810",4"08080804",4"08020801",                    45274240
            4"05000480",4"04400420",4"04100408",                    45274250
            4"04040402",4"04010280",4"02400220",                    45274260
            4"02100208",4"02040202",4"02010882",                    45274270
            4"06000482",4"05020806",4"00000000";                    45274280
      %                                                             45274290
        FOR II := 0 STEP 1 UNTIL 31 DO DS4(ATEMP[II]);              45274300
      %                                                             45274310
          END;                                                      45274320
      %                                                             45274330
      %                                                             45274340
        IF BCLPUNCHTOG AND NOT (BCLREADERTOG OR EBCDICREADERTOG) THEN 45274350
          BEGIN                                                     45274360
        LABL(BCLCRD);                                               45274370
            DS4(4"42434C0D");                                       45274380
          END;                                                      45274390
      %                                                             45274400
        IF EBCDICPUNCHTOG AND NOT (BCLREADERTOG OR EBCDICREADERTOG) THEN 45274410
          BEGIN                                                     45274420
        LABL(EBCCRD);                                               45274430
            DS4(4"45424344");                                       45274440
            DS3(4"49430D");                                         45274450
          END;                                                      45274460
      %                                                             45274470
      %                                                             45274480
      %                                                             45274490
      %                                                             45284000
      %                                                             45285000
        END OF PUNCH TABLES;                                        45286000
      %                                                             45287000
      %                                                             70000000
      %       THE NEXT PROCEDURE CONTAINS THE CODE FOR HANDLING THE MODEM 70001000
      %       INTERRUPTS.                                           70002000
      %                                                             70003000
```

Data Documents/Inc.

```
PROCEDURE MODEMINTERRUPT;                                          70004000
%                                                                  70005000
    BEGIN                                                          70006000
%                                                                  70007000
        REAL SEGMENT;                                              70008000
%                                                                  70009000
    LABL(INTERLOCKINTERRUPT);                                      70010000
            HEADING("INTERLO","CK INTE","RRUPT  ",0,3);            70011000
%                                                                  70012000
        SP1;                                                       70013000
        LOAD(MODEMFLAGS);                                          70014000
        ANDM(255 - INTERLOCKBIT);                                  70015000
        SEN(INTERLOCKON);                                          70017000
        GOTO(LOC+4);                                               70018000
        ADD(INTERLOCKBIT);                                         70019000
        ST(MODEMFLAGS);                                            70022000
        SEN(INTERLOCKON);                                          70023000
        GOTO(LOSSOFINTERLOCK);                                     70024000
%                                                                  70025000
        LOAD(DTRBIT + INTERLOCKBIT + CONNECTEDBIT);                70026000
        ST(MODEMFLAGS);                                            70027000
        SP2;                                                       70028000
        DESC(IGNORERING);                                          70029000
        ST(RINGLABEL);                                             70030000
        SPOUT(CONNECTIONMADE);                                     70031000
        ENS;                                                       70032000
%                                                                  70033000
    LABL(CARRIERINTERRUPT);                                        70034000
            HEADING("CARRIER"," INTERR","UPT    ",0,3);            70035000
%                                                                  70036000
        SP1;                                                       70037000
        LOAD(MODEMFLAGS);                                          70038000
        ANDM(255 - CARRIERBIT);                                    70039000
        SEN(CARRIER);                                              70041000
        GOTO(LOC+4);                                               70042000
        ADD(CARRIERBIT);                                           70043000
        ST(MODEMFLAGS);                                            70046000
        GOTOIND(CARRIERLABEL);                                     70047000
%                                                                  70048000
    LABL(RINGINTERRUPT);                                           70049000
            HEADING("RING IN","TERRUPT",0,0,2);                    70050000
%                                                                  70051000
        SP1;                                                       70052000
        LOAD(MODEMFLAGS);                                          70053000
        ANDM(255 - RINGBIT);                                       70054000
        ADD(RINGBIT);                                              70055000
        ST(MODEMFLAGS);                                            70056000
        GOTOIND(RINGLABEL);                                        70057000
%                                                                  70058000
%                                                                  70059000
    LABL(CLEARTOSENDINTERRUPT);                                    70060000
            HEADING("CLEAR T","O SEND ","INTERRU","PT     ",4);    70061000
%                                                                  70062000
        SP1;                                                       70063000
        LOAD(MODEMFLAGS);                                          70064000
        ANDM(255 - CLEARTOSENDBIT),                                70065000
        SEN(CLEARTOSEND);                                          70067000
        GOTO(LOC+4);                                               70068000
        ADD(CLEARTOSENDBIT);                                       70069000
        ST(MODEMFLAGS);                                            70072000
```

Data Documents/Inc.

```
            GOTOIND(CLEARTOSENDLABEL);                                  70073000
%                                                                       70074000
    END OF MODEM INTERRUPT CODE;                                        70075000
%                                                                       70076000
%                                                                       70077000
%       MODEM RECEIVE CODE CONTAINS THE PROGRAMMING NEEDED TO RECEIVE,  70078000
%       INTURPRET, AND STORE RECEIVED CHARACTERS.                       70079000
%                                                                       70080000
PROCEDURE MODEMRECEIVE;                                                 70081000
    BEGIN                                                               70082000
%                                                                       70083000
        REAL SEGMENT;                                                   70084000
    BEGIN REAL SEGMENT;                                                 70085000
%                                                                       70086000
    LABL(INITIATERECEIVE);                                              70087000
            HEADING("INITIAT","E RECEI","VE     ",0,3);                 70088000
%                                                                       70089000
        DS2(0);                                                         70090000
        SP2;                                                            70091000
        FUN(GOTOBITMODE);                                               70092000
        DESC(SYNCHRONIZERECEIVE);                                       70093000
        ST(RECEIVELABEL);                                               70094000
        LOAD(NEXTACTIVITY);                                             70095000
        ST(MODEMSTATUS);                                                70096000
        ADD(DES(ACTIONLABEL));                                          70097000
        T(C,X);                                                         70098000
        LOADX(0);                                                       70099000
        ST(ACTIONTYPE);                                                 70100000
        CLA;                                                            70101000
        ST(NEXTACTIVITY);                                               70102000
        ST(LASTACTIVITY);                                               70102100
        GOTOIND(INITIATERECEIVE);                                       70103000
%                                                                       70104000
    LABL(SYNCHRONIZERECEIVE);                                           70105000
            HEADING("SYNCHRO","NIZE RE","CEIVE  ",0,3);                 70106000
%                                                                       70107000
        RSLEEP(0);                                                      70108000
        SP1;                                                            70109000
        BTI(MODEMREAD);                                                 70110000
        SUB(SYNCP);                                                     70111000
        SAZ;                                                            70112000
        ENS;                                                            70113000
%                                                                       70114000
    LABL(SETUPFORSYNC);                                                 70115000
            HEADING("SET UP ","FOR SYN","C      ",0,3);                 70116000
%                                                                       70117000
        LOAD(-8);                                                       70118000
        ST(RCOUNT);                                                     70119000
        RSLEEP(0);                                                      70120000
        SP1;                                                            70121000
        INCREMENT(RCOUNT);                                              70122000
        BTI(MODEMREAD);                                                 70123000
        SUB(SYNCP);                                                     70124000
        SAZ;                                                            70125000
        ENS;                                                            70126000
%                                                                       70127000
        LOAD(RCOUNT);                                                   70128000
        SAZ;                                                            70129000
        GOTO(SETUPFORSYNC);                                             70130000
        FUN(GOTOBYTEMODE);                                              70131000
```

Data Documents/Inc.

```
            SP2;                                                    70132000
            LOAD(ACTIONTYPE);                                       70133000
            ST(RECEIVELABEL);                                       70134000
            ENS;                                                    70135000
%                                                                   70136000
      LABL(LOOKFORDATA);                                            70137000
            HEADING("LOOK FO","R DATA ",0,0,2);                     70138000
            SP1;                                                    70139000
            BTI(MODEMRLAD);                                         70140000
            SUB(SYNCP);                                             70141000
            SAZ;                                                    70142000
            ENS;                                                    70143000
            BRM(INITIATERECEIVE);                                   70144000
            GOTO(SETUPFORSYNC);                                     70145000
%                                                                   70146000
      LABL(LOOKFORENQ);                                             70147000
            HEADING("LOOK FO","R ENQ  ",0,0,2);                     70148000
%                                                                   70149000
            RECEIVE;                                                70150000
            PRECISION := 1;                                         70151000
            SUB(ENQ);                                               70152000
            SAZ;                                                    70153000
            RSLEEP(IGNOREDATAINTERRUPTS);                           70161000
%                                                                   70162000
      LABL(FOUNDANENQ);                                             70162100
            HEADING("FOUND A","N ENQ  ",0,0,2);                     70162200
            SP2;                                                    70165000
            NEXT(TRANSMITACK);                                      70166000
            RSLEEP(IGNOREDATAINTERRUPTS);                           70167000
%                                                                   70168000
      LABL(LOOKFORETX);                                             70169000
            HEADING("LOOK FO","R ETX  ",0,0,2);                     70170000
%                                                                   70171000
            RECEIVE;                                                70172000
            PRECISION := 1;                                         70173000
            SUB(EOT);                                               70174000
            SAZN;                                                   70175000
            GOTO(FOUNDANEOT);                                       70176000
            IAR;                                                    70177000
            SAZ;                                                    70178000
            ENS;                                                    70179000
            RSLEEP(IGNOREDATAINTERRUPTS);                           70180000
%                                                                   70181000
      LABL(INCOMMING);                                              70182000
            HEADING("INCOMMI","NG     ",0,0,2);                     70183000
%                                                                   70184000
            SP2;                                                    70185000
            LOAD(MODEMPOINTER);                                     70186000
            SAZ;                                                    70187000
            STIND(UNITUPDATE);                                      70188000
            CLA;                                                    70189000
            ST(MODEMPOINTER);                                       70189100
            SP1;                                                    70190000
            INCREMENT(TRANNO);                                      70191000
            SUB(58);                                                70192000
            SAZ;                                                    70193000
            GOTO(LOC+6);                                            70194000
            LOAD(48);                                               70195000
            ST(TRANNO);                                             70196000
            GOTO(LOOKFORHEADER);                                    70197000
```

Data Documents/Inc.

