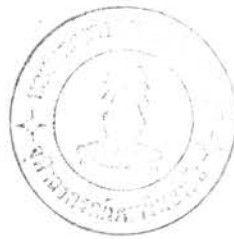


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ח חכמת

S FILE CONTAINS THE DOS. VERSION 2.4 ENTRY POINTS
 T REVISION FEB 17, 1977

DER ROUTINES

	EQU	01000	RELOAD THE OPERATING SYSTEM
	EQU	01003	LOAD AND RUN A FILE BY NUMBER
\$	EQU	01006	LOAD A FILE BY NUMBER
H	EQU	01047	GET THE NEXT DISK BUFFER BYTE
	EQU	01052	READ A SECTOR INTO THE DISK BUFFER
	EQU	01055	WRITE A SECTOR FROM THE DISK BUFFER
T	EQU	01060	WAIT FOR DISK READY
	EQU	01173	DW\$ WITHOUT WRITE VERIFY 2.3 & 2.4 ONLY

IE-CRITICAL SCHEDULING ROUTINES

	EQU	01033	CHANGE PROCESS STATE
	EQU	01036	TERMINATE PROCESS
	EQU	01041	INITIATE A TIME-CRITICAL PROCESS
	EQU	01044	TERMINATE A TIME-CRITICAL PROCESS

ERIALIZED PROCESSING ROUTINES

	EQU	01011	INCREMENT HL
	EQU	01022	DECREMENT HL
\$	EQU	01140	CLOSE ALL FILES, EXIT CHAIN, AND RELOAD DOS.
R	EQU	01143	TRANSFER A BLOCK OF MEMORY
\$	EQU	01146	SET A DISK ERROR CONDITION TRAP
\$	EQU	01151	CLOSE ALL FILES AND RELOAD DOS
\$	EQU	01170	DOS WAIT-A-WHILE NOP ROUTINE
DC	EQU	07400	DOS FUNCTION LOADER

MBOLIC FILE HANDLING ROUTINES

\$	EQU	01063	OPEN OR CREATE A FILE
	EQU	01066	OPEN AN EXISTING FILE
\$	EQU	01071	LOAD A FILE BY NAME
	EQU	01074	LOAD AND RUN A FILE BY NAME

SICAL FILE HANDLING ROUTINES

\$	EQU	01077	CLOSE A FILE
\$	EQU	01102	DELETE SPACE IN A FILE
\$	EQU	01105	CHANGE THE PROTECTION ON A FILE
\$	EQU	01110	POSITION TO A RECORD WITHIN A FILE
\$	EQU	01113	READ A RECORD INTO THE BUFFER
\$	EQU	01116	WRITE A RECORD FROM THE BUFFER
	EQU	01121	GET THE NEXT BUFFER BYTE
\$	EQU	01124	GET AN INDEXED BUFFER BYTE
	EQU	01127	STORE INTO THE NEXT BUFFER POSITION
\$	EQU	01132	STORE INTO AN INDEXED BUFFER POSITION
	EQU	01135	BACKSPACE ONE RECORD

*
• INTERNAL DOS EQUIVALENCES

DCSPFN	EQU	00004	PFN FOR USE BY DR\$ AND DW\$
DCSPDN	EQU	00005	PDN FOR USE BY DR\$ AND DW\$
DCSPTR	EQU	00026	BUFPTR USED BY GETNCH
SDFLAG	EQU	00027	SUB-DIRECTORY EXISTANCE FLAG
SDNR	EQU	00030	SUB-DIRECTORY NUMBERS (1 PER DRIVE)
DCSFLAG	EQU	01377	DOS FLAG BYTE
DOSFL2	EQU	01200	DOS FLAG BYTE #2 2.3 & 2.4 ONLY
MCR\$	EQU	01400	MONITOR COMMUNICATION REGION
LFT	EQU	01544	LOGICAL FILE TABLE
TFT	EQU	4	TEMPORARY FILE TABLE
LFO	EQU	004	LOGICAL FILE #0
LF1	EQU	104	LOGICAL FILE #1
LF2	EQU	204	LOGICAL FILE #2
LF3	EQU	304	LOGICAL FILE #3

*
• LOGICAL FILE TABLE DESCRIPTION

PFN	EQU	0	(1) PHYSICAL FILE NUMBER
PDN	EQU	1	(1) PHYSICAL DRIVE NUMBER AND PROTECTION
LRN	EQU	2	(2) NEXT LRN TO BE DEALT WITH
BLRN	EQU	4	(2) FIRST LRN WITHIN CURRENT SEGMENT
CSD	EQU	6	(2) CURRENT SEGMENT DESCRIPTOR
RIBCYL	EQU	8	(1) PDA (MSB) OF RIB
RIBSEC	EQU	9	(1) PDA (LSB) OF RIB
MAXLRN	EQU	10	(2) LARGEST LRN REFERENCED
LRNLIM	EQU	12	(2) RESERVED FIELD (INITIALLY ZERO)
BUFADR	EQU	14	(1) CURRENT CONTROLLER BUFFER ADDRESS
XXXXXX	EQU	15	(1) NOT USED

*
• DOS MEMORY MAPPING

LDRAD\$	EQU	000000	SYSTEM LOADER
DCSAD\$	EQU	001000	DOS RESIDENT
OVLAD\$	EQU	004000	DOS OVERLAYS
DSPAD\$	EQU	005400	CRT WRITE ROUTINE
KEYAD\$	EQU	005572	KEYBOARD READ ROUTINE
DEBAD\$	EQU	006000	DISK DEBUG
FLDAD\$	EQU	07400	DOS FUNCTIONS PAGE
CASAD\$	EQU	010000	CASSETTE TAPE DRIVERS
CMDAD\$	EQU	013400	COMMAND INTERPRETER
CCVAD\$	EQU	017000	COMMAND INTERPRETER OVERLAYS
BOOTDRIV	EQU	000053	DRIVE DOS WAS BOOTED FROM

IBM 0.1 (10) USE INSTRUCTIONS WITH DOS/EPT

```

*
* DOS FLAG BYTE #1 (LOCATION 01377)
*
ABTIF EQU 107 1... .. ABNORMAL PROGRAM COMPLETION
NETACT EQU 106 .1.. .... DOS NET FACILITY ACTIVE
UBOOT EQU 105 ..1. .... DISK WAS BOOTED FROM DISK
CHACT EQU 104 ...1 .... CHAINING ACTIVE
IS55AVL EQU 103 .... 1... 5500 INSTRUCTIONS AVAILABLE
PSACT EQU 102 .... .1.. PS ACTIVE
RAMAVL EQU 101 ..... .1. RAM DISPLAY AVAILABLE
RCMBCOT EQU 100 ..... ..1 BOOTSTRAP LOADED FROM RCM

```

```

* DOS KEYBOARD/DISPLAY ROUTINE CONTROL BYTE EQUATES

```

```

ECS EQU 3 END OF STRING, NO CR/LF
H EQU 011 HORIZONTAL POSITION FOLLOWS
V EQU 013 VERTICAL POSITION FOLLOWS
EOL EQU 015 END OF LINE, CR/LF
ECF EQU 021 ERASE CURSOR TO END OF FRAME
ECL EQU 022 ERASE CURSOR TO END OF LINE
R EQU 023 ROLL SCREEN UP ONE LINE
BL EQU 11 NUMBER OF BOTTOM LINE ON SCREEN
TL EQU 0 NUMBER OF TOP LINE ON SCREEN
RC EQU 79 NUMBER OF RIGHTMOST COLUMN ON SCREEN
LC EQU 0 NUMBER OF LEFTMOST COLUMN ON SCREEN

```

```

* END OF DOS VER 2.4 ENTRY POINTS

```

รูปที่ 0.1 (ต่อ) แสดงรายละเอียดของแฟ้มข้อมูล DOS/EPT

ד חמתבורת

```

*          PROGRAM      EDITMARK/DBF
          INCLUDE      COMMON/TEXT
INPFILE   FILE
INPSEQN   FROM        *-1*
INPNAME   DIM          3
INPBUFF   DIM          64
OUTFILE   FILE
OUTSEQN   FROM        *-1*
OUTNAME   DIM          3
OUTBUFF   DIM          64
          KEYIN        *$S,*P2:2,
          KEYIN        *ENTER INPUT FILE NAME...*,INPNAME
          KEYIN        *$S,*P2:2,
          KEYIN        *ENTER OUTPUT FILE NAME...*,OUTNAME
          OPEN         INPFILE,INPNAME
          PREPARE     OUTFILE,OUTNAME
START      READ       INPFILE,INPSEQN;INPBUFF
          GOTO        FINISH IF OVER
          DISPLAY    *$S,*P10:4,INPBUFF
          READ       INPFILE,INPSEQN;INPBUFF
          DISPLAY    *P10:5,INPBUFF
          READ       INPFILE,INPSEQN;INPBUFF
          DISPLAY    *P10:6,INPBUFF
          READ       INPFILE,INPSEQN;INPBUFF
          DISPLAY    *P10:7,INPBUFF
          KEYIN      *P10:8,OUTBUFF
          WRITE      OUTFILE,OUTSEQN;OUTBUFF
          GOTO      START
FINISH     WRITE     OUTFILE,OUTSEQN
          CLOSE     INPFILE
          CLOSE     OUTFILE
          STOP

```

รูปที่ ๓.3 แสดงรายละเอียดของโปรแกรม EDITMARK


```

EI
EX CCM3
TAPERDY CALL TAPEADR
IN
SRC
RTC
JMP TAPERDY
TAPEMRK CALL TAPECLR
LA 001
EX COM1
IN
SRC
JTC NCWRTRNG
CALL TAPERDY
RET
TAPEWRT CALL TAPECLR
LA 000
EX CCM1
IN
SRC
JTC NCWRTRNG
PUTNEXT LAM HL
EX WRITE
INCP HL
LAC
SU 1
LCA
JFZ PUTNEXT
EX CCM2
CALL TAPERDY
RET
NCWRTRNG EX BEEP
CALL DISPLAY
DC C13,013,011,000,023
DC *NO WRITE RING
DC C15
JMP ERROR$
COUNTER LAM HL
AD 1
LMA HL
CP C72
RFE
LA 060
LMA HL
LAL
SU 1
LLA
LAC
SU 1
LCA
JFE CCOUNTER
RET
END DUMPCORE

```

รูปที่ ๒.๒ (ต่อ) แสดงรายละเอียดของโปรแกรม DUMPCORE

```

*      PROGRAM      EDITMARK/0000
      INCLUDE      COMMON/TEXT
INPFILE  FILE
INPSEON  FORM      *-1*
INPNAME  DIM        8
INPBUFF  DIM        64
OUTFILE  FILE
OUTSEON  FORM      *-1*
OUTNAME  DIM        8
OUTBUFF  DIM        64
      KEYIN
      *55,*02:2,
      *ENTER INPUT FILE NAME...*,INPNAME
      *02:2,
      *ENTER OUTPUT FILE NAME...*,OUTNAME
      OPEN
      PREPARE      INPFILE,INPNAME
      WRITE        OUTFILE,OUTNAME
START
      READ         INPFILE,INPSEON;INPBUFF
      GOTO        FINISH IF OVER
      DISPLAY     *55,*010:4,INPBUFF
      READ         INPFILE,INPSEON;INPBUFF
      DISPLAY     *010:5,INPBUFF
      READ         INPFILE,INPSEON;INPBUFF
      DISPLAY     *010:6,INPBUFF
      READ         INPFILE,INPSEON;INPBUFF
      DISPLAY     *010:7,INPBUFF
      KEYIN
      WRITE        OUTFILE,OUTSEON;OUTBUFF
      GOTO        START
FINISH
      CLOSE      OUTFILE,OUTSEON
      CLOSE      INPFILE
      CLOSE      OUTFILE
      STOP