```
%                                                                    70198000
    LABL(LASTTRANOK);                                                70199000
          HEADING("LAST TR","AN OK  ",0,0,2);                        70200000
%                                                                    70201000
        SP2;                                                         70202000
        LOAD(MODEMPOINTER);                                          70207100
        SAZ;                                                         70207105
        STIND(UNITUPDATE);                                           70207110
        CLA;                                                         70207120
        ST(MODEMPOINTER);                                            70207130
        SP1;                                                         70208000
        INCREMENT(TRANNO);                                           70209000
        SUB(58);                                                     70210000
        SAZ;                                                         70211000
        GOTO(LOC+6);                                                 70212000
        LOAD(48);                                                    70213000
        ST(TRANNO);                                                  70214000
        BRM(FINDAMESSAGE);                                           70215000
        PRECISION := 2;                                              70216000
        SAZN;                                                        70217000
        GOTO(CLOSETHELINE);                                          70218000
        NEXT(TRANSMITMSG);                                           70220000
        RSLEEP(IGNOREDATAINTERRUPTS);                                70221000
%                                                                    70222000
    LABL(CLOSETHELINE);                                              70223000
          HEADING("CLOSE T","HE LINE",0,0,2);                        70224000
        NEXT(TRANSMITEOT);                                           70225000
        RSLEEP(IGNOREDATAINTERRUPTS);                                70226000
%                                                                    70227000
    LABL(LOOKFORACK);                                                70228000
          HEADING("LOOK FO","R ACK  ",0,0,2);                        70229000
        RECEIVE;                                                     70230000
        PRECISION := 1;                                              70231000
        SUB(NAK);                                                    70232000
        SAZN;                                                        70233000
        GOTO(FOUNDANAK);                                             70234000
%                                                                    70235000
        ADD(NAK - ACK);                                              70236000
        SAZN;                                                        70237000
        GOTO(FOUNDTHEACK);                                           70238000
%                                                                    70239000
        IAR;                                                         70240000
        SAZ;                                                         70241000
        GOTO(LOC+7);                                                 70242000
        NEXT(TRANSMITACK);                                           70242100
        RSLEEP(IGNOREDATAINTERRUPTS);                                70246000
%                                                                    70247000
    LABL(FOUNDANEOT);                                                70248000
          HEADING("FOUND A","N EOT  ",0,0,2);                        70249000
        SP1;                                                         70250000
        LOAD(MODEMFLAGS);                                            70251000
        ANDM(63);                                                    70252000
        ST(MODEMFLAGS);                                              70253000
        SP2;                                                         70254000
        CLA;                                                         70255000
        ST(LASTACTIVITY);                                            70256000
        ST(MODEMSTATUS);                                             70257000
        ST(NEXTACTIVITY);                                            70258000
        RSLEEP(IGNOREDATAINTERRUPTS);                                70261000
%                                                                    70262000
```

Data Documents/Inc.

```
        LABL(FOUNDTHEACK);                                              70263000
                HEADING("FOUND T","HE ACK ",0,0,2);                     70264000
    %                                                                   70265000
1           SP2;                                                        70266000
2           NEXT(TRANSMITMSG);                                          70267000
3           RSLEEP(IGNOREDATAINTERRUPTS);                               70268000
4   %                                                                   70269000
5       LABL(FOUNDANAK);                                                70270000
6               HEADING("FOUND A"," NAK   ",0,0,2);                     70271000
7   %                                                                   70272000
8           SP2;                                                        70273000
9           NEXT(TRANSMITEOT);                                          70274000
10          RSLEEP(IGNOREDATAINTERRUPTS);                               70275000
11  %                                                                   70276000
12      LABL(DECYPHERRESPONSE);                                         70277000
13              HEADING("DECYPHE","R RESPO","NSE    ",0,3);             70278000
14          RECEIVE;                                                    70279000
15          PRECISION := 1;                                             70280000
16          SUB(NAK);                                                   70281000
17          SAZN;                                                       70282000
18          GOTO(RETRY);                                                70283000
19          ADD(NAK - ACK);                                             70284000
20          SAZN;                                                       70285000
21          GOTO(LASTTRANOK);                                           70286000
22  %                                                                   70287000
23          IAR;                                                        70288000
24          SAZN;                                                       70289000
25          GOTO(FOUNDANENQ);                                           70290000
26  %                                                                   70291000
27          IAR;                                                        70292000
28          SAZN;                                                       70293000
29          GOTO(FOUNDANEOT);                                           70294000
30  %                                                                   70295000
31          ADD(EOT - SOH);                                             70296000
32          SAZN;                                                       70297000
33          GOTO(INCOMMING);                                            70298000
34  %                                                                   70299000
35          SP2;                                                        70300000
36          CLA;                                                        70301000
37          ST(MODEMSTATUS);                                            70302000
38          ST(NEXTACTIVITY);                                           70303000
39          RSLEEP(IGNOREDATAINTERRUPTS);                               70304000
40  %                                                                   70305000
41      LABL(RETRY);                                                    70306000
42              HEADING("RETRY  ",0,0,0,1);                             70307000
43          SP2;                                                        70308000
44          NEXT(TRANSMITMSG);                                          70311000
45          BRM(FINDAMESSAGE);                                          70311100
46          RSLEEP(IGNOREDATAINTERRUPTS);                               70312000
47  %                                                                   70313000
48      LABL(LOOKFORHEADER);                                            70326000
49              HEADING("LOOK FO","R HEADE","R      ",0,3);             70327000
50  %                                                                   70328000
51          RSLEEP(0);                                                  70329000
52          SP1;                                                        70330000
53          INITIALIZEBCC;                                              70331000
54          ST(MC3);                                                    70332000
55          RECEIVE;                                                    70333000
56          SP2;                                                        70334000
57          ANDM(15);                                                   70335000
```

Data Documents/Inc.

```
                ADD(DES(POWERSOF10));                                   70336000
                T(C,X);                                                 70337000
                LOADX(0);                                               70338000
                SR8;                                                    70339000
                ST(UNIT);                                               70340000
                RSLEEP(0);                                              70343000
                RECEIVE;                                                70344000
                SP2;                                                    70345000
                ANDM(15);                                               70346000
                ADD(UNIT);                                              70347000
                ST(UNITNO);                                             70347100
                SL1;                                                    70349000
                ADD(DES(OUTPUTUNITTABLE));                              70350000
                T(C,X);                                                 70351000
                LOADX(0);                                               70352000
                ST(UNIT);                                               70353000
                SAZN;                                                   70354000
                GOTO(HL);                                               70355000
                BRM(SETUPUDINFO);                                       70356000
                RSLEEP(0);                                              70357000
        %                                                               70358000
                RECEIVE;                                                70359000
                ST(MC3);                                                70359100
                SUB(RECNO);                                             70360000
                SAZ;                                                    70361000
                GOTO(BADRECNO);                                         70362000
                ST(MC3);                                                70362100
        %                                                               70363000
            LABL(MODEMLAB1);                                            70364000
                  HEADING("MODEM L","AB1     ",0,0,2);                  70365000
        %                                                               70366000
                RSLEEP(0);                                              70367000
                RECEIVE;                                                70368000
                PRECISION := 1;                                         70369000
                SUB(STEXT);                                             70370000
                SAZ;                                                    70371000
                GOTO(FORMATERROR);                                      70372000
                LOAD(UDLENGTH);                                         70372100
                ST(MCOUNT);                                             70372110
                LOAD(UBTOGS);                                           70372120
                ANDM(ENDPOINTBIT);                                      70372130
                SAZN;                                                   70372140
                GOTO(LOC+10);                                           70372150
                SP2;                                                    70372155
                LOAD(MODEMPOINTER);                                     70372160
                ST(FIRSTPOINTER);                                       70372170
                BRM(MODEMSTORE);                                        70372180
                CLA;                                                    70372190
                ST(STOREDCOUNT);                                        70372200
        %                                                               70373000
            LABL(STOREAMESSAGE);                                        70374000
                  HEADING("STORE A"," MESSAG","E       ",0,3);          70375000
        %                                                               70376000
                RSLEEP(0);                                              70377000
                RECEIVE;                                                70378000
                PRECISION := 1;                                         70379000
                ST(MC2);                                                70360000
                SUB(ETX);                                               70381000
                SAZN;                                                   70382000
                GOTO(EOM);                                              70383000
```

Data Documents/Inc.

```
            SUB(EOT - ETX);                                                 70384000
            SAZN;                                                           70385000
            GOTO(FOUNDANEOT);                                               70386000
            SUB(CR - EOT);                                                  70387000
            SAZN;                                                           70388000
            GOTO(ENDOFBLOCK);                                               70389000
            SUB(ESC - CR);                                                  70390000
            SAZN;                                                           70391000
            GOTO(BLANKSUPRESSION);                                          70392000
            SP1;                                                            70397000
            LOAD(MC2);                                                      70397100
            BRM(MODEMSTORE);                                                70397110
            SP1;                                                            70397120
            INCREMENT(MCOUNT);                                              70398000
            SAZN;                                                           70401000
            GOTO(LOOKFORENDOFBLOCK);                                        70402000
            GOTO(STOREAMESSAGE);                                            70405000
        %                                                                   70406000
      LABL(NOSPACEFORMODEM);                                                70407000
                HEADING("NO SPAC","E FOR M","ODEM    ",0,3);                70408000
            SP1;                                                            70409000
            INCREMENT(RECNO);                                               70410000
            SUB(58);                                                        70411000
            SAZ;                                                            70412000
            GOTO(LOC+6);                                                    70413000
            LOAD(48);                                                       70414000
            ST(RECNO);                                                      70415000
            SP2;                                                            70416000
            LOAD(UNITNO);                                                   70419000
            BRM(MAKENOTREADY);                                              70421000
        %                                                                   70422000
      LABL(IGNOREMESSAGE);                                                  70422100
                HEADING("IGNORE ","MESSAGE",0,0,2);                         70422200
            SP2;                                                            70422300
            NEXT(ACKNOWLEDGE);                                              70423000
            RSLEEP(IGNOREDATAINTERRUPTS);                                   70424000
        %                                                                   70425000
      LABL(EOM);                                                            70426000
                HEADING("EOM     ",0,0,0,1);                                70427000
            BRM(PLACEENDOFBUFFERPOSITION);                                  70432000
            SP1;                                                            70432010
            LOAD(CR);                                                       70432020
            BRM(MODEMSTORE);                                                70432030
            RSLEEP(CHECKBCC);                                               70441000
        %                                                                   70442000
      LABL(PLACEENDOFBUFFERPOSITION);                                       70443000
                HEADING("PLACE E","ND OF B","UFFER P","OSITION",4);         70444000
            DS2(0);                                                         70445000
            T(C,A);                                                         70446000
            SP1;                                                            70447000
            LOAD(UDTOGS);                                                   70448000
            ANDM(FILLOUTBIT);                                               70449000
            SAZN;                                                           70450000
            GOTO(BYPASSSUPRESS);                                            70451000
            LOAD(MCOUNT);                                                   70452000
            SAZN;                                                           70453000
            GOTO(BYPASSSUPRESS);                                            70454000
            CIA;                                                            70454100
            ST(MC2);                                                        70455000
            BRM(SUPRESSIT);                                                 70456000
```

Data Documents/Inc.