```

รูปที่ ๓.๓ แสดงรายละเอียดของโปรแกรม EDITMARK

ח חכמתחורת


```

* $$ JOB JNM=DUMPCONV,DISP=D,CLASS=4,USER=K1511
* $$ PRT CLASS=A,JSEP=1,COPY=1,USER=K1511
// JOB DUMPCONV K1511
// OPTION LINK,NCRLD,NCXREF
// EXEC ASSEMBLY
CORE      TITLE 'DATAPoint 5500 DUMPCONV OCTAL 8-BIT ASCII VERSION 2.4'
CORECONV  CSECT          CONTROL SECTION
          PRINT NOGEN    TELL THE ASSEMBLER
          BALR  R12,RO    ESTABLISH BASE REGISTER
          USING *,R12    ... FOR ADDRESSIBILITY
          CNTRL TAPEOUT,REW MAKE SURE THAT ...
          CNTRL TAPEOUT,hTM ... OUTPUT, TAPE HAS ...
          CNTRL TAPEOUT,REW ... A TAPE MARK AT BOT
          OPEN  READER    OPEN READER FILE
          CPEN  PRINTER   ... AND PRINTER FILE
          GET   READER,INFOAREA GET NO. OF FILES TO BE SKIPPED
          ... MAX. FILE TO BE DUMPED
          ... MAX. RECD TO BE DUMPED/FILE
          CLOSE READER    CLOSE READER FILE
          CLC   MAXFIL,SPACES IS MAX. FILE OMITTED
          BE   *+10       SET TO DEFAULT VALUE IF YES
          PACK MAXFILE,MAXFIL PACK MAX. FILE
          CLC   MAXREC,SPACES IS MAX. RECD OMITTED
          BE   *+10       SET TO DEFAULT VALUE IF YES
          PACK MAXRECD,MAXREC PACK MAX. RECD
          CLC   SKFILE,SPACES IS NO. OF SKIPPED FILE OMITTED
          BE   OPEN       BRANCH IF YES
          PACK SKFILE,SKFILE PACK NO. OF SKIPPED FILE COUNT
          CP   SKFILE,=P'1' IS NO. OF SKIPPED FILE .LT. 1
          BL   OPEN       DON'T POSITIONING OBJ FILE IF YES
          -----
          POSITIONING OBJECT FILE
          -----
FSFNEXT   CNTRL TAPEIPT,FSF FORWARD ...
          CNTRL TAPEIPT,FSF ... TO THE NEXT OBJECT FILE
          SP   SKFILE,=P'1' DECREASE NO. OF SKIPPED FILE COUNT
          BNZ  FSFNEXT     BRANCH IF NOT ZERO
          -----
          PREPARE I/O FILES FOR READ/WRITE
          -----
OPEN      OPEN TAPEIPT    OPEN INPUT FILE
          OPEN TAPEOUT    ... OUTPUT FILE
          CNTRL PRINTER,SK,1 SKIP TO NEW PAGE
          B     READ      BRANCH AROUND COMMENTS
          DC   C'DUMPCONV COPYRIGHT CHULALONGKORN UNIVERSITY 1981
          DC   C'LICENSED MATERIAL - PROGRAM PROPERTY OF CU
          DC   C'DEVELOPED BY S. MEESOMSAPN, MARCH 1, 1981
          DS   OH        ALIGN TO HALFWORD
          -----
          READ OBJECT FILE FROM TAPE

```

รูปที่ ๓.๑ แสดงรายละเอียดของโปรแกรม DUM-CONV

```

*
READ GET TAPEIPT,WORKAREA GET INPUT RECD INTO WORK AREA
AP RECNO,=P'1' ADD 1 TO RECD COUNT
CP PECNO,MAXRECD CHECK MAX. RECD/FILE TO BE DUMP
BH READ BYPASS IF GREATER THAN LIMIT
LA R1,WORKAREA PCINT TO WORK AREA
LA R2,RESULTX PCINT TO RESULT AREA
LH R6,RECSIZE GET INPUT RECD SIZE

```

```

*
*
*
TRANSLATE CODES INTO 3 LINES

```

```

LOOP IC R0,0(R0,R1) GET A CHAR FROM STRING
STC R0,HALF+1 ... AND STORE INTO WORK AREA
LH R5,HALF LOAD WORK AREA INTO WORK REG.
STC R5,128(R0,R2) EXTRACT ...
NI 128(R2),X'07' ... AND ...
OI 128(R2),X'F0' ... STORE INTO WORK AREA
SRL R5,3 SHIFT RIGHT 3 BITS
STC R5,64(R0,R2) EXTRACT ...
NI 64(R2),X'07' ... AND ...
OI 64(R2),X'F0' ... STORE INTO WORK AREA
SRL R5,3 SHIFT RIGHT 3 BITS
STC R5,0(R0,R2) EXTRACT ...
NI 0(R2),X'03' ... AND ...
OI 0(R2),X'F0' ... STORE INTO WORK AREA
LA R1,1(R0,R1) BUMP TO NEXT INPUT STRNG BYTE
LA R2,1(R0,R2) BUMP TO NEXT WORK AREA BYTE
BCT R6,LOCP CONTINUE

```

```

*
*
*
WRITE OUTPUT FILES

```

```

MVC RESULT4,WORKAREA MOVE ...
TR RESULT4,ASCTOEBF ... AND TRANSLATE
LA R2,ADDR1+5 CONVERT ...
LA R15,OCTADDR ... LOCATION COUNTER ...
BALR R14,R15 ... INTO CHARACTER FORM
LA R2,ADDR2+5 CONVERT ...
LA R15,OCTADDR ... LOCATION COUNTER ...
BALR R14,R15 ... INTO CHARACTER FORM
LA R2,ADDR3+5 CONVERT ...
LA R15,OCTADDR ... LOCATION COUNTER ...
BALR R14,R15 ... INTO CHARACTER FORM
LA R2,ADDR4+5 CONVERT ...
LA R15,OCTADDR ... LOCATION COUNTER ...
BALR R14,R15 ... INTO CHARACTER FORM
MVC DATA1,RESULT1+0 MOVE ...
MVC DATA2,RESULT1+16 ... CONTENTS ...
MVC DATA3,RESULT1+32 ... FROM WORK AREA ...
MVC DATA4,RESULT1+48 ... TO PRINT AREA
PUT PRINTER,PRNTAREA WRITE PRINT RECD.

```

รูปที่ ก.1 (ต่อ) แสดงการแปลงข้อมูลจากโปรแกรม DUMP CONV



TR	PRNTAREA,EBCTOASC	TRANSLATE TO ASCII CHAR.
PUT	TAPEOUT,PRNTAREA	WRITE TAPE RECD.
MVC	PRNTAREA,PRNTAREA-1	CLEAR PRINT AREA
MVC	DATA1,RESULT2+0	MOVE ...
MVC	DATA2,RESULT2+16	... CONTENTS ...
MVC	DATA3,RESULT2+32	... -FROM WORK AREA ...
MVC	DATA4,RESULT2+48	... TO PRINT AREA
PUT	PRINTER,PRNTAREA	WRITE PRINT RECD.
TR	PRNTAREA,EBCTOASC	TRANSLATE TO ASCII CHAR.
PUT	TAPEOUT,PRNTAREA	WRITE TAPE RECD.
MVC	PRNTAREA,PRNTAREA-1	CLEAR PRINT AREA
MVC	DATA1,RESULT3+0	MOVE ...
MVC	DATA2,RESULT3+16	... CONTENTS ...
MVC	DATA3,RESULT3+32	... WORK AREA ...
MVC	DATA4,RESULT3+48	... TO PRINT AREA
PUT	PRINTER,PRNTAREA	WRITE PRINT RECD.
TR	PRNTAREA,EBCTOASC	TRANSLATE TO ASCII CHAR.
PUT	TAPEOUT,PRNTAREA	WRITE TAPE RECD.
MVC	PRNTAREA,PRNTAREA-1	CLEAR PRINT AREA
MVC	DATA1,RESULT4+0	MOVE ...
MVC	DATA2,RESULT4+16	... CONTENTS ...
MVC	DATA3,RESULT4+32	... FROM WORK AREA ...
MVC	DATA4,RESULT4+48	... TO PRINT AREA
PUT	PRINTER,PRNTAREA	WRITE PRINT RECD.
TR	PRNTAREA,EBCTOASC	TRANSLATE TO ASCII CHAR.
PUT	TAPEOUT,PRNTAREA	WRITE TAPE RECD.
MVC	PRNTAREA,PRNTAREA-1	CLEAR PRINT AREA
CNTRL	PRINTER,SP,1	SPACING 1 LINE

 CHECK VALUE OF LINE COUNT

AP	LINECNT,=P'5'	UPDATE LINE COUNT
CP	LINECNT,=P'40'	IS LINE COUNT .LT. 40
BL	READ	BRANCH IF YES
SP	LINECNT,LINECNT	RESET LINE COUNT TO ZERO
CNTRL	PRINTER,SK,1	SKIP TO NEW PAGE
B	READ	GET NEXT INPUT RECD.

 TRANSLATE LOCATION COUNTER TO OCTAL CHARACTER

CTADDR	LH	R5,LOCAT	INCREMENT ...
	AH	R5,=H'16'	... LOCATION COUNTER ...
	STH	R5,LOCAT	... BY 16 AND SAVE IT
	LH	R6,=H'5'	SET NUMBER OF TIMES TO PERFORM
GAIN	STC	R5,0(R0,R2)	EXTRACT ...
	NI	0(R2),X'C7'	... AND TRANSLATE ...
	OI	0(R2),X'F0'	... TO CHARACTER FORM
	SRL	R5,3	SHIFT RIGHT 3 BITS
	SH	R2,=H'1'	DECREMENT BY 1
	BCT	R6,AGAIN	CONTINUE

STC R5,0(R0,R2)
 NI 0(R2),X'01'
 OI 0(R2),X'FO'
 BR R14

EXTRACT ...
 ... THE MSB BIT ...
 ... TO CHARACTER FORM
 RETURN

 END OF PROCESSING

EQJ	CLOSE TAPEIPT	CLOSE INPUT TAPE
	CLOSE TAPEOUT OUTPUT TAPE
	SP RECNO,RECNO	RESET RECD NO.
	SP LINECNT,LINECNT	RESET LINE COUNT
	LH 5,=4'-16'	RESET LOCATION
	STH 5,LOCAT COUNTER
	SP MAXFILE,=P'1'	IS LAST FILE HAVE BEEN PROCESSED
	BNZ OPEN	BRANCH IF NOT
	CNTRL TAPEIPT,RUN	UNLOAD INPUT TAPE
	CNTRL TAPEOUT,RUN OUTPUT TAPE
	CLOSE PRINTER	CLOSE PRINTER FILE
	EOJ	TERMINATED

 FILE DEFINITIONS & DATA AREAS

0	EQU	0	REGISTER 0	
1	EQU	1	REGISTER 1	
2	EQU	2	REGISTER 2	
3	EQU	3	REGISTER 3	
4	EQU	4	REGISTER 4	
5	EQU	5	REGISTER 5	
6	EQU	6	REGISTER 6	
7	EQU	7	REGISTER 7	
8	EQU	8	REGISTER 8	
9	EQU	9	REGISTER 9	
10	EQU	10	REGISTER 10	
11	EQU	11	REGISTER 11	
12	EQU	12	REGISTER 12	
13	EQU	13	REGISTER 13	
14	EQU	14	REGISTER 14	
15	EQU	15	REGISTER 15	
EADep	DTFCD	BLKSIZE=40,	BLOCK SIZE	X
		DEVADDR=SYSIPT,	DEVICE ADDRESS	X
		EOFADDR=OPEN,	EOF ADDR ROUT	X
		RECFORM=FIXUNB,	RECORD FORMAT	X
		IOAREA1=RDRAREA1,	ADDR OF I/O AREA 1	X
		MODNAME=MODCARD,	LOGIC MODULE NAME	X
		TYPEFLE=INPUT,	FILE TYPE	X
		WORKA=YES	WORK AREA REQD	X
DRAREA1	DS	CL40	I/O AREA 1 FOR RDR	
MODCARD	COMCD	RECFORM=FIXUNB,	RECORD FORMAT	X
		WORKA=YES	WORK AREA REQD	X
TAPEIPT	DTFMT	BLKSIZE=256,	BLOCK SIZE	X