```
%                                                                    70469000
    LABL(BYPASSSUPRESS);                                             70470000
         HEADING("BYPASS ","SUPRESS",0,0,2);                         70471000
         SP1;                                                        70472000
         LOAD(UDTOGS);                                               70472010
         ANDM(ENDPOINTBIT);                                          70472020
         SAZN;                                                       70472030
         GOTOIND(PLACEENDOFBUFFERPOSITION);                          70473000
         LOAD(STOREDCOUNT);                                          70473100
         STIND(FIRSTPOINTER);                                        70473110
         GOTOIND(PLACEENDOFBUFFERPOSITION);                          70473120
%                                                                    70474000
    LABL(ENDOFBLOCK);                                                70475000
         HEADING("END OF ","BLOCK  ",0,0,2);                         70476000
%                                                                    70477000
         BRM(PLACEENDOFBUFFERPOSITION);                              70482000
         LOAD(UDTOGS);                                               70482010
         ANDM(8);                                                    70482020
         SAZ;                                                        70482030
         GOTO(LOC+7);                                                70482040
         LOAD(CR);                                                   70482050
         BRM(MODEMSTORE);                                            70482060
         SP2;                                                        70482070
         LOAD(MODEMPOINTER);                                         70483000
         ST(FIRSTPOINTER);                                           70484000
         SP1;                                                        70484010
         LOAD(UDLENGTH);                                             70484020
         ST(MCOUNT);                                                 70484030
         LOAD(UDTOGS);                                               70484032
         ANDM(ENDPOINTBIT);                                          70484034
         SAZN;                                                       70484036
         GOTO(STOREAMESSAGE);                                        70484038
         BRM(MODEMSTORE);                                            70484040
         CLA;                                                        70484050
         ST(STOREDCOUNT);                                            70484060
         GOTO(STOREAMESSAGE);                                        70540000
%                                                                    70573000
    END OF SEGMENT;                                                  70574000
    LABL(BLANKSUPRESSION);                                           70575000
         HEADING("BLANK S","UPRESSI","ON     ",0,3);                 70576000
%                                                                    70577000
         RSLEEP(0);                                                  70578000
         RECEIVE;                                                    70579000
         SP2;                                                        70580000
         ANDM(15);                                                   70581000
         ADD(DES(POWERSOF10));                                       70582000
         T(C,X);                                                     70583000
         SP1;                                                        70584000
         LOADX(0);                                                   70585000
         ST(MC2);                                                    70586000
         RSLEEP(0);                                                  70587000
%                                                                    70588000
         RECEIVE;                                                    70589000
         PRECISION := 1;                                             70590000
         ANDM(15);                                                   70591000
         ADD(MC2);                                                   70592000
         SAZN;                                                       70593000
         LOAD(100);                                                  70594000
         ST(MC2);                                                    70595000
         ADD(MCOUNT);                                                70596000
```

Data Documents/Inc.

```
                ST(MCOUNT);                                                    70596100
                SAN;                                                           70597000
                GOTO(TOOMANYBLANKS);                                           70598000
                BRM(SUPRESSIT);                                                70598100
                GOTO(STOREAMESSAGE);                                           70598110
        %                                                                      70599000
            LABL(SUPRESSIT);                                                   70600000
                    HEADING("SUPRESS","  IT     ",0,0,2);                     70601000
        %                                                                      70602000
                DS2(0);                                                        70603000
                LOAD(UDTOGS);                                                  70610000
                ANDM(REVERSEBIT);                                              70611000
                SAZ;                                                           70611100
                GOTO(REVERSESUPRESS);                                          70612000
                LOAD(COMPRESSCHAR);                                            70613000
                BRM(MODEMSTORE);                                               70614000
                LOAD(MC2);                                                     70615000
                BRM(MODEMSTORE);                                               70616000
                LOAD(BLANK);                                                   70617000
                BRM(MODEMSTORE);                                               70618000
                GOTOIND(SUPRESSIT);                                            70619000
        %                                                                      70620000
            LABL(REVERSESUPRESS);                                              70621000
                LOAD(BLANK);                                                   70624000
                BRM(MODEMSTORE);                                               70625000
                LOAD(MC2);                                                     70626000
                BRM(MODEMSTORE);                                               70627000
                LOAD(COMPRESSCHAR);                                            70628000
                BRM(MODEMSTORE);                                               70629000
                GOTOIND(SUPRESSIT);                                            70630000
        %                                                                      70631000
            LABL(TOOMANYBLANKS);                                               70632000
                LOAD(MCOUNT);                                                  70635000
                CIA;                                                           70636000
                ST(MC2);                                                       70637000
                CLA;                                                           70638000
                ST(MCOUNT);                                                    70640000
                BRM(SUPRESSIT);                                                70640100
                GOTO(LOOKFORENDOFBLOCK);                                       70641000
        %                                                                      70642000
            LABL(CHECKBCC);                                                    70643000
                    HEADING("CHECK B","CC     ",0,0,2);                        70644000
        %                                                                      70645000
                SP1;                                                           70646000
                BTI(MODEMREAD);                                                70647000
                ANDM(127);                                                     70648000
                SUB(BCC);                                                      70649000
                SAZN;                                                          70650000
                GOTO(LASTRECOK);                                               70651000
                NEXT(TRANSMITNAK);                                             70652000
                RSLEEP(IGNOREDATAINTERRUPTS);                                  70657000
        %                                                                      70658000
            LABL(LASTRECOK);                                                   70659000
                    HEADING("LAST RE","C OK   ",0,0,2);                        70660000
                SP1;                                                           70661000
                INCREMENT(RECNO);                                              70662000
                SUB(58);                                                       70663000
                SAZ;                                                           70664000
                GOTO(LOC+6);                                                   70665000
                LOAD(48);                                                      70666000
```

Data Documents/Inc.

```
                ST(RECNO);                                              70667000
                SP2;                                                    70668000
                LOAD(MODEMPOINTER);                                     70669000
                STIND(UNITUPDATE);                                      70670000
                CLA;                                                    70670100
                ST(MODEMPOINTER);                                       70670200
                NEXT(ACKNOWLEDGE);                                      70729000
                RSLEEP(IGNOREDATAINTERRUPTS);                           70730000
        %                                                               70731000
        LABL(BADRECNO);                                                 70732000
                HEADING("BAD REC","ORD NO    ",0,0,2);                  70733000
        %                                                               70734000
                PRECISION := 1;                                         70735000
                ADD(RECNO);                                             70736000
                IAM;                                                    70736100
                SUB(58);                                                70736200
                SAZN;                                                   70736300
                LOAD(-10);                                              70736400
                ADD(58);                                                70736500
                SUB(RECNO);                                             70736600
                SAZN;                                                   70736700
                GOTO(IGNOREMESSAGE);                                    70736800
                LOAD(MC3);                                              70736910
                ST(RECNO);                                              70737000
                CLA;                                                    70737100
                ST(MC3);                                                70737200
                SPOUT(MISSINGMESSAGE);                                  70738000
                GOTO(MODEMLAB1);                                        70739000
        %                                                               70740000
        LABL(FORMATERROR);                                              70741000
                HEADING("FORMAT ","ERROR   ",0,0,2);                    70742000
        %                                                               70743000
                PRECISION := 1;                                         70744000
                NEXT(TRANSMITNAK);                                      70745000
                RSLEEP(IGNOREDATAINTERRUPTS);                           70757000
        %                                                               70758000
        LABL(LOOKFORENDOFBLOCK);                                        70773000
                HEADING("LOOK FO","R END O","F BLOCK",0,3);             70774000
        %                                                               70775000
                PRECISION := 1;                                         70776000
                RSLEEP(0);                                              70777000
                RECEIVE;                                                70778000
                SUB(ETX);                                               70779000
                SAZN;                                                   70780000
                GOTO(EOM);                                              70781000
                SUB(EOT - ETX);                                         70782000
                SAZN;                                                   70783000
                GOTO(FOUNDANEOT);                                       70784000
                SUB(CR - EOT);                                          70785000
                SAZN;                                                   70786000
                GOTO(ENDOFBLOCK);                                       70787000
                ENS;                                                    70788000
        %                                                               70789000
        LABL(MODEMSTORE);                                               70789100
                HEADING("MODEM S","TORE    ",0,0,2);                    70789110
                DS2(0);                                                 70789120
                SP1;                                                    70789125
                STIND(MODEMPOINTER);                                    70789130
                INCREMENT(STOREDCOUNT);                                 70789140
                SP2;                                                    70789150
```

Data Documents/Inc.

```
                INCREMENT(MODEMPOINTER);                                    70789160
                SUB(UNITBUFFEREND);                                         70789170
                SANN;                                                       70789180
                GOTO(LOC+6);                                                70789190
                LOAD(UNITBUFFERSTART);                                      70789200
                ST(MODEMPOINTER);                                           70789210
                LOAD(MODEMPOINTER);                                         70789220
                SUBIND(UNITLIMIT);                                          70789230
                SAZN;                                                       70789240
                GOTO(NOSPACEFORMODEM);                                      70789250
                SP1;                                                        70789260
                GOTOIND(MODEMSTORE);                                        70789270
            LABL(GETACHAR);                                                 70790000
                    HEADING("GET A C","HAR     ",0,0,2);                    70791000
        %                                                                   70792000
                DS2(0);                                                     70793000
                SP1;                                                        70794000
                SEN(ODDPARITY);                                             70795000
                GOTO(FORMATERROR);                                          70796000
                BTI(MODEMREAD);                                             70797000
                ANDM(127);                                                  70798000
                T(C,A);                                                     70799000
                SUB(SYNC);                                                  70800000
                SAZN;                                                       70801000
                ENS;                                                        70802000
                LOAD(BCC);                                                  70803000
                EOR(A,C);                                                   70804000
                ST(BCC);                                                    70805000
                T(A,C);                                                     70806000
                SUB(CONTROLAT);                                             70807000
                SAZN;                                                       70808000
                GOTO(LOC+6);                                                70809000
                T(A,C);                                                     70810000
                GOTOIND(GETACHAR);                                          70811000
                LOAD(LEFTARROW);                                            70812000
                GOTOIND(GETACHAR);                                          70813000
        %                                                                   70814000
        %                                                                   70815000
            END OF MODEM RECEIVE CODE;                                      70816000
        %                                                                   70817000
        %                                                                   70818000
        %       THE NEXT PROCEDURE CONTAINS THE MODEM CODE TO TRANSMIT      70819000
        %       INFORMATION DOWN THE LINE TO THE SYSTEM.                    70820000
        %                                                                   70821000
        PROCEDURE MODEMTRANSMIT;                                            70822000
            BEGIN                                                           70823000
        %                                                                   70824000
                REAL SGMENT;                                                70825000
        %                                                                   70826000
            LABL(INITIATETRANSMIT);                                         70827000
                    HEADING("INITIAT","E TRANS","MIT     ",0,3);            70828000
        %                                                                   70829000
                DS2(0);                                                     70830000
                FUN(TURNONRS);                                              70831000
                SP1;                                                        70832000
                LOAD(16);                                                   70833000
                MIN;                                                        70834000
                SP2;                                                        70835000
                DESC(OKTOSEND);                                             70836000
                ST(CLEARTOSENDLABEL);                                       70837000
```

Data Documents/Inc.

```
                DESC(XIT);                                                      70838000
                ST(CARRIERLABEL);                                               70839000
                DESC(IGNORECATAINTERRUPTS);                                     70840000
                ST(RECEIVELABEL);                                               70842000
                FUN(GOTOBYTEMODE);                                              70843000
                GOTOIND(INITIATETRANSMIT);                                      70844000
        %                                                                       70845000
            LABL(OKTOSEND);                                                     70846000
                    HEADING("OK TO S","END    ",0,0,2);                         70847000
        %                                                                       70848000
                SP2;                                                            70849000
                SEN(CLEARTOSEND);                                               70850000
                ENS;                                                            70851000
                DESC(NORMALCLEARTOSEND);                                        70852000
                ST(CLEARTOSENDLABEL);                                           70853000
                BRM(SYNCHRONIZETRANSMISSION);                                   70854000
                ENS;                                                            70855000
        %                                                                       70856000
            LABL(SYNCHRONIZETRANSMISSION);                                      70857000
                    HEADING("SYNCHRO","NIZE TR","ANSMISS","ION    ",4);         70858000
        %                                                                       70859000
                DS2(0);                                                         70860000
                SP2;                                                            70861000
                LOAD(NEXTACTIVITY);                                             70862000
                ST(MODEMSTATUS);                                                70863000
                ADD(DES(ACTIONLABEL));                                          70864000
                T(C,X);                                                         70865000
                LOADX(0);                                                       70866000
                ST(ACTIONTYPE);                                                 70867000
                CLA;                                                            70868000
                ST(NEXTACTIVITY);                                               70869000
                DESC(TRANSMITSYNC);                                             70870000
                ST(TRANSMITLABEL);                                              70871000
                SP1;                                                            70872000
                FUN(GOTOBYTEMODE);                                              70873000
                CLA;                                                            70874000
                IAR;                                                            70875000
                MIN;                                                            70876000
                TRANSMIT(SYNCP);                                                70877000
                LOAD(-3);                                                       70878000
                ST(MC1);                                                        70879000
                GOTOIND(SYNCHRONIZETRANSMISSION);                               70880000
        %                                                                       70881000
            LABL(TRANSMITSYNC);                                                 70882000
                    HEADING("TRANSMI","T SYNCS",0,0,2);                         70883000
        %                                                                       70884000
                SP1;                                                            70885000
                TRANSMIT(SYNCP);                                                70886000
                LOAD(MC1);                                                      70887000
                IAR;                                                            70888000
                ST(MC1);                                                        70889000
                SAZ;                                                            70890000
                ENS;                                                            70891000
                SP2;                                                            70892000
                LOAD(MODEMSTATUS);                                              70893000
                SUB(ACKNOWLEDGE);                                               70894000
                SAZN;                                                           70895000
                GOTO(ACKNOWLEDGELASTREC);                                       70896000
                LOAD(ACTIONTYPE);                                               70897000
                ST(TRANSMITLABEL);                                              70898000
```

Data Documents/Inc.

```
        ENS;                                                                    70899000
%                                                                               70900000
    LABL(SENDACK);                                                              70901000
        HEADING("SEND AC","K       ",0,0,2);                                    70902000
%                                                                               70903000
        SP1;                                                                    70904000
        TRANSMIT(ACKP);                                                         70905000
        NEXT(RECEIVERESPONSE);                                                  70906000
        GOTO(FINISHTRANSMIT);                                                   70907000
%                                                                               70908000
    LABL(SENDANAK);                                                             70909000
        HEADING("SEND NA","K       ",0,0,2);                                    70910000
        SP1;                                                                    70911000
        TRANSMIT(NAKP);                                                         70912000
        SP2;                                                                    70913000
        LOAD(LASTACTIVITY);                                                     70914000
        ST(NEXTACTIVITY);                                                       70915000
        GOTO(FINISHTRANSMIT);                                                   70916000
%                                                                               70917000
    LABL(ACKNOWLEDGELASTREC);                                                   70918000
        HEADING("ACKNOWL","EDGE LA","ST REC ",0,3);                             70919000
        PRECISION := 2;                                                         70924000
        BRM(FINDAMESSAGE);                                                      70927000
        SAZN;                                                                   70928000
        GOTO(NOLINEACTIVITY);                                                   70929000
        NEXT(RECEIVERESPONSE);                                                  70931000
        LOAD(TRANSMITMSG);                                                      70932000
        ST(MODEMSTATUS);                                                        70933000
        TSLEEP(SENDAHEADER);                                                    70934000
%                                                                               70935000
    LABL(NOLINEACTIVITY);                                                       70936000
        HEADING("NO LINE","ACTIVI","TY     ",0,3);                              70937000
        NEXT(RECEIVERESPONSE);                                                  70938000
        TSLEEP(SENDACK);                                                        70939000
%                                                                               70940000
%                                                                               70941000
    LABL(WAKEUPLINE);                                                           70942000
        HEADING("WAKE UP","LINE  ",0,0,2);                                      70943000
        SP1;                                                                    70944000
        TRANSMIT(ENQP);                                                         70945000
        SP3;                                                                    70946000
        LOAD(-TIMEOUT);                                                         70947000
        ST(CLOCK);                                                              70948000
        NEXT(RECEIVEACK);                                                       70949000
        GOTO(FINISHTRANSMIT);                                                   70950000
%                                                                               70951000
    LABL(KILLTHELINE);                                                          70952000
        HEADING("KILL TH","E LINE ",0,0,2);                                     70953000
%                                                                               70954000
        SP1;                                                                    70955000
        TRANSMIT(EOTP);                                                         70956000
        SP2;                                                                    70957000
        CLA;                                                                    70958000
        ST(NEXTACTIVITY);                                                       70959000
        GOTO(FINISHTRANSMIT);                                                   70960000
%                                                                               70961000
    LABL(SENDAHEADER);                                                          70962000
        HEADING("SEND A ","HEADER ",0,0,2);                                     70963000
%                                                                               70964000
        SP1;                                                                    70965000
```

Data Documents/Inc.

```
                TRANSMIT(SOHP);                                          70966000
                INITIALIZEBCC;                                           70967000
                TSLEEP(0);                                               70968000
                SP1;                                                     70969000
                SEND(UD1);                                               70970000
                TSLEEP(0);                                               70971000
                SP1;                                                     70972000
                SEND(UD2);                                               70973000
                TSLEEP(0);                                               70974000
                SP1;                                                     70975000
                SEND(TRANNO);                                            70976000
                TSLEEP(0);                                               70977000
                SP1;                                                     70978000
                SEND(STEXT);                                             70979000
                SP2;                                                     70995000
                CLA;                                                     70999000
                ST(MCOUNT);                                              71000000
        %                                                                71002000
            LABL(TAGAIN);                                                71003000
                    HEADING("TAGAIN ",0,0,0,1);                          71004000
        %                                                                71005000
                TSLEEP(0);                                               71006000
                SP1;                                                     71007000
                BRM(MODEMFETCH);                                         71008000
                SUB(CR);                                                 71008010
                SAZN;                                                    71008020
                GOTO(EOB);                                               71008030
                ADD(CR);                                                 71008040
                BRM(SENDAC);                                             71009000
                SP2;                                                     71010000
                INCREMENT(MCOUNT);                                       71010010
                GOTO(TAGAIN);                                            71023000
        %                                                                71024000
            LABL(EOB);                                                   71025000
                    HEADING("EOB     ",0,0,0,1);                         71026000
        %                                                                71027000
                SP2;                                                     71028000
                LOAD(UNIT);                                              71029000
                SAZ;                                                     71030000
                GOTO(ADDTOMESSAGE);                                      71031000
        %                                                                71032000
            LABL(CLOSEMSG);                                              71033000
                SP1;                                                     71036000
                SEND(ETX);                                               71037000
                TSLEEP(0);                                               71038000
                SP1;                                                     71039000
                SEND(BCC);                                               71040000
                NEXT(RECEIVERESPONSE);                                   71041000
                GOTO(FINISHTRANSMIT);                                    71042000
        %                                                                71043000
            LABL(ADDTOMESSAGE);                                          71044000
                    HEADING("ADD TO ","MESSAGE",0,0,2);                  71045000
                LOAD(MODEMPOINTER);                                      71046000
                SUBIND(UNITLIMIT);                                       71047000
                SAZN;                                                    71048000
                GOTO(CLOSEMSG);                                          71049000
                SP2;                                                     71049100
                LOAD(UDLENGTH);                                          71049110
                CIA;                                                     71049112
                SR8;                                                     71049114
```

Data Documents/Inc.