รูปที่ ก.1 (ต่อ) แสดงรายละเอียดของโปรแกรม DUF2CONV

		RECSIZE=64,	RECORD SIZE	X
		DEVAADR=SYS010,	DEVICE ADDRESS	X
		EOFADDR=EOJ,	E-O-F ADDRESS	X
		RECFORM=FIXBLK,	RECORD FORMAT	X
		FILABL=NC,	FILE LABEL	X
		ICAREA1=INAREA1,	ADDR OF I/O AREA 1	X
		IOAREA2=INAREA2,	ADDR OF I/O AREA 2	X
		ERROPT=SKIP,	ERROR OPTION	X
		MODNAME=MODTAPE,	LOGIC MODULE NAME	X
		REWIND=NCRWD,	REWIND OPTION	X
		TYPEFLE=INPUT,	FILE TYPE	X
		TPMARK=YES,	TAPE MARK REQD	X
		WORKA=YES	WORK AREA REQD	X
INAREA1	DS	CL256	I/O AREA 1 FOR INPUT	
INAREA2	DS	CL256	I/O AREA 2 FOR INPUT	
TAPEOUT	DTFMT	BLKSIZE=132,	BLOCK SIZE	X
		RECSIZE=132,	RECORD SIZE	X
		DEVAADR=SYS011,	DEVICE ADDRESS	X
		RECFORM=FIXBLK,	RECORD FORMAT	X
		FILABL=NC,	FILE LABEL	X
		ICAREA1=OUTAREA1,	ADDR OF I/O AREA 1	X
		IOAREA2=OUTAREA2,	ADDR OF I/O AREA 2	X
		EPREXT=YES,	ERROR EXTENSION	X
		ERROPT=IGNORE,	ERROR OPTION	X
		MODNAME=MODTAPE,	LOGIC MODULE NAME	X
		REWIND=NCRWD,	REWIND OPTION	X
		TYPEFLE=OUTPUT,	FILE TYPE	X
		TPMARK=YES,	TAPE MARK REQD.	X
		WORKA=YES	WORK AREA REQD.	X
OUTAREA1	DS	CL132	I/O AREA 1 FOR OUTPUT	
OUTAREA2	DS	CL132	I/O AREA 2 FOR OUTPUT	
MODTAPE	MTMOD	ERROPT=YES,	ERROR OPTION	X
		RECFORM=FIXBLK,	RECORD FORMAT	X
		WORKA=YES	WORK AREA REQD.	X
PRINTER	DTFPR	BLKSIZE=132,	BLOCK SIZE	X
		DEVICE=3203,	DEVICE MODEL	X
		DEVAADR=SYSLST,	DEVICE ADDRESS	X
		RECFORM=FIXUNB,	RECORD FORMAT	X
		ICAREA1=LSTAREA1,	ADDR OF I/O AREA 1	X
		ICAREA2=LSTAREA2,	ADDR OF I/O AREA 2	X
		MODNAME=MODPRNT,	LOGIC MODULE NAME	X
		CGNTRCL=YES,	MACRO 'CNTRL' REQD.	X
		PRINTCV=YES,	MACRO 'PRTCV' REQD.	X
		WORKA=YES	WORK AREA REQD	X
LSTAREA1	DS	CL132	I/O AREA 1 FOR PRINT	
LSTAREA2	DS	CL132	I/O AREA 2 FOR PRINT	
MODPRNT	PRMOD	CGNTRCL=YES,	MACRO 'CNTRL' REQD.	X
		ICAREA2=YES,	I/O AREA 2 REQD.	X
		DEVICE=3203,	DEVICE MODEL	X
		PFPRINTCV=YES,	MACRO 'PRTCV' REQD.	X

รูปที่ ๑.๑ (ต่อ) แสดงรายละเอียดของโปรแกรม DUMP CONV

		WORKA=YES	WORK AREA REQD.
PRNTAREA	DC	C' '	
	DS	OCL132	PRINT AREA
	DC	C' '	
ADDR1	DC	CL6' '	
DATA1	DC	CL16' '	
	DC	C' '	
ADDR2	DC	CL6' '	
DATA2	DC	CL16' '	
	DC	C' '	
ADDR3	DC	CL6' '	
DATA3	DC	CL16' '	
	DC	C' '	
ADDR4	DC	CL6' '	
DATA4	DC	CL16' '	
	DC	CL40' '	
INFOAREA	DS	OCL40	INFORMATION AREA
SKFILE	DS	CL2	NO OF FILE TO BE SKIPPED
MAXFIL	DS	CL2	NO OF MAX. RECD TO BE DUMPED
MAXREC	DS	CL4	NO OF MAX. RECD TO BE DUMPED/FILE
	DS	CL32	THE REMAINDER OF INFO AREA
RECNO	DC	PL3'0'	NO OF RECD TO BE DUMP/FILE
MAXFILE	DC	PL2'1'	NO OF MAX. RECD TO BE DUMP IN PACK
MAXRECD	DC	PL3'9S9S9'	NO OF MAX. RECD TO BE DUMP/FILE PACK
LINECNT	DC	PL2'0'	NO OF LINE TO BE PRINT/PAGE
SPACES	DC	CL6' '	SPACES
WORKAREA	DS	CL64	WORK AREA FOR INPUT
RESULTX	DS	OCL256	RESULT AREA FROM DUMP
RESULT1	DS	CL64	RESULT 1
RESULT2	DS	CL64	RESULT 2
RESULT3	DS	CL64	RESULT 3
RESULT4	DS	CL64	RESULT 4
_DCAT	DC	H'-16'	LOCATION COUNTER
_HALF	DC	H'0'	WORK AREA FOR DUMP OPERATION
RECSIZE	DC	H'64'	INPUT RECD SIZE

 ASCII TO EBCDIC CODE CONVERSION TABLE

.SCTOEBC	DC	X'404040404040404040404040404040'
	DC	X'404040404040404040404040404040'
	DC	X'404F7F7B5B6C507D4D5D5C4E6B604B61'
	DC	X'F0F1F2F3F4F5F6F7F8F97A5E4C7E6E6F'
	DC	X'7CC1C2C3C4C5C6C7C8C9D1D2D3D4D5D6'
	DC	X'D7D8D9E2E3E4E5E6E7E8E94AE05A5F6D'
	DC	X'404040404040404040404040404040'
	DC	X'404040404040404040404040404040'
	DC	X'404040404040404040404040404040'
	DC	X'404040404040404040404040404040'
	DC	X'404040404040404040404040404040'
	DC	X'404040404040404040404040404040'

รูปที่ ก.1 (ต่อ) แสดงรายละเอียดของโปรแกรม DUMP-CONV


```

ENCODE  SLL  R4,3          ROTATE LEFT 3 BITS
        IC   R0,0(R0,R1)  LOAD NEXT BYTE
        OR   R4,R0        ADD 3 BITS INTO THE RIGHTMOST
        LA   R1,1(R0,R1)  BUMP TO NEXT BYTE
        BCT  R6,ENCCDE    DO ENCODE 5 TIMES
        STH  R4,ENTR      SAVE ENTRY POINT
        SR   R4,R4        RESET COUNTER
        B    READ+4       BRANCH AROUND COMMENTS
DC      C'PASM5500 COPYRIGHT CHULALONGKORN UNIVERSITY 1981 '
DC      C'LICENSED MATERIAL - PROGRAM PROPERTY OF CU '
DC      C'DEVELOPED BY S. MEESOMSARN, MARCH 1, 1981 '
        DS   OH           ALIGN TO HALFWORD BOUNDARY
-----
*
*
*
READ    READ OBJECT FILE & MARKER FILE
-----
READ   LA   R4,64(R0,R4)  ADD 64 TO LOCATION COUNTER
        GET  OBJFILE,CBJWORK  GET OBJECT RECORD
        GET  MRKFILE,MRKWORK  GET MARKER RECORD
        CLI  MRKWORK,C'B'    BYPASS RECORD
        BE   READ           BRANCH IF NOT
        LA   R5,OBJWORK     POINT TO THE 1ST OBJECT BYTE
        LA   R6,MRKWORK     POINT TO THE 1ST MARKER BYTE
AGAIN  CLI  0(R6),C'A'     A-ASCII CHARACTER
        BE   START         BRANCH IF YES
        CLI  0(R6),C'C'     C-CONTROL CHARACTER
        BE   START         BRANCH IF YES
        CLI  0(R6),C'I'     I-INSTRUCTION
        BE   START         BRANCH IF YES
        CLI  0(R6),C'E'     E-END DISASSEMBLY
        BE   FINISH        BRANCH IF YES
        CLI  0(R6),C' '     SPACE
        BNE  MRKERR        BRANCH IF NOT
        LA   R4,1(R0,R4)    ADD 1 TO LOCATION COUNTER
        LA   R5,1(R0,R5)    BUMP TO NEXT OBJ WORK BYTE
        LA   R6,1(R0,R6)    BUMP TO NEXT MRK WORK BYTE
        C    R6,=A(MRKWORK+63)  END OF RECORD
        BNH  AGAIN         BRANCH IF NOT
        GET  OBJFILE,CBJWORK  GET OBJECT RECORD
        GET  MRKFILE,MRKWORK  GET MARKER RECORD
        LA   R5,OBJWORK     POINT TO THE 1ST OBJECT BYTE
        LA   R6,MRKWORK     POINT TO THE 1ST MARKER BYTE
        B    AGAIN         CHECK AGAIN
-----
*
*
*
START  PREPARE HEADER & SOME DIRECTIVE RECDS
-----
        STH  R4,LOCN       SAVE PROG STARTING ADDRESS
        XC   FMTWORK,FMTWORK  CLEAR FMTWORK WORK AREA
        MVI  FMTWORK,C'H'   SET UP HEADER RECORD TYPE
        MVC  FMTWORK+2(2),MAXLPP  MAXIMUM LINE PRINTED/PAGE
        MVC  FMTWORK+4(8),PROGNAME  PROGRAM NAME

```

```

MVC FMTWORK+12(62),TITLE PROGRAM IDENTIFICATION
PUT FMTFILE,FMTWORK WRITE HEADER RECORD
XC FMTWORK(74),FMTWORK CLEAR FMTWORK WORK AREA
MVI FMTWORK,C'D' IDENTIFY A DIRECTIVE RECORD
MVC FMTWORK+2(5),=C'SET ' DECLARE SET DIRECTIVE
MVC FMTWORK+7(2),LOCN STARTING ADDR THAT PROG WAS LOADED
PUT FMTFILE,FMTWORK WRITE SET DIRECTIVE RECORD
MVC FMTWORK+2(5),=C'INC ' DECLARE INCLUDE DIRECTIVE
MVC FMTWORK+7(7),=C'DOS/EPT' ENTRYPOINT FILE
PUT FMTFILE,FMTWORK WRITE INCLUDE DIRECTIVE RECD
MVC FMTWORK+2(5),=C'ENT ' DECLARE ENTRY DIRECTIVE RECD
MVC FMTWORK+7(2),ENR START OF EXECUTION ADDRESS
XC FMTWORK+9(5),FMTWORK+9 CLEAR TO BINARY ZERO
PUT FMTFILE,FMTWORK WRITE ENTRY DIRECTIVE RECORD
XC FMTWORK(14),FMTWORK CLEAR FMTWORK WORK AREA