```
            ADD(MCOUNT);                                                71049120
            SUB(MSMAX);                                                 71049140
            SAN;                                                        71049150
            GOTO(CLOSEMSG);                                             71049160
            SP1;                                                        71049170
            LOAD(CR);                                                   71049180
            BRM(SENDAC);                                                71049190
            GOTO(TAGAIN);                                               71082000
      %                                                                 71083000
      LABL(SENDAC);                                                     71084000
            HEADING("SEND AC",0,0,0,1);                                 71085000
      %                                                                 71086000
            DS2(0);                                                     71087000
            SP1;                                                        71088000
            ANDM(127);                                                  71089000
            T(C,A);                                                     71090000
            T(Z,X);                                                     71091000
            SODN;                                                       71092000
            INCR(X,X);                                                  71093000
            SR1;                                                        71094000
            SAZ;                                                        71095000
            GOTO(LOC-5);                                                71096000
            T(X,C);                                                     71097000
            SODN;                                                       71098000
            GOTO(LOC+5);                                                71099000
            LOAD(128);                                                  71100000
            SODN;                                                       71101000
            CLA;                                                        71102000
            NOP;                                                        71103000
            ADDR(A,C);                                                  71104000
            BTO(MODEMWRITE);                                            71105000
            T(C,A);                                                     71106000
            LOAD(BCC);                                                  71107000
            EOR(A,C);                                                   71108000
            ST(BCC);                                                    71109000
            GOTOIND(SENDAC);                                            71110000
      %                                                                 71111000
      LABL(MODEMFETCH);                                                 71111100
            HEADING("MODEM F","ETCH   ",0,0,2);                         71111110
            DS2(0);                                                     71111120
            SP1;                                                        71111130
            LOADIND(MODEMPOINTER);                                      71111140
            T(C,A);                                                     71111150
            SP2;                                                        71111160
            INCREMENT(MODEMPOINTER);                                    71111170
            SUB(UNITBUFFEREND);                                         71111180
            SAZ;                                                        71111190
            GOTO(LOC+6);                                                71111200
            LOAD(UNITBUFFERSTART);                                      71111210
            ST(MODEMPOINTER);                                           71111220
            SP1;                                                        71111230
            T(A,C);                                                     71111240
            GOTOIND(MODEMFETCH);                                        71111250
      %                                                                 71111260
      LABL(FINISHTRANSMIT);                                             71112000
            HEADING("FINISH ","TRANSMI","T      ",0,3);                 71113000
            ROF;                                                        71113100
            SP1;                                                        71114000
            CLA;                                                        71115000
            ST(MC1);                                                    71116000
```

Data Documents/Inc.

```
            TSLEEP(0);                                                  71117000
            SP1;                                                        71118000
            TRANSMIT(SYNCP);                                            71119000
            LOAD(MC1);                                                  71120000
            SAZ;                                                        71121000
            GOTO(READYTODROPLINE);                                      71122000
            IAR;                                                        71123000
            ST(MC1);                                                    71124000
            ENS;                                                        71125000
    %                                                                   71126000
        LABL(READYTODROPLINE);                                          71127000
                HEADING("READY T","O DROP ","LINE   ",0,3);             71128000
    %                                                                   71129000
            SP2;                                                        71131000
            FUN(TURNOFFRS);                                             71132000
            LOAD(MODEMSTATUS);                                          71133000
            ST(LASTACTIVITY);                                           71134000
            CLA;                                                        71143000
            ST(MODEMSTATUS);                                            71144000
            DESC(IGNOREDATAINTERRUPTS);                                 71145000
            ST(TRANSMITLABEL);                                          71146000
            DESC(NORMALCARRIER);                                        71147000
            ST(CARRIERLABEL);                                           71148000
            DESC(LOOKFORDATA);                                          71149000
            ST(RECEIVELABEL);                                           71150000
            FUN(GOTOBITMODE);                                           71151000
            ENS;                                                        71152000
    %                                                                   71153000
        LABL(ABORTTRANSMIT);                                            71154000
                HEADING("ABORT T","RANSMIT",0,0,2);                     71155000
    %                                                                   71156000
            FUN(TURNOFFRS);                                             71157000
            SP2;                                                        71157100
            CLA;                                                        71158000
            ST(MODEMSTATUS);                                            71159000
            DESC(NORMALCARRIER);                                        71160000
            ST(CARRIERLABEL);                                           71161000
    %                                                                   71163000
        LABL(STUFFIT);                                                  71163100
                HEADING("STUFFIT",0,0,0,1);                             71163200
            ROF;                                                        71163210
            RSLEEP(0);                                                  71163300
    %                                                                   71163400
        LABL(IGNOREDATAINTERRUPTS);                                     71164000
                HEADING("IGNORE ","DATA IN","TERRUPT","S      ",4);     71165000
    %                                                                   71166000
            SEN(DATAPRESENT);                                           71167000
            ENS;                                                        71168000
            BTI(MODEMREAD);                                             71169000
    %                                                                   71170000
            ENS;                                                        71171000
    %                                                                   71172000
    %                                                                   71173000
        END OF MODEM TRANSMIT;                                          71174000
    %                                                                   71175000
    %                                                                   71176000
    %       THE NEXT PROCEDURE CONTAINS MISCELLANEOUS MODEM CODE.       71177000
    %                                                                   71178000
    PROCEDURE MODEMCODE;                                                71179000
        BEGIN                                                           71180000
```

Data Documents/Inc.

```
%
        REAL SEGMENT;                                                    71181000
                                                                         71182000
%                                                                        71183000
    LABL(LOSSOFINTERLOCK);                                               71184000
          HEADING("LOSS OF"," INTERL","OCK     ",0,3);                   71185000
        SP1;                                                             71186000
        LOAD(DTRBIT);                                                    71187000
        ST(MODEMSTATUS);                                                 71188000
        FUN(TURNONDTR);                                                  71189000
        SPOUT(NOSYSTEMLINK);                                             71190000
        SP4;                                                             71209100
        CLA;                                                             71210000
        ST(MODEMSTATUS);                                                 71213000
        ST(NEXTACTIVITY);                                                71215000
        SP2;                                                             71215100
        ST(UNIT);                                                        71215200
        DESC(ANSWERRING);                                                71216000
        ST(RINGLABEL);                                                   71217000
        ENS;                                                             71218000
%                                                                        71219000
    LABL(ANSWERRING);                                                    71220000
          HEADING("ANSWER ","RING    ",0,0,2);                           71221000
%                                                                        71222000
        FUN(TURNONDTR);                                                  71224000
        SP2;                                                             71227000
        LOAD(LOOKFORRING);                                               71228000
        ST(MODEMSTATUS);                                                 71229000
        ENS;                                                             71230000
%                                                                        71231000
    LABL(IGNORERING);                                                    71232000
          HEADING("IGNORE ","RING    ",0,0,2);                           71233000
%                                                                        71234000
        FUN(DISABLEMODEMINTERRUPT);                                      71235000
        ENS;                                                             71236000
%                                                                        71237000
    LABL(TSLEEPER);                                                      71238000
          HEADING("T SLEEP","ER      ",0,0,2);                           71239000
%                                                                        71240000
        ST(TRANSMITLABEL);                                               71241000
        ENS;                                                             71242000
%                                                                        71243000
    LABL(RSLEEPER);                                                      71244000
          HEADING("R SLEEP","ER      ",0,0,2);                           71245000
%                                                                        71246000
        ST(RECEIVELABEL);                                                71247000
        ENS;                                                             71248000
%                                                                        71249000
    LABL(TSLEEPHERE);                                                    71250000
          HEADING("TSLEEP ","HERE    ",0,0,2);                           71251000
        DS2(0);                                                          71252000
        SP2;                                                             71253000
        LOAD(TSLEEPHERE);                                                71254000
        ST(TRANSMITLABEL);                                               71255000
        ENS;                                                             71256000
%                                                                        71257000
    LABL(RSLEEPHERE);                                                    71258000
          HEADING("RSLEEP ","HERE    ",0,0,2);                           71259000
        DS2(0);                                                          71260000
        SP2;                                                             71261000
        LOAD(RSLEEPHERE);                                                71262000
```

Data Documents/Inc.

```
            ST(RECEIVELABEL);                                          71263000
            ENS;                                                       71264000
      %                                                                71265000
 1    LABL(FINDAMESSAGE);                                             71296000
 2          HEADING("FIND A ","MESSAGE",0,0,2);                       71297000
 3    %                                                               71298000
            DS2(0);                                                    71299000
 4          SP2;                                                      71300000
 5          DESC(QUEUES);                                             71342000
 6          T(C,X);                                                   71343000
 7          LOADX(0);                                                 71344000
 8          SUBX(2);                                                  71344100
 9          SAZ;                                                      71345000
10          GOTO(FOUNDTRAFFIC);                                       71346000
11          ROF;                                                      71347000
12          LOAD(4);                                                  71348000
13          ADDR(C,X);                                                71349000
14          LOADX(0);                                                 71350000
15          SUBX(2);                                                  71350100
16          SAZ;                                                      71351000
17          GOTO(FOUNDTRAFFIC);                                       71352000
18          SOVN;                                                     71353000
19          GOTOIND(FINDAMESSAGE);                                    71354000
20          SOF;                                                      71355000
21          GOTO(LOC - 15);                                           71356000
      %                                                               71357000
22    LABL(FOUNDTRAFFIC);                                             71358000
23          HEADING("FOUND T","RAFFIC ",0,0,2);                       71359000
24          T(X,C);                                                   71360000
25          SUB(DES(QUEUES));                                         71361000
26          SR1;                                                      71361100
27          SR1;                                                      71362000
28          ST(UNITNO);                                               71362100
29          SL1;                                                      71362200
30          ADD(DES(INPUTUNITTABLE));                                 71363000
31          T(C,X);                                                   71364000
32          LOADX(0);                                                 71364100
33          ST(UNIT);                                                 71364200
34          BRM(SETUPUDINFO);                                         71365000
35          CLA;                                                      71366000
36          CMA;                                                      71366500
37          GOTOIND(FINDAMESSAGE);                                    71367000
      %                                                               71368000
38    LABL(SETUPUDINFO);    % THE A REGISTER SHOULD CONTAIN THE UNIT # 71369000
39          HEADING("SET UP ","UD INFO",0,0,2);                       71370000
40          PRECISION := 2;                                           71371000
41          DS2(0);                                                   71372000
42          DESC(TOGTABLE);                                           71373000
43          ADD(UNITNO);                                              71374000
44          T(C,X);                                                   71375000
45          LOADX(0);                                                 71376000
46          ST(UDTOGS);                                               71377000
47          DESC(LENGTHTABLE);                                        71378000
48          ADD(UNITNO);                                              71379000
49          T(C,X);                                                   71379100
50          SP1;                                                      71381000
51          LOADX(0);                                                 71382000
52          ST(UDLENGTH);                                             71383000
53          SP2;                                                      71384000
54          LOAD(12336);                                              71392000
55
56
57
```

Data Documents/Inc.

```
        ADD(UNITNO);                                                    71393000
        ST(UD1);                                                        71394000
        DESC(UNITBUFFERSTARTTABLE);                                     71394110
        ADD(UNIT);                                                      71394120
        T(C,X);                                                         71394130
        LOADX(0);                                                       71394140
        ST(UNITBUFFERSTART);                                            71394150
        DESC(UNITBUFFERENDTABLE);                                       71394160
        ADD(UNIT);                                                      71394170
        T(C,X);                                                         71394180
        LOADX(0);                                                       71394190
        ST(UNITBUFFEREND);                                              71394200
        DESC(UNITUPDATETABLE);                                          71394210
        ADD(UNIT);                                                      71394220
        T(C,X);                                                         71394230
        LOADX(0);                                                       71394240
        ST(UNITUPDATE);                                                 71394250
        T(C,X);                                                         71394252
        LOADX(0);                                                       71394254
        ST(MODEMPOINTER);                                               71394256
        DESC(UNITLIMITTABLE);                                           71394260
        ADD(UNIT);                                                      71394270
        T(C,X);                                                         71394280
        LOADX(0);                                                       71394290
        ST(UNITLIMIT);                                                  71394300
        LOAD(UNIT);                                                     71394310
        SL1;                                                            71394320
        ST(UNIT);                                                       71394330
        GOTOIND(SETUPUDINFO);                                           71394380
%                                                                       71406000
    LABL(HL);                                                           71407000
            HEADING("H/L     ",0,0,0,1);                                71408000
        SP2;                                                            71409000
        DESC(UPDATEVECTOR);                                             71409100
        T(C,X);                                                         71434000
        SP4;                                                            71435000
        LOADX(0);                                                       71435010
        ST(QUEUES);                                                     71435020
        LOADX(4);                                                       71435030
        ST(KEYINQ);                                                     71435040
    IF READERTOG THEN                                                   71435050
      BEGIN                                                             71435060
        LOADX(8);                                                       71435070
        ST(CARDREADERQ);                                                71435080
      END;                                                              71435090
        LOADX(IF READERTOG THEN 12 ELSE 8);                             71435100
        ST(SPOUTQ);                                                     71435110
    IF PRINTERTOG THEN                                                  71435120
      BEGIN                                                             71435130
        LOADX(IF READERTOG THEN 16 ELSE 12);                            71435140
        ST(PRINTERQ);                                                   71435150
      END;                                                              71435160
    IF PUNCHTOG THEN                                                    71435170
      BEGIN                                                             71435180
        LOADX(12 + (IF READERTOG THEN 4 ELSE 0) +                       71435190
                   (IF PRINTERTOG THEN 4 ELSE 0));                      71435200
        ST(PUNCHQUEUE);                                                 71435210
      END;                                                              71435220
%                                                                       71435230
        SP1;                                                            71435240
```

Data Documents/Inc.

```
            LOAD(48);                                                   71453100
            IAR;                                                        71453300
            ST(TRANNO);                                                 71453400
            ST(RECNO);                                                  71453500
            SP2;                                                        71454000
            LOAD(MODEMSTATUS);                                          71455000
            SAZN;                                                       71456000
            ENS;                                                        71457000
            NEXT(ACKNOWLEDGE);                                          71458000
            RSLEEP(IGNOREDATAINTERRUPTS);                               71459000
      %                                                                 71460000
      LABL(MAKENOTREADY);                                               71461000
            HEADING("MAKE NO","T READY",0,0,2);                         71462000
            PRECISION := 2;                                             71463000
            DS2(0);                                                     71464000
            ST(MODEMTEMP);                                              71465000
            ADD(12336);                                                 71466000
            T(C,A);                                                     71467000
            SP1;                                                        71467100
            LOAD(4"30");                                                71467130
            BRM(NRSTORE);                                               71467140
            LOAD(4"31");                                                71467150
            BRM(NRSTORE);                                               71467160
            SP4;                                                        71467170
            RL8;                                                        71467180
            BRM(NRSTORE);                                               71467190
            SP4;                                                        71467200
            RL8;                                                        71467210
            BRM(NRSTORE);                                               71467220
            SP1;                                                        71467230
            LOAD(CR);                                                   71467240
            BRM(NRSTORE);                                               71467250
            SP2;                                                        71467260
            LOAD(MODEMTEMP);                                            71497000
            ADD(DES(MASKTABLE));                                        71498000
            T(C,X);                                                     71499000
            SP1;                                                        71500000
            LOADX(0);      CMA;                                         71501000
            T(C,A);                                                     71502000
            LOAD(NRMASK);                                               71503000
            ORR(A,C);                                                   71504000
            ST(NRMASK);                                                 71505000
            GOTOIND(MAKENOTREADY);                                      71506000
      %                                                                 71507000
      LABL(MAKEREADY);                                                  71508000
            HEADING("MAKE RE","ADY    ",0,0,2);                         71509000
            PRECISION := 2;                                             71510000
            DS2(0);                                                     71511000
            T(C,B);                                                     71512000
            ADD(12336);                                                 71513000
            T(C,A);                                                     71514000
            SP1;                                                        71518000
            LOAD(240);                                                  71518010
            MIN;                                                        71518020
            LOAD(4"30");                                                71518050
            BRM(RSTORE);                                                71518060
            LOAD(4"32");                                                71518070
            BRM(RSTORE);                                                71518090
            SP4;                                                        71518100
            RL8;                                                        71518110
```

Data Documents/Inc.

```
            BRM(RSTORE);                                                    71518120
            SP4;                                                            71518130
            RL8;                                                            71518140
            BRM(RSTORE);                                                    71518150
            SP1;                                                            71518160
            LOAD(CR);                                                       71518162
            BRM(RSTORE);                                                    71518164
            LOAD(9 + (IF READERTOG THEN 2 ELSE 32) +                        71518170
                    (IF PUNCHTOG THEN 4 ELSE 64));                          71518180
            MIN;                                                            71518190
            SP2;                                                            71518195
            DESC(MASKTABLE);                                                71544000
            ADDR(B,C);                                                      71545000
            T(C,X);                                                         71546000
            SP1;                                                            71547000
            LOADX(0);                                                       71548000
            ANDM(NRMASK);                                                   71549000
            ST(NRMASK);                                                     71550000
            GOTOIND(MAKEREADY);                                             71551000
        LABL(NRSTORE);                                                      71552000
                HEADING("NR STOR","E      ",0,0,2);                         71552010
            DS2(0);                                                         71552020
            BRM(CSTORE);                                                    71552030
            SP1;                                                            71552035
            SOV;                                                            71552040
            GOTOIND(NRSTORE);                                               71552050
            SPOUT(MISSINGMESSAGE);                                          71552060
            GOTOIND(MAKENOTREADY);                                          71552070
        %                                                                   71552080
        LABL(RSTORE);                                                       71552090
                HEADING("R STORE",0,0,0,1);                                 71552100
            DS2(0);                                                         71552110
            BRM(CSTORE);                                                    71552120
            SP1;                                                            71552125
            SOV;                                                            71552130
            GOTOIND(RSTORE);                                                71552140
            LOAD(9 + (IF READERTOG THEN 2 ELSE 32) +                        71552160
                    (IF PUNCHTOG THEN 4 ELSE 64));                          71552170
            MIN;                                                            71552180
            GOTOIND(MAKEREADY);                                             71552190
        %                                                                   71552200
        LABL(CSTORE);                                                       71552210
                HEADING("CSTORE ",0,0,0,1);                                 71552220
            DS2(0);                                                         71552230
            SP1;                                                            71552240
            STIND(SOFTQTAIL);                                               71552250
            SP2;                                                            71552260
            INCREMENT(SOFTQTAIL);                                           71552270
            SUB(DES(ENDOFSOFTBUFFER));                                      71552280
            SAZ;                                                            71552290
            GOTO(LOC+6);                                                    71552300
            DESC(STARTOFSOFTBUFFER);                                        71552310
            ST(SOFTQTAIL);                                                  71552320
            LOAD(SOFTQTAIL);                                                71552330
            SUB(QUEUES);                                                    71552340
            ROF;                                                            71552350
            SAZN;                                                           71552360
            SOF;                                                            71552370
            NOP;                                                            71552380
            GOTOIND(CSTORE);                                                71552390
```

Data Documents/Inc.

```
%
    LABL(NORMALCLEARTOSEND);                                        71552400
          HEADING("NORMAL ","CLEAR T","O SEND ",0,3);               71553000
          SODN;                                                     71554000
          ENS;                                                      71555000
%                                                                   71556000
          SP2;                                                      71557000
          LOAD(LASTACTIVITY);                                       71558000
          SUB(TRANSMITEOT);                                         71559000
          SAZN;                                                     71560000
          GOTO(JUSTIDLEDTHELINE);                                   71561000
          LOAD(MODEMSTATUS);                                        71562000
          SAZN;                                                     71563000
          ENS;                                                      71567000
%                                                                   71568000
          SPOUT(CLSOFF);                                            71569000
          GOTO(ABORTTRANSMIT);                                      71571000
%                                                                   71572000
    LABL(JUSTIDLEDTHELINE);                                         71582000
          HEADING("JUST ID","LED THE"," LINE  ",0,3);               71583000
          SP1;                                                      71584000
          LOAD(MODEMFLAGS);                                         71585000
          ANDM(255 - LINEACTIVEBIT - MYSTARTBIT);                   71586000
          ST(MODEMFLAGS);                                           71587000
          ENS;                                                      71588000
%                                                                   71589000
    LABL(NORMALCARRIER);                                            71590000
          HEADING("NORMAL ","CARRIER",0,0,2);                       71591000
%                                                                   71592000
          SP2;                                                      71593000
          LOAD(MODEMFLAGS);                                         71594000
          SR8;                                                      71595000
          SR1;                                                      71596000
          SODN;                                                     71597000
          GOTO(CARRIERON);                                          71598000
          LOAD(MODEMSTATUS);                                        71599000
          SAZN;                                                     71600000
          GOTO(FINDTHEACTION);                                      71601000
          RR1;                                                      71602000
          SOD;                                                      71603000
          ENS;                                                      71604000
%                                                                   71605000
          RL1;                                                      71606000
          ST(LASTACTIVITY);                                         71607000
          SAZN;                                                     71608000
          ENS;                                                      71609000
          CLA;                                                      71610000
          ST(MODEMSTATUS);                                          71611000
%                                                                   71612000
    LABL(FINDTHEACTION);                                            71613000
          HEADING("FIND TH","E ACTIO","N       ",0,3);              71614000
%                                                                   71615000
          LOAD(NEXTACTIVITY);                                       71616000
          SAZN;                                                     71617000
          GOTO(LOC+11);                                             71618000
          SR1;                                                      71619000
          SODN;                                                     71620000
          ENS;                                                      71621000
          BRM(INITIATETRANSMIT);                                    71622000
          ENS;                                                      71623000
                                                                    71624000
```

Data Documents/Inc.