```

*
* STORE INFORMATION FROM OBJFILE & MRKFILE
*

STORE	SR R4,R4	RESET COUNTER
	IC R0,0(R6)	STORE MARK CHARACTER ...
	STC R0,FMTWORK	... INTO THE 1ST BYTE OF FMT W/A
	LA R7,FMTWORK+2	SET ADDR OF WA TO CONTAIN INFO
NEXT	IC R0,0(R0,R5)	PUT A BYTE OF INFO FROM OBJ RECD
	STC R0,0(R0,R7)	INTO WORK AREA
	LA R4,1(R0,R4)	INCREMENT COUNTER BY 1
	LA R0,54	SET MAX. BYTE OF ASCII CHARS STR
	CLI FMTWORK,C'A'	IS THIS RECD CONTAINS ASCII CHARS
	BE LNGCHK	BRANCH IF YES
	LA R0,8	SET MAX. BYTE OF CONTROL CHARS STR
	CLI FMTWORK,C'C'	IS THIS RECD CONTAINS CONTROL CHARS
	BE LNGCHK	BRANCH IF YES
LNGCHK	LA R0,255	SET MAX. BYTE OF INSTRUCTIONS PLUS 1
	CR R4,R0	CHECK LENGTH OF STRING
	BNE BUMP	BRANCH IF NOT EQUALS MAX. LIMIT
	CLI FMTWORK,C'I'	IS THIS RECD CONTAINS INSTRUCTION
	BE LNGERR	ERROR IF YES (MAX. OF INST IS 254)
	STC R4,FMTWORK+1	STORE LENGTH OF STRING
	PUT FMTFILE,FMTWORK	WRITE FMT RECORD
	IC R0,FMTWORK	SAVE MARK CHARACTER
	XC FMTWORK,FMTWORK	CLEAR FMT WORK AREA
	STC R0,FMTWORK	RESTORE MARK CHARACTER
	SR R4,R4	RESET COUNTER TO BINARY ZERO
	LA R7,FMTWORK+1	RESET FMT WORK AREA ADDR POINTER
BUMP	LA R5,1(R0,R5)	PUMP TO NEXT OBJ BYTE
	LA R6,1(R0,R6)	BUMP TO NEXT MRK BYTE
	LA R7,1(R0,R7)	BUMP TO NEXT FMT BYTE
	C R6,=A(MRKWORK+63)	END OF RECORD
	BNH MRKCHK	BRANCH IF NOT
	GET OBJFILE,CBJWORK	GET NEXT OBJECT RECD
	GET MRKFILE,MRKWORK	GET NEXT MARKER RECD

```

LA      R5,OBJWORK          POINT TO THE 1ST OBJECT BYTE
LA      R6,MRKWRK          POINT TO THE 1ST MARKER BYTE
MRKCHK  CLI      0(R6),C' '  SPACE
        BE      NEXT        BRANCH IF YES
        LTR     R0,R4        IS COUNTER ZERO
        BZ      CHKNXT      DON'T WRITE FMT RECD IF YES
        STC     R4,FMTWRK+1  STORE LENGTH OF STRING
        PUT     FMTFILE,FMTWRK WRITE FMT RECD FROM FMT WORK AREA
        XC      FMTWRK,FMTWRK CLEAR FMT WORK AREA
CHKNXT  CLI      0(R6),C'A'  A-ASCII CHARACTER
        BE      STORE        BRANCH IF NOT
        CLI     0(R6),C'C'    C-CONTROL CHARACTER
        BE      STORE        BRANCH IF NOT
        CLI     0(R6),C'I'    I-INSTRUCTION CHARACTER
        BE      STORE        BRANCH IF NOT
        CLI     0(R6),C'E'    E-END DISASSEMBLY CHARACTER
        BE      FINISH       BRANCH IF NOT
*
* -----
* MARKER ERROR
* -----
MRKERR  XC      PRNTAREA,PRNTAREA  DISPLAY ...
        IC      R0,0(R0,R6)        ... ERROR ...
        STC     R0,PRNTAREA        ... MESSAGE ...
        MVC     PRNTAREA+3(34),=C'IS INVALID FOR MARKER. 'E' ASSUMED'
        B       WRTMSG             ... ON SYSLST
*
* -----
* INSTRUCTION LENGTH ERROR
* -----
LNGERR  XC      PRNTAREA,PRNTAREA  DISPLAY ...
        MVC     PRNTAREA(13),=C'*** ERROR ***' ... ERROR MSG ...
        MVC     PRNTAREA+14(30),=C'LENGTH OF INSTRUCTION GROUP IS'
        MVC     PRNTAREA+45(22),=C'GREATER THAN 254 BYTES'
        PUT     PRINTER,PRNTAREA   ... ON SYSLST
*
* -----
* END OF DISASSEMBLY
* -----
FINISH  MVI     FMTWRK,C'D'        IDENTIFY END DIRECTIVE RECORD
        MVC     FMTWRK+2(5),=C'END  * DECLARE END DIRECTIVE STMT
        PUT     FMTFILE,FMTWRK    WRITE END STATEMENT
*
* -----
* END OF PROCESSING
* -----
OBJ     CLOSE  OBJFILE            CLOSE OBJECT FILE
        CLOSE  MRKFILE            ..... MARKER FILE
        CLOSE  FMTFILE            ..... FORMAT FILE
        CLOSE  PRINTER            ..... PRINTR FILE
        CNTRL  OBJFILE,RUN        UNLOAD OBJECT FILE
        CNTRL  MRKFILE,RUN        ..... MARKER FILE
        ECJ                       TERMINATED

```



```

OBJWORK DS CL64 OBJ RECD WORK AREA
MRKWORK DS CL64 MRK RECD WORK AREA
FMTWORK DS CL256 FMT RECD WORK AREA
PRNTAREA DS CL100 PRT RECD WORK AREA
LTORG
END PASM5500

```

```

/*
// EXEC LNKEDT
// ASSGN SYSIPT, CUU ..... READER FILE
// ASSGN SYS011, CUU ..... OBJECT FILE
// ASSGN SYS012, CUU ..... MARKER FILE
// ASSGN SYS013, CUJ ..... FORMAT FILE
// ASSGN SYSLST, CUU ..... ERROR FILE
// EXEC

```

```

0702111156EDIT DATAPCINT 5500 GENERAL EDITOR COMMAND VERSION 2.4

```

```

/*
/*
* $$ ECJ

```

NUMBER OF OBJECT FILES TO BE SKIPPED
 BEFORE ACTUAL PROCESSING STARTS
 (IF OMITTED, DEFAULT TO 00)

HEADING INFORMATIONS
 (MAX. 62 BYTES)

PROGRAM NAME
 (MAX. 8 BYTES)

THE PROGRAM ENTRY POINT (OCTAL)
 (IF OMITTED, DEFAULT TO 000000)

MAXIMUM LINES PRINT/PAGE
 (IF OMITTED DEFAULT TO 50 LPP)

รูปที่ ก.2 (ต่อ) แสดงรายละเอียดของโปรแกรม PASM5500

```

* $$ JOB JNM=DASM5500,DISP=D,CLASS=0,USER=K1511
* $$ PRT CLASS=A,JSFP=1,COPY=1,USER=K1511
// JOB DASM5500 K1511
// OPTION LINK,NORLD,NOXREF
// EXEC ASSEMBLY
DASM      TITLE 'DATAPoint 5500 DISASSEMBLER VERSION 2.4'
DASM5500 CSECT          START OF CONTROL SECTION
          PRINT NO$FN          PRINT OPTION
          BALR R9,R0          ESTABLISH BASE REGS.
          USING *,R9,R10,R11,R12  TELL THE ASSEMBLER
          LA R10,X'800'(R0,R9)  LOAD THE SECOND ...
          LA R10,X'800'(R0,R10)  ... BASE REGISTER
          LA R11,X'800'(R0,R10)  LOAD THE THIRD ...
          LA R11,X'800'(R0,R11)  ... BASE REGISTER
          LA R12,X'800'(R0,R11)  LOAD THE FOURTH ...
          LA R12,X'800'(R0,R12)  ... BASE REGISTER
          GETIME ,          GET START TIME ...
          ST R1,TIMESTRT          ... AND SAVE IT
          CNTRL TX$FILE,WTM          MAKE SURE THAT OUTPUT
          CNTRL TX$FILE,REW          ... TAPES HAVE A TAPE MARK
          CNTRL PR$FILE,WTM          ... AT THE BEGINING OF TAPE
          CNTRL PR$FILE,REW          ... REELS
          OPEN FMT$FILE          OPEN /FMT FILE
          OPEN TX$FILE          .... /TXT FILE
          OPEN PR$FILE          .... /PRT FILE
          OPEN PRINTER          .... PRINTER FILE
          CNTRL PRINTER,SM,1          SKIP TO NEXT PAGE
          GET FMT$FILE,TAPEWORK          GET THE 1ST /FMT RECORD
          MVC MAXLPP,TAPEWORK+2          SAVE MAX. LINE PRINTED/PAGE
          MVC PROGRAM,TAPEWORK+4          SAVE PROGRAM NAME
          MVC TITLE,TAPEWORK+12          SAVE HEADING TITLE
          CLI TAPEWORK,C'H'          IS A HEADER RECORD
          BE PR$HNG          BRANCH IF YES
          CNTRL FMT$FILE,BSR          BACKSPACE ONE /FMT RECORD
          MVC MAXLPP,=C' '          OMIT MAX. LINE PRINTED/PAGE,
          MVC PROGRAM,=C'NDNAME'          * ... PROGRAM NAME,
          XC TITLE,TITLE          ..... AND HEADING TITLE
          BAL R14,HEADING          PRINT HEADING LINES
          CLC MAXLPP,=C' '          IS MAX. LINE PER PAGE OMITTED
          BE READ1          BRANCH IF YES (USE DEFAULT VALUE)
          PACK MAXLPP,MAXLPP          PACK MAX. LINE LIMIT / PAGE
          CP MAXLPP,=P'1'          IS MAX. LINE LIMIT .LT. 1
          BL READ1          BRANCH IF YES (USE DEFAULT VALUE)
          MVC LINELMT,MAXLPP          SET MAX. LINE LIMIT / PAGE
          B READ1          BRANCH AROUND COMMENTS
          DC C'DASM5500 COPYRIGHT CHULALONGKORN UNIVERSITY 1981 '
          DC C'LICENSED MATERIAL - PROGRAM PROPERTY OF CU '
          DC C'DEVELOPED BY S. MUESOMSAEN, MARCH 1, 1981 '
          DS OH          ALIGN TO HALFWORD
          -----
          *
          *
          READ DATAPoint ASCII OBJECT CODE FROM FORMATTED TAPE

```

รูปที่ ๓.๓ การนำเอาโค้ดวัตถุจากเทปที่จัดรูปแบบ DASM5500


```

*
READ1  GET  FMTFILE,TAPEWORK      GET /FMT RECORD INTO TAPEWORK
      AD  STMT,=P'1'             ADD 1 TO STMT NO.
      LA  R1,TAPEWORK           GET ADDR. OF TAPEWORK
      CLI 0(R1),C'I'            IS 5500 INST RECD.
      BE  INSTR                 BRANCH IF YES
      CLI 0(R1),C'A'            IS ASCII CHAP RECD.
      BE  ASCII                 BRANCH IF YES
      CLI 0(R1),C'C'           IS CONTROL CHAR RECD.
      BE  CNTRL                 BRANCH IF YES
      B   DIRCT                 BRANCH TO 5500 DIRECTIVE ROUT
*
*
-----
5500 INSTRUCTION CODE
*
*
INSTR  LA  R1,2(P0,R1)          POINT TO THE FIRST INST ...
      ST  R1,ACTINST           ... AND SAVE ITS ADDR
      SR  R0,R0                FIND ...
      IC  R0,TAPEWORK+1        ... THE NEXT ADDR BEHIND ...
      AR  R1,R0                ... THE LAST INST, ...
      ST  R1,ENDINST           ... AND SAVE IT
INSTRCHK L  R1,ACTINST          GET INSTRUCTION
      BAL R14,POTGET1          BRANCH TO POTGET1 ROUT
      BAL R14,MOTGET1          BRANCH TO MOTGET1 ROUT
      B   LIST1                WRITE OUTPUT FILES
*
*
-----
5500 DIRECTIVE INSTRUCTION
*
*
DIRCT  LA  R1,2(P0,R1)          POINT TO A DIRECTIVE CHAP
      BAL R14,DOTGET1          BRANCH TO DOTGET1 ROUT
*
*
WRITE TAPE & LISTING
*
*
LIST1  CLC  LOCN,ENTR           IS ENTRY POINT ENCOUNTERED
      BNF  **10                BYPASS MOVE INSTR IF NOT
      MVC  LABEL,PROGNAME      YES, MOVE PROG NAME TO LABEL
      LA  R2,PRNTAREA+6        TRANSLATE LOCATION COUNTER
      BAL R14,OCTBASE          ... TO MSB LSB FORMAT
      LA  R2,PRNTAREA+13       TRANSLATE LOCATION COUNTER
      BAL R14,OCTADDR          ... TO CHARACTER CODE
      CLI  TAPEWORK,C'D'       IS A DIRECTIVE RECD
      BE  **38                 BRANCH IF YES
      LA  R1,TAPEWORK+1        POINT TO INPUT STR WITH LNTH PREFIX
      LA  R2,WORKAREA          POINT TO THE 1ST BYTE OF WORK AREA
      CLI  TAPEWORK,C'I'       IS A INSTRUCTION RECD
      BNE  **18                 BRANCH IF NOT
      L   R1,ACTINST           POINT TO THE BYTE ...
      BCTR P1,R0                ... BEFORE THE ACTIVE INSTRUCTION
      IC  R0,LENGTH            ... AND SAVE LENGTH OF ACTIVE INST
      STC R0,0(P0,R1)          ... INTO IT
      BAL R14,OCTCHAP          TRANSLATE TO OCTAL CHAP CODE
      MVC  PRNTAREA+22(6),=X'4020202020' SFT EDIT MASK

```



```

ED      PRNTAREA+33(6),STMT MOVE STMT NO. TO PRINT AREA
MVC    PRNTAREA+40(80),PROGTX MOVE PROGRAM TEXT
CLI    TAPEWORK,C'I'      IS RECORO TYPE A DIRECTIVE
BE     PUTX                BRANCH IF YES
LA     R1,WORKAREA+1      ELSE POINT TO THE FIRST BYTE OF STR
LA     R2,PRNTAREA+15     ... AND THE FIRST ADDR TO PLACE STR
SR     R6,R6              ... RESET WORK REG. TO ZERO
IC     R6,WORKAREA        ... POINT TO LENGTH OF STRING
CH     R6,=H'15'         BRANCH IF LNPTH OF STRG GTR THAN 15
BNH    NEXT              ... ELSE ...
NEXT   LH     R6,=H'15'   ..... TRUNCATE TO THE FIPST 15 BYTES
IC     R0,0(R0,R1)       MOVE .....
STC    R0,0(R0,R2)      ... A BYTE
IC     R0,1(R0,R1)       MOVE ...
STC    R0,1(R0,R2)      ... A NEXT BYTE
IC     R0,2(R0,R1)       MOVE ...
STC    R0,2(R0,R2)      ... A NEXT BYTE
LA     R1,3(R0,R1)       BUMP TO THE NEXT 3 BYTES
LA     R2,4(R0,R2)       ... AND THE NEXT 4 BYTES
SH     R6,=H'2'         BRANCH UNTIL THE LAST ...
PUTX   BCT     R6,NEXT   ... BYTE HAVE BEEN MOVED
PUT    TXTFILE,PROGTX   WRITE /TXT RECORD
PUT    PRFILE,PRNTAREA  ..... /PRT RECORD
PUT    PRINTER,PRNTAREA ..... PRINT RECORD
MVC    PRNTAREA,PRNTAREA-1 CLEAR PRINT AREA
MVC    PROGTX,PROGTX-1  ..... PROGTX AREA
AP     LINECNT,=P'1'    ADD 1 TO LINE NUMBER
CP     LINECNT,LINELMT  CHECK UP TO LINE LIMIT
BNE    LOCUP           BRANCH AROUND IF NOT
SP     LINECNT,LINECNT  RESET LINE NO
BAL    R14,HEADING     PRINT HEADING LINES
-----
*
*
*
LOCUP  UPDATE LOCATION COUNTER
-----
SP     R0,R0            UPDATE ...
IC     R0,LENGTH        ... LOCATION COUNTER ...
AH     R0,LOCN          ... WITH LENGTH OF INSTR ...
STH    R0,LOCN         ... OR DATA AND SAVE IT
-----
*
*
*
CHECK ACTUAL INPUT NEED FOR INST RECD
-----
CLI    TAPEWORK,C'I'   IS RECO CONTAINS INTRUCTION
BNE    READ1           BRANCH IF NOT
SP     R0,R0           GET LENGTH OF INST ...
IC     R0,LENGTH        ... INTO WORK REG
A      R0,ACTINST       POINT TO THE NEXT INST ADDR
C      R0,ENDINST       IS THE LAST INST HAVE BEEN PROCESSED
BE     READ1           GET NEXT /FMT RECD IF YES
BH     IEHPTN          BRANCH TO ERR RTN IF GTR
ST     R0,ACTINST       STORE NEXT INST ADDR
AP     STMT,=P'1'      ADD 1 TO STATEMENT NUMBER

```



```

*      ENT DIRECTIVE
*
PIENT  MVI   LENGTH,X'00'   LENGTH ISN'T RECD FOR THIS DIP
      MVC   ENTR,5(R1)     SET ENTRY POINT ADDR
      SP    STMT,=P'1'    NOT COUNT THIS INPUT RECD
      BR    READ1         BRANCH TO READ NEXT RECD
*
*      END DIRECTIVE
*
PIEND  MVI   LENGTH,X'00'   LENGTH ISN'T RECD FOR THIS DIP
      MVC   OPCODE,0(R1)   SET OPCODE FIELD TO 'END '
      MVC   OPERAND(8),PROGNAME SET OPERAND FIELD TO PROGRAM NAME
      MVC   LDCN,ENTR     SET LOCATN COUNTER TO ENTRY ADDR
      XC    ENTR,ENTR     SET ENTRY ADDR TO ZERO
      BR    R14          RETURN TO CALLER ROUT.
*
*      5500 INSTRUCTION PROCESSOR PHASE 0
*
IPROCO MVC   OPCODE,MOTWORK+1 MOVE MNEMONIC OPCODE TO OPCODE FLD
      MVI   LENGTH,X'01'   SET INSTR LNTH TO 1
      CLI   CONCAT,C' '   IF NO CONCATINATE CHAR
      BR    R14           ... THEN RETURN ...
      MVC   OPCODE(3),=C'BTR' RESET OPCODE FIELD...
      MVI   LENGTH,X'02'   SET INSTR LNTH TO 2 ...
      CLI   CONCAT,C'B'   IF CONCATINATE CHAR IS 'B'
      BR    R14           ... THEN RETURN ...
      MVC   OPCODE(3),=C'RCV' RESET OPCODE FIELD
      CLI   CONCAT,C'C'   IF CONCATINATE CHAR IS 'C'
      BR    R14           ... THEN RETURN ...
      P     IEHRTN        BRANCH TO INST ERROR HANDLING ROUT
*
*      5500 INSTRUCTION PROCESSOR PHASE 1
*
IPROCI MVI   LENGTH,X'02'   SET LNTH OF INST TO 2 BYTES
      CLI   CONCAT,C' '   TEST CONCATINATE CHAR
      BR    IPROCIWX      BRANCH IF NO CONCAT CHAR
IPROCIWX MVI   LENGTH,X'03' SET LNTH OF INST TO 3 BYTES
      MVC   OPCODE,MOTWORK+1 MOVE MNEMONIC OPCODE
      LA    R2,OPCODE     POINT TO OPCODE FIELD
IPROCI1P CLI   0(R2),C'@'   SCAN OPCODE FLD FOR '@'
      BR    IPROCI1RP     BRANCH IF FOUND
      LA    R2,1(R0,R2)   BUMP TO NEXT BYTE IN OPCODE FLD
      C     R2,=A(OPCODE+4) DO UNTIL THE LAST BYTE OF ...
      SNH   IPROCI1P     ... OPCODE FLD HAVE BEEN PROCESSED
      BR    IPROCI1OR    THEN BRANCH AROUND
IPROCI1RP IC   R0,CONCAT   REPLACE '@' WITH ...
      STC   R0,0(R0,R2)   ... CONCATINATE CHAR
IPROCI1OR MVI   IPROCIWPK,X'01' SET LNTH OF STR TO LNTH OF DATA
      IC   R0,1(R0,R1)   SAVE DATA BYTE OF INST ...
      STC   R0,IPROCIWPK+1 ... INTO INST PROCOR STR AREA
      ST   R1,REG1       SAVE REG. 1

```

```

LA R1,IPROCWPK          POINT TO INST PROC SR STR AREA
LA R2,WORKAREA          ... AND OUTPUT STR AREA
ST R14,REG14           SAVE REG. 14
BAL R14,OCTCHAP        BRANCH TO CONVERT POINTINE
L R1,REG1              RESTORE REG. 1
L R14,REG14           RESTORE REG. 14
MVC OPERAND(3),WORKAREA+1 MOVE OUTPUT STRING TO OPERAND FLD
CLI OPERAND,C'0'       IS THE FIRST BYTE OF OPERAND A '0'
BR R14                RETURN IF YES
MVI OPERAND,C'0'       PUT '0' INTO THE 1ST BYTE OF OPERAND
MVC OPERAND+1(3),WORKAREA+1 ... AND REMOVE
BR R14                RETURN

```

*
*
*-----
5500 INSTRUCTION PROCESSOR PHASE 2
*-----
*

```

IPROC2 MVI LENGTH,X'01' SET LNPTH TO 1 BYTE INSTR
        CLI CONCAT,C' ' IS NO CONCAT CHAR
        BR IPROC2NX    RETURN IF YES
IPROC2NX MVI LENGTH,X'02' SET LNPTH TO 2 BYTES INSTR
        MVC OPCODE,MOTWORK+1 SET OPCODE FIELD
        MVC OPERAND(7),MOTWORK+6 SET OPERAND FIELD
        LA R2,OPCODE   POINT TO OPCODE FLD
IPROC2LP CLI 0(R2),C'a' SCAN OPCODE FLD FOR 'a'
        BR IPROC2RP   BRANCH IF FOUND
        LA R2,1(R0,R2) BUMP TO NEXT OPCODE BYTE
        C R2,=A(OPCODE+4) IS THE LAST BYTE HAVE BEEN PROCESSED
        BNH IPROC2LP  BRANCH IF NOT
        BR R14       RETURN
IPROC2RP IC R0,CONCAT  REPLACE 'a' WITH
        STC R0,0(R0,R2) ... CONCATINATE CHAR
        BR R14       RETURN

```

*
*
*-----
5500 INSTRUCTION PROCESSOR PHASE 3
*-----
*

```

IPROC3 MVC OPCODE,MOTWORK+1 SET OPCODE ...
        MVI LENGTH,X'03' ... AND LENGTH
        LA R2,EPT      POINT TO ENTRY POINT TABLE
IPROC3CP CLC 1(R2,R1),0(R2) IS LSB MSB FOUND AS ENTRY IN EPT
        MVC OPERAND(8),2(R2) MOVE ENTRY POINT NAME
        BR R14       RETURN IF EQUALS
        LA R2,10(R0,R2) BUMP TO NEXT ENTRY IN EPT
        C R2,=A(EPTEND) IS END OF TABLE REACHED
        BNH IPROC3CP BRANCH IF NOT
        IC R0,2(R0,R1) STORE R0R ADDR INTO ...
        STC R0,HALF ... THE 1ST BYTE OF WORK AREA
        IC R0,1(R0,R1) STORE LSB ADDR INTO ...
        STC R0,HALF+1 ... THE 2ND BYTE OF WORK AREA
        LA R2,WORKAREA+5 POINT TO 6TH BYTE OF OUTPUT STR
        ST R14,REG14 SAVE RETURN ADDR
        LH R5,HALF LOAD MSB LSB INTO WORK REG
        BAL R14,OCTADDR+4 BRANCH TO EXTRACT ROUTINE

```



```

L      R14,REG14          RESTORE RETURN ADDR
MVC    OPERAND(6),WORKAREA MOVE OUTPUT STRING TO OPERAND FLD
CLI    OPERAND,C'0'      IS THE FIRST BYTE OF OPERAND A '0'
BER    R14              RETURN IF YES
MVI    OPERAND,C'0'      PUT '0' INTO THE 1ST BYTE OF OPERAND
MVC    OPERAND+1(6),WORKAREA ... AND REMOVE
BF     R14              RETURN

```

5500 INSTRUCTION PROCESSOR PHASE 4

IPROC4

```

MVC    OPCODE,MOTWORK+1  SET OPCODE FIELD
MVC    OPERAND(7),MOTWORK+6 SET OPERAND FIELD
MVI    LENGTH,X'01'      SET LENGTH TO 1 BYTE INST
CLI    CONCAT,C' '       IS NO CONCATINATE CHAR
BER    R14              RETURN IF YES
MVC    OPERAND(4),=C'BC'  SET OPERAND FLD
MVI    LENGTH,X'02'      SET INST LNGLTH TO 2 BYTES
CLI    CONCAT,C'C'       IS CONCAT CHAR A 'C'
BER    R14              RETURN IF YES
MVC    OPERAND(4),=C'BC,2' SET OPERAND FIELD
CLI    CONCAT,C'D'       IS CONCAT CHAR A 'D'
BER    R14              RETURN IF YES
MVC    OPERAND(4),=C'DE'  SET OPERAND FIELD
CLI    CONCAT,C'E'       IS CONCAT CHAR A 'E'
BER    R14              RETURN IF YES
MVC    OPERAND(4),=C'DE,2' SET OPERAND FIELD
CLI    CONCAT,C'H'       IS CONCAT CHAR A 'H'
BER    R14              RETURN IF YES
MVC    OPERAND(4),=C'HL,2' SET OPERAND FIELD
CLI    CONCAT,C'X'       IS CONCAT CHAR A 'X'
BER    R14              RETURN IF YES
B      IEHRTN          BRANCH TO INST ERROR HANDLING ROUT