```
%
        LOAD(LASTACTIVITY);                                              71625000
        SUB(RECEIVEENQ);                                                 71626000
        SAZ;                                                             71627000
        ENS;                                                             71628000
        SP1;                                                             71629000
        LOAD(CONNECTEDBIT + DTRBIT + INTERLOCKBIT);                      71630000
        ST(MODEMFLAGS);                                                  71631000
        ENS;                                                             71632000
%                                                                        71633000
    LABL(CARRIERON);                                                     71634000
        HEADING("CARRIER","ON    ",0,0,2);                               71656000
%                                                                        71657000
        SP2;                                                             71658000
        LOAD(NEXTACTIVITY);                                              71659000
        SAZN;                                                            71660000
        GOTO(NEWACTIVITY);                                               71661000
        SR1;                                                             71662000
        SOD;                                                             71663000
        ENS;                                                             71664000
        BRM(INITIATERECEIVE);                                            71665000
        ENS;                                                             71666000
%                                                                        71667000
    LABL(NEWACTIVITY);                                                   71668000
        HEADING("NEW ACT","IVITY  ",0,0,2);                              71669000
        SP2;                                                             71670000
        LOAD(MODEMSTATUS);                                               71671000
        SUB(LOOKFORRING);                                                71672000
        SAZN;                                                            71673000
        ENS;                                                             71674000
        NEXT(RECEIVEENQ);                                                71675000
        SP1;                                                             71676000
        LOAD(MODEMFLAGS);                                                71677000
        SL1;    SL1;    SR1;    IAR;    RR1;                             71678000
        ST(MODEMFLAGS);                                                  71679000
        BRM(INITIATERECEIVE);                                            71680000
        ENS;                                                             71681000
%                                                                        71682000
    LABL(MODEMIDLE);                                                     71683000
        HEADING("MODEM I","DLE    ",0,0,2);                              71684000
%                                                                        71685000
        DS2(0);                                                          71686000
        SL1;                                                             71687000
        SL1;                                                             71688000
        SAN;                                                             71689000
        GOTOIND(MODEMIDLE);                                              71690000
        LOAD(-4);                                                        71691000
        ST(MC3);                                                         71692000
        BRM(FINDAMESSAGE);                                               71693000
        SAZN;                                                            71694000
        GOTOIND(MODEMIDLE);                                              71695000
        BRM(OPENALINE);                                                  71696000
        GOTOIND(MODEMIDLE);                                              71698000
%                                                                        71699000
    LABL(OPENALINE);                                                     71700000
        HEADING("OPEN A ","LINE   ",0,0,2);                              71701000
%                                                                        71702000
        DS2(0);                                                          71703000
        BRM(INITIATETRANSMIT);                                           71704000
        NEXT(TRANSMITENQ);                                               71705000
                                                                         71706000
```

Data Documents/Inc.

```
            SP1;                                                                71707000
            LOAD(MODEMFLAGS);                                                   71708000
            ANDM(255 - LINEACTIVEBIT - MYSTARTBIT);                             71709000
            ADD(LINEACTIVEBIT + MYSTARTBIT);                                    71710000
            ST(MODEMFLAGS);                                                     71711000
            GOTOIND(OPENALINE);                                                 71712000
    %                                                                           71713000
    %                                                                           71714000
        END OF MODEM CODE;                                                      71715000
    %                                                                           71716000
    %                                                                           71717000
    %       THE NEXT PROCEDURE RESERVES SPACE NEEDED TO HANDLE THE MODEM.       71718000
    %                                                                           71719000
    PROCEDURE MODEMSTORAGE;                                                     71720000
        BEGIN                                                                   71721000
    %                                                                           71722000
            REAL SEGMENT;                                                       71723000
    %                                                                           71724000
        LABL(UNITNO);                                                           71725000
                HEADING("UNIT NO",0,0,0,1);                                     71726000
            DS2(0);                                                             71727000
    %                                                                           71728000
        LABL(UNIT);                                                             71729000
                HEADING("UNIT   ",0,0,0,1);                                     71730000
            DS2(0);                                                             71731000
    %                                                                           71740000
        LABL(UD1);                                                              71741000
                HEADING("UD1    ",0,0,0,1);                                     71742000
            DS1(0);                                                             71743000
    %                                                                           71744000
        LABL(UD2);                                                              71745000
                HEADING("UD2    ",0,0,0,1);                                     71746000
            DS1(0);                                                             71747000
    %                                                                           71748000
        LABL(UDTOGS);                                                           71749000
                HEADING("UDTOGS ",0,0,0,1);                                     71750000
            DS1(0);                                                             71751000
    %                                                                           71756000
        LABL(UDLENGTH);                                                         71757000
                HEADING("UDLENGT","H      ",0,0,2);                             71758000
            DS1(0);                                                             71759000
    %                                                                           71760000
    %                                                                           71760100
        LABL(UNITUPDATE);                                                       71760110
                HEADING("UNIT UP","DATE   ",0,0,2);                             71760120
            DS2(0);                                                             71760130
    %                                                                           71760140
        LABL(UNITBUFFEREND);                                                    71760150
                HEADING("UNIT BU","FFER EN","D      ",0,3);                     71760160
            DS2(0);                                                             71760170
    %                                                                           71760180
        LABL(UNITBUFFERSTART);                                                  71760190
                HEADING("UNIT BU","FFER ST","ART    ",0,3);                     71760200
            DS2(0);                                                             71760210
    %                                                                           71760220
        LABL(UNITTAIL);                                                         71760230
                HEADING("UNIT TA","IL     ",0,0,2);                             71760240
            DS2(0);                                                             71760250
    %                                                                           71760260
        LABL(UNITLIMIT);                                                        71760270
```

Data Documents/Inc.

```
                HEADING("UNIT LI","MIT     ",0,0,2);                    71760280
            DS2(0);                                                     71760290
%                                                                       71760300
    LABL(MODEMTEMP);                                                    71760310
            HEADING("MODEM T","EMP     ",0,0,2);                        71760320
        DS2(0);                                                         71760330
%                                                                       71760340
    LABL(MODEMPOINTER);                                                 71760350
            HEADING("MODEM P","OINTER ",0,0,2);                         71760360
        DS2(0);                                                         71760370
%                                                                       71760380
    LABL(FIRSTPOINTER);                                                 71760390
            HEADING("FIRST P","OINTER ",0,0,2);                         71760400
        DS2(0);                                                         71760410
%                                                                       71760420
    LABL(STOREDCOUNT);                                                  71760430
            HEADING("STORED ","COUNT  ",0,0,2);                         71760440
        DS1(0);                                                         71760450
%                                                                       71760460
    LABL(MCOUNT);                                                       71761000
            HEADING("MCOUNT ",0,0,0,1);                                 71762000
        DS2(0);                                                         71763000
%                                                                       71764000
    LABL(RCOUNT);                                                       71765000
            HEADING("RCOUNT ",0,0,0,1);                                 71766000
        DS1(0);                                                         71767000
%                                                                       71768000
    LABL(MC2);                                                          71769000
            HEADING("MC2     ",0,0,0,1);                                71770000
        DS1(0);                                                         71771000
%                                                                       71772000
    LABL(MC1);                                                          71773000
            HEADING("MC1     ",0,0,0,1);                                71774000
        DS1(0);                                                         71775000
%                                                                       71776000
    LABL(MC3);                                                          71777000
            HEADING("MC3     ",0,0,0,1);                                71778000
        DS1(0);                                                         71779000
%                                                                       71780000
    LABL(RECNO);                                                        71789000
            HEADING("REC NO.",0,0,0,1);                                 71790000
        DS1(49);                                                        71791000
%                                                                       71792000
    LABL(TRANNO);                                                       71793000
            HEADING("TRAN NO",0,0,0,1);                                 71794000
        DS1(49);                                                        71795000
%                                                                       71796000
    LABL(BCC);                                                          71797000
            HEADING("BCC     ",0,0,0,1);                                71798000
        DS1(0);                                                         71799000
%                                                                       71800000
    LABL(MODEMFLAGS);                                                   71801000
            HEADING("MODEM F","LAGS    ",0,0,2);                        71802000
        DS1(0);                                                         71803000
%                                                                       71804000
    LABL(RECEIVELABEL);                                                 71805000
            HEADING("RECEIVE"," LABEL ",0,0,2);                         71806000
        DA(IGNOREDATAINTERRUPTS);                                       71807000
%                                                                       71808000
    LABL(TRANSMITLABEL);                                                71809000
```

Data Documents/Inc.

```
                HEADING("TRANSMI","T LABEL",0,0,2);                    71810000
            DA(IGNOREDATAINTERRUPTS);                                  71811000
        %                                                              71812000
    LABL(RINGLABEL);                                                   71813000
            HEADING("RING LA","BEL    ",0,0,2);                        71814000
        DA(ANSWERRING);                                                71815000
        %                                                              71816000
    LABL(CARRIERLABEL);                                                71817000
            HEADING("CARRIER"," LABEL ",0,0,2);                        71818000
        DA(NORMALCARRIER);                                             71819000
        %                                                              71820000
    LABL(CLEARTOSENDLABEL);                                            71821000
            HEADING("CLEAR T","O SEND ",0,0,2);                        71822000
        DA(NORMALCLEARTOSEND);                                         71823000
        %                                                              71824000
    LABL(MODEMSTATUS);                                                 71825000
            HEADING("MODEM S","TATUS  ",0,0,2);                        71826000
        DS2(0);                                                        71827000
        %                                                              71828000
    LABL(LASTACTIVITY);                                                71829000
            HEADING("LAST AC","TIVITY ",0,0,2);                        71830000
        DS2(0);                                                        71831000
        %                                                              71832000
    LABL(NEXTACTIVITY);                                                71833000
            HEADING("NEXT AC","TIVITY ",0,0,2);                        71834000
        DS2(0);                                                        71835000
        %                                                              71836000
    LABL(ACTIONTYPE);                                                  71837000
            HEADING("ACTION ","TYPE   ",0,0,2);                        71838000
        DS2(0);                                                        71839000
        %                                                              71840000
        %                                                              71852000
        %                                                              71853000
    END OF MODEM STORAGE;                                              71854000
        %                                                              71855000
        %                                                              71856000
        %       THE FOLLOWING PROCEDURE CONTAINS THE TABLES NEEDED BY THE  71857000
        %       MODEM CODE.                                            71858000
        %                                                              71859000
    PROCEDURE MODEMTABLES;                                             71860000
        BEGIN                                                          71861000
        %                                                              71862000
            REAL SEGMENT;                                              71863000
        %                                                              71864000
        %                                                              71865000
        %       THE FOLLOWING IS TABLE STORAGE FOR THE MODEMS.         71866000
        %                                                              71874000
        %                                                              71882000
    LABL(UNITBUFFERSTARTTABLE);                                        71882100
            HEADING("UNIT BU","FFER ST","ART TAB","LE     ",4);        71882105
        DA(STARTOFSOFTBUFFER);                                         71882110
        DA(STARTOFKEYINBUFFER);                                        71882120
        DA(STARTOFCRBUFFER);                                           71882130
        DA(STARTOFSPOBUFFER);                                          71882140
        DA(STARTOFLPBUFFER);                                           71882150
        DA(STARTOFPUNCHBUFFER);                                        71882160
        %                                                              71882170
    LABL(UNITBUFFERENDTABLE);                                          71882180
            HEADING("UNIT BU","FFER EN","D TABLE",0,3);                71882185
        DA(ENDOFSOFTBUFFER);                                           71882190
```

Data Documents/Inc.