```

5500 INSTRUCTION PROCESSOR PHASE 5

IPROC5

```

MVC    OPCODE,MOTWORK+1  SET OPCODE FIELD
MVC    OPERAND(7),MOTWORK+6 SET OPERAND FIELD
MVI    LENGTH,X'01'      SET INST TO 1 BYTE
CLI    CONCAT,C' '       IS NO CONCAT CHAR
BER    R14              RETURN IF YES
MVC    OPERAND(4),=C'BC,A' SET OPERAND FIELD
MVI    LENGTH,X'02'      SET INST LNGLTH TO 2 BYTES
CLI    CONCAT,C'C'       IS CONCAT CHAR A 'C'
BER    R14              RETURN IF EQUALS
MVC    OPERAND(4),=C'DE,A' SET OPERAND FIELD
CLI    CONCAT,C'E'       IS CONCAT CHAR A 'E'
BER    R14              RETURN IF EQUALS
B      IEHRTN          BRANCH TO INST ERROR HANDLING ROUT

```

5500 INSTRUCTION PROCESSOR PHASE 6

```

IPROC6  MVC  OPCODE,MOTWORK+1      SET OPCODE FIELD
        MVC  OPERAND(7),MOTWORK+6  SET OPERAND FIELD
        MVI  LENGTH,X'01'         SET LNPTH OF INST TO 1 BYTE
        CLI  CONCAT,C' '         IS NO CONCAT CHAR
        BER  R14                  RETURN IF EQUALS
        MVC  OPERAND(5),=C'BC,BC'  SET OPERAND FIELD
        MVI  LENGTH,X'02'         SET LNPTH OF INST TO 2 BYTES
        CLI  CONCAT,C'C'         IS CONCAT CHAR A 'C'
        BER  R14                  RETURN IF EQUALS
        MVC  OPERAND(5),=C'BC,DE'  SET OPERAND FIELD
        CLI  CONCAT,C'D'         IS CONCAT CHAR A 'D'
        BER  R14                  RETURN IF EQUALS
        MVC  OPERAND(5),=C'BC,HL'  SET OPERAND FIELD
        CLI  CONCAT,C'B'         IS CONCAT CHAR A 'B'
        BER  R14                  RETURN IF EQUALS
        MVC  OPERAND(5),=C'DE,BC'  SET OPERAND FIELD
        CLI  CONCAT,C'E'         IS CONCAT CHAR A 'E'
        BER  R14                  RETURN IF EQUALS
        MVC  OPERAND(5),=C'DE,DE'  SET OPERAND FIELD
        CLI  CONCAT,C'H'         IS CONCAT CHAR A 'H'
        BER  R14                  RETURN IF EQUALS
        MVC  OPERAND(5),=C'HL,BC'  SET OPERAND FIELD
        CLI  CONCAT,C'L'         IS CONCAT CHAR A 'L'
        BER  R14                  RETURN IF EQUALS
        MVC  OPERAND(5),=C'HL,DE'  SET OPERAND FIELD
        CLI  CONCAT,C'X'         IS CONCAT CHAR A 'X'
        BER  R14                  RETURN IF EQUALS
        B    IEHRTN              BRANCH TO INST ERROR HANDLING ROUT

```

5500 INSTRUCTION PROCESSOR PHASE 7

```

IPROC7  MVI  LENGTH,X'02'         SET INST LENGTH TO 2
        CLI  CONCAT,C' '         IS NO CONCAT CHAR
        BNE  IPROC7PR            BRANCH IF NOT
        MVC  OPCODE,MOTWORK+1    SET OPCODE FIELD
        MVC  OPERAND(2),MOTWORK+6 SET OPERAND FIELD
        MVI  IPROCWPK,X'01'      SET LNPTH OF STR TO 1
        IC   RO,1(R0,R1)         STORE DATA BYTE OF INST ...
        STC  RO,IPROCWPK+1       ... INTO WORK AREA
        ST   R1,REG1             SAVE REG. 1
        LA   R1,IPROCWPK         POINT TO INPUT STRNG AREA
        LA   R2,WORKAREA         POINT TO OUTPUT STRNG AREA
        ST   R14,REG14          SAVE RETURN ADDR
        BAL  R14,OUTCHAP        BRANCH TO CONVERT ROUTINE
        L    R1,REG1             RESTORE REG. 1
        L    R14,REG14          RESTORE REG. 14
        MVC  OPERAND+2(3),WORKAREA+1 SET OPERAND FIELD
        CLI  OPERAND+2,C'0'      IS THE 1ST OPCODE BYTE A '0'
        PFR  R14                 RETURN IF YES
        MVI  OPERAND+2,C'0'      SET '0' TO THE 1ST BYTE OF OPND FLD
        MVC  OPERAND+3(3),WORKAREA+1 REMOVE THE REMAINDER BYTES

```


	BR	R14	RETURN
IPROC7PR	MVI	OPCODE,C'D'	SET THE 1ST OPCODE BYTE TO 'D'
	MVC	OPCODE+1(4),MOTWORK+1	SET THE REMAINDER BYTES OF OPCODE
	MVC	OPERAND(3),=C'BC,'	SET OPERAND FIELD
	MVI	LENGTH,X'03'	SET INSTR LGTH TO 3 BYTES
	CLI	CONCAT,C'B'	IS CONCAT CHAR A 'B'
	BE	IPROC7NX	BRANCH IF YES
	MVC	OPERAND(3),=C'DF,'	SET OPERAND FIELD
	CLI	CONCAT,C'D'	IS CONCAT CHAR A 'D'
	BE	IPROC7NX	BRANCH IF YES
	MVC	OPERAND(3),=C'HL,'	SET OPERAND FIELD
	CLI	CONCAT,C'H'	IS CONCAT CHAR A 'H'
	BE	IPROC7NX	BRANCH IF YES
	P	IEHPTN	BRANCH TO INST ERROR HANDLING ROUT
IPROC7NX	MVI	IPROCWRK,X'01'	SET LGTH OF STR TO 1 BYTE
	IC	RO,1(RO,R1)	STORE A DATA BYTE OF INST
	STC	PO,IPROCWRK+1	... INTO THE 2ND BYTE OF STRNG
	ST	R1,REG1	SAVE REG. 1
	LA	R1,IPROCWRK	POINT TO INPUT STR AREA
	LA	R2,WORKAREA	POINT TO OUTPUT WORK AREA
	ST	R14,REG14	SAVE RETURN ADDR
	FAL	R14,OCTCHAR	BRANCH TO CONVERT ROUTINE
	L	R1,REG1	RESTORE REG.1
	L	R14,REG14	RESTORE RETURN ADDR
	MVC	OPERAND+3(3),WORKAREA+1	SET OPERAND FIELD
	CLI	OPERAND+3,C'0'	IS THE 1ST OPCODE BYTE A '0'
	BER	R14	RETURN IF YES
	MVI	OPERAND+3,C'0'	SET THE 1ST OPCODE BYTE TO '0'
	MVC	OPERAND+4(3),WORKAREA+1	REMOVE THE REMAINDER BYTES
	BR	R14	RETURN

 5500 INSTRUCTION PROCESSOR PHASE 8

IPROC8	MVC	OPCODE,MOTWORK+1	SET OPCODE FIELD
	MVI	LENGTH,X'01'	SET INSTR LENGTH TO 1 BYTE
	CLI	CONCAT,C' '	IS NO CONCAT CHAR
	BER	R14	RETURN IF YES
	MVC	OPCODE(3),=C'EUR'	SET NEW OPCODE
	MVI	LENGTH,X'02'	SET INSTR LGTH TO 2 BYTES
	CLI	CONCAT,C'C'	IS CONCAT CHAR A 'C'
	BER	R14	RETURN IF YES
	CLI	CONCAT,C'B'	IS CONCAT CHAR A 'B'
	BNE	IEHPTN	BRANCH TO INST ERROR ROUT IF NOT
	MVC	OPCODE(4),=C'EJMP'	SET NEW OPCODE
	MVI	LENGTH,X'04'	SET INSTR LENGTH TO 4 BYTES
	LA	R2,EPT	POINT TO ENTRY POINT TABLE
IPROCPCP	CLC	1(2,R1),0(R2)	SEARCH ENTRY POINT TABLE ...
	MVC	OPERAND(8),2(R2)	... FOR ENTRY NAME
	BER	R14	RETURN IF FOUND
	LA	R2,10(R0,R2)	BUMP TO NEXT ENTRY
	C	R2,=A(EPTEND)	IS END OF TABLE REACHED

```

BNE   IPROC8CP          BRANCH IF NOT
IC    R0,2(R0,R1)      STORE MSB ADDR BYTE ...
STC   R0,HALF          ... INTO THE 1ST WORK AREA BYTE
IC    R0,1(R0,R1)      STORE LSB ADDR BYTE ...
STC   R0,HALF+1        ... INTO THE 2ND WORK AREA BYTE
LA    R2,OPERAND+5     POINT TO THE 6TH OPERAND BYTE
LH    R5,HALF          LOAD MSB LSB BYTE INTO WORK REG
B     OCTADDR+4        BRANCH TO EXTRACT ROUTINE

```

5500 INSTRUCTION PROCESSOR PHASE 9

```

IPROC9  MVC   OPCODE,MOTWORK+1    SET OPCODE FIELD
        MVC   OPERAND(2),MOTWORK+6 SET OPERAND FIELD
        MVI   LENGTH,X'01'        SET INST LNTH TO 1 BYTE
        CLI   CONCAT,C' '        IS NO CONCAT CHAR
        BER   R14                  RETURN IF YES
        MVC   OPERAND(2),=C'BC'    MODIFIED OPERAND FLD
        MVI   LENGTH,X'02'        SET INST LENGTH TO 2 BYTES
        CLI   CONCAT,C'C'        IS CONCAT CHAR A 'C'
        BER   R14                  RETURN IF EQUALS
        MVC   OPERAND(2),=C'DE'    SET OPERAND FIELD
        CLI   CONCAT,C'E'        IS CONCAT CHAR A 'E'
        BER   R14                  RETURN IF EQUALS
        MVC   OPERAND(2),=C'XA'    SET OPERAND FIELD
        CLI   CONCAT,C'A'        IS CONCAT CHAR A 'A'
        BER   R14                  RETURN IF EQUALS
        B     IEHRTN              BRANCH TO INST ERROR HANDLING ROUT

```

5500 INSTRUCTION PROCESSOR PHASE 10

```

IPROC10 MVC  OPCODE,MOTWORK+1    SET OPCODE FIELD
        MVI  LENGTH,X'01'        SET INST LNTH TO 1 BYTE
        CLI  CONCAT,C' '        IS NO CONCAT CHAR
        BER  R14                  RETURN IF YES
        MVC  OPCODE(4),=C'DFAC'   SET OPCODE FIELD
        MVI  LENGTH,X'02'        SET LENGTH TO 2 BYTES
        CLI  CONCAT,C'B'        IS CONCAT CHAR A 'B'
        BER  R14                  RETURN IF EQUALS
        MVC  OPCODE(4),=C'DFSB'   SET OPCODE FIELD
        CLI  CONCAT,C'C'        IS CONCAT CHAR A 'C'
        BER  R14                  RETURN IF EQUALS
        B    IEHRTN              BRANCH TO INST ERROR HANDLING ROUT

```

5500 INSTRUCTION PROCESSOR PHASE 11

```

IPROC11 MVC  OPCODE,MOTWORK+1    SET OPCODE FIELD
        MVI  LENGTH,X'01'        SET INST LENGTH
        CLI  CONCAT,C' '        IS NO CONCAT CHAR
        BER  R14                  RETURN IF YES
        MVC  OPCODE(4),=C'BFSP'   SET OPCODE FLD
        MVI  LENGTH,X'02'        SET INST LENGTH

```

```

CLI   CONCAT,C'B'      IS CONCAT CHAR A 'B'
BER   R14              RETURN IF EQUALS
B     IFHRTN           BRANCH TO INST ERROR HANDLING ROUT

```

5500 INSTRUCTION PROCESSOR PHASE 12

```

IPROCC  MVC   OPCODE,MOTWORK+1  SET OPCODE FIELD
        MVI   LENGTH,X'01'     SET INST LENGTH TO 1 BYTE
        CLI   CONCAT,C' '      IS NO CONCAT CHAR
        BER   R14              RETURN IF YES
        MVI   OPCODE+3,C'L'     REPLACE THE 4TH BYTE OF OPCODE FLD
        MVI   LENGTH,X'02'     SET INST LENGTH TO 2 BYTES
        CLI   CONCAT,C'B'      IS CONCAT CHAR A 'B'
        PER   R14              RETURN IF EQUALS
        B     IFHRTN           BRANCH TO INST ERROR HANDLING ROUT