```
            DA(ENDOFKEYINBUFFER);                                          71882200
            DA(ENDOFCRBUFFER);                                             71882210
            DA(ENDOFSPUBUFFER);                                            71882220
            DA(ENDOFLPBUFFER);                                             71882230
            DA(ENDOFPUNCHBUFFER);                                          71882240
      %                                                                    71882250
        LABL(UNITUPDATETABLE);                                             71882260
              HEADING("UNIT UP","DATE TA","BLE    ",0,3);                  71882265
            DA(QUEUES);                                                    71882270
            DA(KEYINQ);                                                    71882275
            DA(CARDREADERQ);                                               71882280
            DA(SPOUTQTAIL);                                                71882290
            DA(PRINTERTAIL);                                               71882300
            DA(PUNCHQUEUETAIL);                                            71882310
      %                                                                    71882320
        LABL(UNITLIMITTABLE);                                              71882330
              HEADING("UNIT LI","MIT TAB","LE     ",0,3);                  71882335
            DA(SOFTQTAIL);                                                 71882340
            DA(KEYINQTAIL);                                                71882350
            DA(CARDREADERQTAIL);                                           71882360
            DA(SPOUTQ);                                                    71882370
            DA(PRINTERQ);                                                  71882380
            DA(PUNCHQUEUE);                                                71882390
      %                                                                    71882400
        LABL(LENGTHTABLE);                                                 71883000
              HEADING("LENGTH ","TABLE  ",0,0,2);                          71884000
      %                                                                    71885000
            DS1(0);                                                        71886000
            DS1(-73);                                                      71887000
            DS1(-81);                                                      71888000
            DS1(-(PRINTERLINELENGTH + 3));                                 71889000
      %                                                                    71890000
        LABL(TOGTABLE);                                                    71891000
              HEADING("TOG TAB","LE     ",0,0,2);                          71892000
      %                                                                    71893000
            DS1(0);                                                        71894000
            DS1(8);                                                        71895000
            DS1(0);                                                        71896000
            DS1(199);                                                      71897000
      %                                                                    71898000
        LABL(OUTPUTUNITTABLE);                                             71899000
              HEADING("OUTPUT ","UNIT TA","BLE    ",0,3);                  71900000
            DS2(0);                                                        71901000
            DS2(6);                                                        71902000
            DS2(10);                                                       71903000
            DS2(8);                                                        71904000
      %                                                                    71905000
        LABL(INPUTUNITTABLE);                                              71906000
              HEADING("INPUT U","NIT TAB","LE     ",0,3);                  71907000
            DS2(0);                                                        71908000
            DS2(2);                                                        71909000
            DS2(4);                                                        71910000
            DS2(0);                                                        71911000
      %                                                                    71912000
        LABL(POWERSOF10);                                                  71913000
              HEADING("POWERS ","OF 10  ",0,0,2);                          71914000
      %                                                                    71915000
            FOR II := 0 STEP 1 UNTIL 10 DO DS1(IJUNK := 10 * II);          71916000
      %                                                                    71931000
        LABL(MASKTABLE);                                                   71932000
```

Data Documents/Inc.

```
                HEADING("MASK TA","BLE     ",0,0,2);                    71933000
            DS1(255);                                                   71934000
            DS1(254);                                                   71935000
            DS1(251);                                                   71936000
            DS1(253);                                                   71937000
    %                                                                   71938000
    %                                                                   71939000
    %       THE FOLLOWING VECTOR CONTAINS THE ADDRESSES OF THE ROUTINES 71940000
    %       TO HANDLE ALL OF THE CONDITIONS THAT THE MODEM ROUTINES     71941000
    %       HAVE STATUSES FOR.                                          71942000
    %                                                                   71943000
    LABL(ACTIONLABEL);                                                  71944000
                HEADING("ACTION ","LABEL   ",0,0,2);                    71945000
    %                                                                   71946000
            DA(IGNOREDATAINTERRUPTS);                                   71947000
            DA(IGNOREDATAINTERRUPTS);                                   71948000
            DA(WAKEUPLINE);                                             71949000
            DA(LOOKFORENQ);                                             71950000
            DA(SENDACK);                                                71951000
            DA(LOOKFORACK);                                             71952000
            DA(SENDANAK);                                               71953000
            DS2(0);                                                     71954000
            DA(SENDAHEADER);                                            71955000
            DA(LOOKFORHEADER);                                          71956000
            DA(SENDAHEADER);                                            71957000
            DA(STOREMSG);                                               71958000
            DA(IGNOREDATAINTERRUPTS);                                   71959000
            DA(CHECKBCC);                                               71960000
            DA(ACKNOWLEDGELASTREC);                                     71961000
            DA(DECYPHERRESPONSE);                                       71962000
            DA(KILLTHELINE);                                            71963000
            DA(IGNOREDATAINTERRUPTS);                                   71964000
    %                                                                   71965000
    %                                                                   71965010
    %                                                                   71965020
    LABL(UPDATEVECTOR);                                                 71965030
                HEADING("UPDATE ","VECTOR ",0,0,2);                     71965040
              DA(READYSTRING);                                          71965050
              DA(STARTOFSOFTBUFFER);                                    71965060
              DA(STARTOFKEYINBUFFER);                                   71965070
              DA(STARTOFKEYINBUFFER);                                   71965080
            IF READERTOG THEN                                           71965090
              BEGIN                                                     71965100
                DA(STARTOFCRBUFFER);                                    71965110
                DA(STARTOFCRBUFFER);                                    71965120
              END;                                                      71965130
                DA(STARTOFSPOBUFFER);                                   71965140
                DA(STARTOFSPOBUFFER);                                   71965150
            IF PRINTERTOG THEN                                          71965160
              BEGIN                                                     71965170
                DA(STARTOFLPBUFFER);                                    71965180
                DA(STARTOFLPBUFFER);                                    71965190
              END;                                                      71965200
            IF PUNCHTOG THEN                                            71965210
              BEGIN                                                     71965220
                DA(STARTOFPUNCHBUFFER);                                 71965230
                DA(STARTOFPUNCHBUFFER);                                 71965240
              END;                                                      71965250
    %                                                                   71965260
    %                                                                   71965270
```

Data Documents/Inc.

```
%
    END OF MODEM TABLES;                                                71965280
                                                                        71966000
%                                                                       71967000
%                                                                       90000000
    WHILE LOC.ADDRESS LSS 288 DO DS1(0);                                90001000
%                                                                       90002000
    STORAGE;                                                            90003000
    IF PRINTERTOG THEN LINEPRINTERSTORAGE;                              90004000
    IF READERTOG THEN CARDREADERSTORAGE;                                90005000
    IF PUNCHTOG THEN PUNCHSTORAGE;                                      90005100
    SPOSTORAGE;                                                         90006000
    MODEMSTORAGE;                                                       90007000
%                                                                       90008000
    EXECUTIVE;                                                          90009000
%                                                                       90010000
    IF READERTOG THEN CARDREADERINTERRUPT;                              90011000
    IF PUNCHTOG THEN PUNCHINTERRUPT;                                    90011100
    MODEMINTERRUPT;                                                     90012000
    PRECISION := 1;                                                     90013000
%                                                                       90014000
    IF READERTOG THEN CARDREADERNOTREADY;                               90015000
%                                                                       90016000
    IF PRINTERTOG THEN LINEPRINTERREADY;                                90017000
    IF READERTOG THEN CARDREADERREADY;                                  90018000
    IF PUNCHTOG THEN PUNCHCODE;                                         90018100
    MODEMRECEIVE;                                                       90019000
    MODEMTRANSMIT;                                                      90020000
%                                                                       90021000
    IF READERTOG THEN CARDREADERMOVER;                                  90022000
%                                                                       90023000
    TRANSLATORS;                                                        90024000
%                                                                       90025000
    SPOCODE;                                                            90026000
    KEYINCODE;                                                          90027000
    SPOUTCODE;                                                          90028000
%                                                                       90029000
    MODEMCODE;                                                          90030000
%                                                                       90031000
    SCANNERS;                                                           90031100
    SPACEHANDLER;                                                       90032000
    INTERRUPTCODE;                                                      90033000
%                                                                       90034000
    IF PRINTERTOG THEN LINEPRINTERTABLES;                               90035000
    IF READERTOG THEN CARDREADERTABLES;                                 90036000
    IF PUNCHTOG THEN PUNCHTABLES;                                       90036100
    MODEMTABLES;                                                        90037000
    SPOTABLES;                                                          90038000
    INITIALIZSYSTEM;                                                    90039000
%                                                                       90040000
%                                                                       90041000
    END UNTIL DONEIHOPE;                                                90042000
%                                                                       90043000
    IF ERRORS = 0 THEN BEGIN                                            90043100
    WRITERECORD;                                                        90044000
    CODEARRAY[0] := LASTCODEINX;                                        90046000
    CODEARRAY[1] := RECORDS;                                            90047000
    WRITE(CODE,60,CODEARRAY[*]);                                        90048000
    LOCK(CODE);                                                         90049000
    END;                                                                90049100
%                                                                       90050000
```

Data Documents/Inc.

```
PUNCHONLY:
    IF ERRORS = 0 AND COMMON THEN PUNCHER;                    90051000
    IF NOT NOHEADING THEN SUMMARY;                            90052000
                                                              90052100
%                                                             90053000
END,                                                          90054000
END;END.        LAST CARD ON OCRDING TAPE                     99999999
```

Data Documents/Inc.

33377

LABEL 000000000PRINTER00175100CC EX OBJECT/READ;FILE SOURCEFILE=SYMBOL/DC1000←←0000000 OBJECT /READ

Data Documents/Inc.