```

TRANSLATE LOCATION COUNTER TO MSB LSB FORM

```

OCTBASE LH   P5,LOCN          POINT TO LOCATION COUNTER
        LH   R6,=H'2'        LOAD NBR OF TIMES TO BE PERFORMED
CONTX   LH   R7,=H'2'        LOAD NBR OF DIGITS-1 TO EXTRACT/TIME
CONTY   STC   R5,0(R0,R2)    STORE ...
        NI   0(R2),X'07'     ... AND XLATE TO ...
        OI   0(R2),X'F0'     ... A NUMERIC DIGIT
        SRL  R5,3            SHIFT RIGHT 3 BITS
        BCTR P2,R0           UPDATE OUTPUT STRING POINTER
        BCT  R7,CONTY       CHECK INNER LOOP
        STC   R5,0(P0,R2)    STORE ...
        NI   0(R2),X'03'     ... AND XLATE TO ...
        OI   0(R2),X'F0'     ... A NUMERIC DIGIT
        SPL  P5,2           SHIFT RIGHT 2 BITS
        SH   P2,=H'2'       UPDATE OUTPUT STRING POINTER
        BCT  P6,CONTX       CHECK OUTER LOOP
        BR   R14            RETURN

```

TRANSLATE LOCATION COUNTER TO CHARACTER FORM

```

OCTADDP LH   R5,LOCN          POINT TO LOCATION COUNTER
        LH   R6,=H'5'        NUMBER OF DIGITS TO EXTRACT-1
AGAIN   STC   R5,0(P0,P2)    STORE INTO OUTPUT STR BYTE
        NI   0(P2),X'07'     3 LSB BITS ARE REQD
        OI   0(P2),X'F0'     CHANGE IT TO NUMERIC DIGIT
        SRL  R5,3            ROTATE RIGHT 3 BITS
        BCTR P2,R0           UPDATE OUTPUT STR POINTER
        BCT  P6,AGAIN       DO UNTIL ...
        STC   R5,0(P0,R2)    STORE INTO OUTPUT STR BYTE
        NI   0(P2),X'01'     THE 1 LSB BIT IS REQD
        OI   0(P2),X'F0'     CHANGE IT TO NUMERIC DIGIT
        BR   R14            RETURN

```

TRANSLATE OCTAL CODE TO EPICIC CHARACTER FORM

```

*
OCTCHAR SR R0,R0 RESET WOPK REG.
IC R0,0(P0,R1) GET LENTH OF INPUT STR
LR R6,R0 CALCULATE ...
AR R6,R0 ... LENGTH ...
AR R6,R0 ... OF OUTPUT STR AND SAVE IT ...
STC R6,0(R0,R2) ... IN THE FIRST BYTE OF OUTPUT STR
LR R6,R0 SET NO. OF TIMES TO BE DONE
LA R1,1(P0,R1) POINT TO THE FIRST DATA BYTE
LA R2,1(P0,R2) ... OF INPUT AND OUTPUT STRING
LOOP IC R0,0(F0,R1) GET A DATA BYTE FROM INPUT STR
STC R0,HALF+1 ... AND PERFORM ...
LH R5,HALF ... BIT MANIPULATION ON IT
STC R5,2(R0,R2) STORE INTO OUTPUT STR
NI 2(R2),X'07' 3 LSB BITS ARE ONLY REQD
OI 2(P2),X'F0' CHANGE TO A NUMERIC DIGIT
SRL R5,3 SHIFT RIGHT 3 BITS
STC R5,1(R0,R2) STORE INTO OUTPUT STR
NI 1(R2),X'07' 3 LSB BITS ARE ONLY REQD
OI 1(P2),X'F0' CHANGE TO A NUMERIC DIGIT
SRL R5,3 SHIFT RIGHT 3 BITS
STC R5,0(R0,R2) STORE INTO OUTPUT STR
NI 0(R2),X'03' 2 LSB BITS ARE ONLY REQD
OI 0(R2),X'F0' CHANGE TO A NUMERIC DIGIT
LA R1,1(R0,R1) BUMP TO NEXT BYTE OF INPUT STR
LA R2,3(R0,R2) BUMP TO NEXT 3 BYTES OF OUTPUT STR
BCI R6,LOOP DO UNTIL LAST BYTE IN STR PROCESSED.
BR R14 THEN RETURN

```

INSTRUCTION ERROR HANDLING ROUTINE

```

*
*
*
IEHSTN CNTRL PRINTER,SP,3 SPACING 3 LINES
MVC PRNTAREA(37),=C'5500 DISASSEMBLY EXECUTION TERMINATED'
MVC PRNTAREA+38(32),=C'DUE TO ILLEGAL INSTRUCTION FOUND'
B EOJX BRANCH TO EXIT

```

END OF PROCESSING

```

*
*
*
EOJ GETIME , GET FINISH TIME
ST R1,TIMEFNESH ... FOR PRINT AT END
CNTRL PRINTER,SP,3 SPACING 3 LINES
MVC PRNTAREA(35),=C'5500 DISASSEMBLY EXECUTION COMPLETE'
MVC PRNTAREA+36(9),PROGNAME MOVE PROG NAME
MVC PRNTAREA+45(5),=C'START' CONSTANTS
MVC PRNTAREA+51(10),=X'40212020612020612020' EDIT MASK ...
ED PRNTAREA+51(10),TIMESTRT ... FOR START TIME
MVC PRNTAREA+62(6),=C'FINISH' CONSTANTS
MVC PRNTAREA+69(10),=X'40212020612020612020' EDIT MASK ...
ED PRNTAREA+69(10),TIMEFNESH ... FOR FINISH TIME
PUT PRINTER,PRNTAREA WRITE A PRINT RECORD
MVC PRNTAREA,PRNTAREA-1 CLEAR PRINT AREA

```

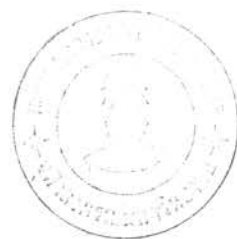
```

MVC PRNTAREA(23),=C'END OF 5500 DISASSEMBLY' LAST LINE MSG.
PUT PRINTER,PRNTAREA WRITE A PRINT RECORD
CLOSE FMTFILE CLOSE /FMT FILE
CLOSE TXTFILE ..... /TXT FILE
CLOSE PRFILE ..... /PPT FILE
CLOSE PRINTER ..... PRINTER FILE
EOJ TERMINATED
    
```

I/O FILE DEFINITIONS & DATA AREAS

```

R0 EQU 0 REGISTER 0
R1 EQU 1 REGISTER 1
R2 EQU 2 REGISTER 2
R3 EQU 3 REGISTER 3
R4 EQU 4 REGISTER 4
R5 EQU 5 REGISTER 5
R6 EQU 6 REGISTER 6
R7 EQU 7 REGISTER 7
R8 EQU 8 REGISTER 8
R9 EQU 9 REGISTER 9
P10 EQU 10 REGISTER 10
R11 EQU 11 REGISTER 11
R12 EQU 12 REGISTER 12
R13 EQU 13 REGISTER 13
P14 EQU 14 REGISTER 14
R15 EQU 15 REGISTER 15
FMTFILE DTFMT BLKSIZE=256, BLOCK SIZE
DEVADDR=SYS010, DEVICE ADDRESS
EOFADDR=EOJ, EOF ROUTINE
FILABL=NO, FILE LABEL
ICAREA1=FMTAREA1, ADDR OF I/O AREA 1
ICAREA2=FMTAREA2, ADDR OF I/O AREA 2
ERROPT=SKIP, ERROR OPTION
MODNAME=MODTAPF, LOGIC MODULE NAME
RECFORM=FIXUNB, RECORD FORMAT
REWIND=UNLOAD, REWIND OPTION
TYPEFILE=INPUT, FILE TYPE
TPMARK=YES, TAPE MARK REQD
WORKA=YES, WORK AREA REQD
FMTAREA1 DS CL256 I/O AREA 1 FOR /FMT
FMTAREA2 DS CL256 I/O AREA 2 FOR /FMT
TXTFILE DTFMT BLKSIZE=80, BLOCK SIZE
DEVADDR=SYS011, DEVICE ADDRESS
FILABL=NO, FILE LABEL
ICAREA1=TXAREA1, ADDR OF I/O AREA 1
ICAREA2=TXAREA2, ADDR OF I/O AREA 2
ERREXT=YES, ERROR EXTENSION
ERROPT=IGNORE, ERROR OPTION
MODNAME=MODTAPF, LOGIC MODULE NAME
RECFORM=FTXUNB, RECORD FORMAT
REWIND=UNLOAD, REWIND OPTION
    
```



X
X
Y
Y
X
X
X
X
X
X
X
Y
X
X
Y
X
X
X
Y
Y

		TYPEFLE=OUTPUT,	FILE TYPE
		TPMARK=YES,	TAPE MARK REQD
		WORKA=YES	WORK AREA REQD
TXTAREA1	DS	CL80	I/O AREA 1 FOR /TXT
TXTAREA2	DS	CL80	I/O AREA 2 FOR /TXT
PPTFILE	DTEMT	BLKSIZE=122,	BLOCK SIZE
		DEVADDR=SYS012,	DEVICE ADDRESS
		FILABL=NO,	FILE LABEL
		ICAREA1=PPTAREA1,	ADDR OF I/O AREA 1
		ICAREA2=PPTAREA2,	ADDR OF I/O AREA 2
		EPFEXT=YES,	ERROR EXTENSION
		EPFOPT=IGNORE,	ERROR OPTION
		MODNAME=MODTAPE,	LOGIC MODULE NAME
		RECFORM=FIXUNB,	RECORD FORMAT
		REWIND=UNLOAD,	REWIND OPTION
		TYPEFLE=OUTPUT,	FILE TYPE
		TPMARK=YES,	TAPE MARK REQD
		WORKA=YES	WORK AREA REQD
PRTAREA1	DS	CL132	I/O AREA 1 FOR /PRT
PRTAREA2	DS	CL132	I/O AREA 2 FOR /PRT
MODTAPE	MTMOD	RECFORM=FIXUNB,	RECORD FORMAT
		ERROPT=YES,	ERROR OPTION
		WORKA=YES	WORK AREA REQD
PRINTER	DTFPP	BLKSIZE=132,	BLOCK SIZE
		DEVICE=3203,	DEVICE MODEL
		DEVADDR=SYS1ST,	DEVICE ADDRESS
		RECFORM=FIXUNB,	RECORD FORMAT
		ICAREA1=LSTAREA1,	ADDR OF I/O AREA 1
		ICAREA2=LSTAREA2,	ADDR OF I/O AREA 2
		MODNAME=MODPRNT,	LOGIC MODULE NAME
		CONTPOL=YES,	MACRO 'CNTRL' REQD
		WORKA=YES	WORK AREA REQD
LSTAREA1	DS	CL132	I/O AREA 1 FOR PRINTER
LSTAREA2	DS	CL132	I/O AREA 2 FOR PRINTER
MODPRNT	PRMOD	CONTROL=YES,	MACRO 'CNTRL' REQD
		ICAREA2=YES,	SECOND I/O AREA REQD
		DEVICE=3203,	DEVICE MODEL
		WORKA=YES	WORK AREA REQD
REG1	DS	F	REG. 1 SAVE AREA
REG2	DS	F	REG. 2 SAVE AREA
REG14	DS	F	REG. 14 SAVE AREA
ACTINST	DS	F	ACTIVE INSTRUCTION ADDR
ENDINST	DS	F	INSTRUCTION ENDING ADDR
TIMESTRT	DS	F	START TIME
TIMEFNH	DS	F	FINISH TIME
HALF	DS	H	WORK AREA FOR TRANSLATION
ENR	DS	H	PROGRAM ENTRY POINT ADDR
LOCN	DS	H	LOCATION COUNTER
CONCAT	DS	C	CONCATENATE CHAR
LENGTH	DS	X	LENGTH OF INPUT RECD STRING
MAXLPP	DS	CL?	FORMATION AREA

PROGNAME DS	CL8	PROGRAM NAME
TITLE DS	CL62	PROGRAM TITLE
MOTWORK DS	CL13	MACHINE OPCODE TABLE WORK AREA
IPROCWK DS	CL16	INSTRUCTION PROCESSOR WORK AREA
PAGE DC	PL2'0'	PAGE NUMBER
STMT DC	PL3'0'	STATEMENT NUMBER
LINELMT DC	PL2'50'	MAXIMUM LINE PRINT/PAGE
LINECNT DC	PL2'0'	LINE COUNT
WORKAREA DS	CL256	GENERAL WORK AREA
TAPEWORK DS	CL256	WORK AREA FOR /FMT RECORD
	DC	SPACE
PRNTAREA DC	CL132' '	WORK AREA FOR PRINTER
	DC	SPACE
PROGTXT DS	CL80	PROGRAM TEXT AREA
LAPFL DC	CL8' '	LABEL FIELD
	DC	
OPCODE DC	CL5' '	OPERATION CODE FIELD
	DC	
OPERAND DC	CL56' '	OPERAND FIELD
	DC	
IDFNT DC	CL8' '	IDENTIFICATION FIELD

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* DIRECTIVE OPCODE TABLE (DOT)
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	DS	OF	ALIGN TO FULLWORD
DOT	DC	C'SET ' ,AL3(PISET)	5500 'SET' DIRECTIVE
	DC	C'INC ' ,AL3(PIINC)	5500 'INCLUDE' DIRECTIVE
	DC	C'ENT ' ,AL3(PIENT)	5500 'ENTRY' DIRECTIVE (DUMMY)
	DC	C'END ' ,AL3(PIEND)	5500 'END' DIRECTIVE
DOTEND	EQU	*	

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* ENTRY POINT TABLE (EPT)
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EPT	DC	B'00000000',B'00000010',C'BOOT\$	'
	DC	B'00000011',B'00000010',C'PUNX\$	'
	DC	B'00000110',B'00000010',C'LOADX\$	'
	DC	B'00100111',B'00000010',C'GETNCH	'
	DC	B'00101010',B'00000010',C'DP\$	'
	DC	B'00101101',B'00000010',C'DW\$	'
	DC	B'00110000',B'00000010',C'DSKWAT	'
	DC	B'01111011',B'00000010',C'DWNVS	'
	DC	B'00011011',B'00000010',C'CSS	'
	DC	B'00011110',B'00000010',C'TP\$	'
	DC	B'00100001',B'00000010',C'SETIS	'
	DC	B'00100100',B'00000010',C'CLRIS	'
	DC	B'00110011',B'00000010',C'PREPS	'
	DC	B'00110110',B'00000010',C'OPENS	'
	DC	B'00111001',B'00000010',C'LGADS	'
	DC	B'00111100',B'00000010',C'RUN\$	'
	DC	B'00111111',B'00000010',C'CLOSE\$	'
	DC	B'01000010',B'00000010',C'CHOPS	'


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DC      B'01000101',B'00000010',C'PROTES'
DC      B'01001000',B'00000010',C'POSIT$'
DC      B'01001011',B'00000010',C'READS'
DC      B'01001110',B'00000010',C'WRITES'
DC      B'01010001',B'00000010',C'GETS'
DC      B'01010100',B'00000010',C'GETR$'
DC      B'01010111',B'00000010',C'PUTS'
DC      B'01011010',B'00000010',C'PUTR$'
DC      B'01011101',B'00000010',C'BSP$'
DC      B'00001001',B'00000010',C'INCHL'
DC      B'00001011',B'00000010',C'INCHL+2'
DC      B'00010010',B'00000010',C'DECHL'
DC      B'00010100',B'00000010',C'DECHL+2'
DC      B'01100000',B'00000010',C'ERROR$'
DC      B'01100011',B'00000010',C'BLKTRF'
DC      B'01100110',B'00000010',C'TRAPS'
DC      B'01101001',B'00000010',C'EXITS'
DC      B'01111000',B'00000010',C'WAITS'
DC      B'00000000',B'00001111',C'DDSFNC'
DC      B'01101100',B'00000010',C'DEBUG$'
DC      B'01101111',B'00000010',C'KEYINS'
DC      B'01110010',B'00000010',C'DSPLY$'
DC      B'00000000',B'00010000',C'TPBOF$'
DC      B'00000101',B'00010000',C'TPEOF$'
DC      B'00001010',B'00010000',C'TRW$'
DC      B'00001111',B'00010000',C'TBSP$'
DC      B'00010100',B'00010000',C'TWBLK$'
DC      B'00011001',B'00010000',C'TR$'
DC      B'00011100',B'00010000',C'TREAD$'
DC      B'00011111',B'00010000',C'TW$'
DC      B'00100010',B'00010000',C'TWRITE$'
DC      B'00100101',B'00010000',C'TEMR$'
DC      B'00101000',B'00010000',C'TEMW$'
DC      B'00101011',B'00010000',C'TTPAP$'
DC      B'00101110',B'00010000',C'TWAITS'
DC      B'00110001',B'00010000',C'TCHK$'
DC      B'01110101',B'00000010',C'CMDINT'
DC      B'00000000',B'00010111',C'DDS$'
DC      B'00000011',B'00010111',C'NXTCMD'
DC      B'00000110',B'00010111',C'CMDAGN'
DC      B'00001001',B'00010111',C'GETSYM'
DC      B'00001100',B'00010111',C'GETCH'
DC      B'00001111',B'00010111',C'GETAEN'
DC      B'00010010',B'00010111',C'PUTAEN'
DC      B'00010101',B'00010111',C'GETLEF'
DC      B'00011000',B'00010111',C'PUTCH'
DC      B'00011011',B'00010111',C'PUTCHX'
DC      B'00011110',B'00010111',C'PUTNAM'
DC      B'00100001',B'00010111',C'MOVSYM'
DC      B'00100100',B'00010111',C'GETDBA'
DC      B'00100111',B'00010111',C'SCANES'

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DC      B'00101010',B'00010111',C'TCWAIT
DC      B'00101101',B'00010111',C'INPTR
DC      B'00000000',B'00010011',C'MCRS

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EPTEND

EQU *

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PSEUDO OP CODE TABLE (POT)

POT

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DC      B'00010010',C'A'      FOR REGISTER A
DC      B'01001001',C'B'      FOR REGISTER B
DC      B'00110010',C'C'      FOR REGISTER C
DC      B'01001011',C'D'      FOR REGISTER D
DC      B'01111100',C'E'      FOR REGISTER E
DC      B'01001101',C'H'      FOR REGISTER H
DC      B'01111110',C'L'      FOR REGISTER L
DC      B'01001111',C'X'      FOR REGISTER X

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POTEND

EQU *

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MACHINE OP CODE TABLE (MOT)

MOT

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DS      OF      ALIGN TO FULLWORD
DC      B'00001100',C'ACA'  ',C'VVV      ',AL3(IPROC1)
DC      B'10001000',C'ACA2  ',C'          ',AL3(IPROC2)
DC      B'10001001',C'ACR2  ',C'          ',AL3(IPROC2)
DC      B'10001010',C'ACC2  ',C'          ',AL3(IPROC2)
DC      B'10001011',C'ACD2  ',C'          ',AL3(IPROC2)
DC      B'10001100',C'ACF2  ',C'          ',AL3(IPROC2)
DC      B'10001101',C'ACH2  ',C'          ',AL3(IPROC2)
DC      B'10001110',C'ACL2  ',C'          ',AL3(IPROC2)
DC      B'10001111',C'ACM2  ',C'          ',AL3(IPROC2)
DC      B'00000100',C'ADA'  ',C'VVV      ',AL3(IPROC1)
DC      B'10000000',C'ADA2  ',C'          ',AL3(IPROC2)
DC      B'10000001',C'ADR2  ',C'          ',AL3(IPROC2)
DC      B'10000010',C'ADC2  ',C'          ',AL3(IPROC2)
DC      B'10000011',C'AD2  ',C'          ',AL3(IPROC2)
DC      B'10000100',C'ADE2  ',C'          ',AL3(IPROC2)
DC      B'10000101',C'ADH2  ',C'          ',AL3(IPROC2)
DC      B'10000110',C'ADL2  ',C'          ',AL3(IPROC2)
DC      B'10000111',C'ADM2  ',C'          ',AL3(IPROC2)
DC      B'00011000',C'ALPHA',C'          ',AL3(IPROC2)
DC      B'00100001',C'BCP'   ',C'          ',AL3(IPROC1)
DC      B'00010000',C'BETA'  ',C'          ',AL3(IPROC2)
DC      B'00001001',C'BFAC'  ',C'          ',AL3(IPROC2)
DC      B'00011001',C'BFSB'  ',C'          ',AL3(IPROC2)
DC      B'00111101',C'BFSL'  ',C'          ',AL3(IPROC2)
DC      B'00101010',C'BP'    ',C'          ',AL3(IPROC2)
DC      B'00111010',C'BPL2'  ',C'          ',AL3(IPROC2)
DC      B'00010001',C'BT'    ',C'          ',AL3(IPROC1)
DC      B'01000110',C'CALL'  ',C'LOC     ',AL3(IPROC3)
DC      B'00100010',C'CCSR'  ',C'          ',AL3(IPROC2)
DC      B'01000010',C'CFE'   ',C'LOC     ',AL3(IPROC3)
DC      B'01001010',C'CFE'   ',C'LOC     ',AL3(IPROC3)

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DC	B'01010010'	C'CFN	' ,C'LDC	' ,AL3(IPROC3)
DC	B'01011010'	C'CFP	' ,C'LDC	' ,AL3(IPROC3)
DC	B'01100010'	C'CTC	' ,C'LDC	' ,AL3(IPROC3)
DC	B'01101010'	C'CTF	' ,C'LDC	' ,AL3(IPROC3)
DC	B'01110010'	C'CTN	' ,C'LDC	' ,AL3(IPROC3)
DC	B'01111010'	C'CTP	' ,C'LDC	' ,AL3(IPROC3)
DC	B'00111100'	C'CPA	' ,C'VVV	' ,AL3(IPROC1)
DC	B'10111000'	C'CPA2	' ,C'	' ,AL3(IPROC2)
DC	B'10111001'	C'CPA2	' ,C'	' ,AL3(IPROC2)
DC	B'10111010'	C'CPA2	' ,C'	' ,AL3(IPROC2)
DC	B'10111011'	C'CPA2	' ,C'	' ,AL3(IPROC2)
DC	B'10111100'	C'CPA2	' ,C'	' ,AL3(IPROC2)
DC	B'10111101'	C'CPA2	' ,C'	' ,AL3(IPROC2)
DC	B'10111110'	C'CPA2	' ,C'	' ,AL3(IPROC2)
DC	B'10111111'	C'CPA2	' ,C'	' ,AL3(IPROC2)
DC	B'00011101'	C'DECP	' ,C'HL	' ,AL3(IPROC4)
DC	B'00011111'	C'DECP	' ,C'HL,A	' ,AL3(IPROC5)
DC	B'00100000'	C'DI	' ,C'	' ,AL3(IPROC2)
DC	B'00100111'	C'DL	' ,C'DF,HL	' ,AL3(IPROC6)
DC	B'00101111'	C'DL	' ,C'HL,HL	' ,AL3(IPROC6)
DC	B'00010111'	C'DS	' ,C'DE,HL	' ,AL3(IPROC6)
DC	B'00101000'	C'EI	' ,C'	' ,AL3(IPROC8)
DC	B'01010001'	C'EX2	' ,C'ADR	' ,AL3(IPROC2)
DC	B'01101001'	C'EX	' ,C'BEEP	' ,AL3(IPROC2)
DC	B'01110111'	C'EX	' ,C'BSP	' ,AL3(IPROC2)
DC	B'01101011'	C'EX	' ,C'CLICK	' ,AL3(IPROC2)
DC	B'01011001'	C'EX2	' ,C'COM1	' ,AL3(IPROC2)
DC	B'01011011'	C'EX2	' ,C'COM2	' ,AL3(IPROC2)
DC	B'01011101'	C'EX2	' ,C'COM3	' ,AL3(IPROC2)
DC	B'01011111'	C'EX2	' ,C'COM4	' ,AL3(IPROC2)
DC	B'01010101'	C'EX	' ,C'DATA	' ,AL3(IPROC2)
DC	B'01101101'	C'EX	' ,C'DECK1	' ,AL3(IPROC2)
DC	B'01101111'	C'EX	' ,C'DECK2	' ,AL3(IPROC2)
DC	B'01110001'	C'EX	' ,C'PBK	' ,AL3(IPROC2)
DC	B'01111101'	C'EX	' ,C'PFIND	' ,AL3(IPROC2)
DC	B'01111011'	C'EX	' ,C'SB	' ,AL3(IPROC2)
DC	B'01111001'	C'EX	' ,C'SF	' ,AL3(IPROC2)
DC	B'01010011'	C'EX	' ,C'STATUS	' ,AL3(IPROC2)
DC	B'01111111'	C'EX	' ,C'TSTOP	' ,AL3(IPROC2)
DC	B'01110011'	C'EX	' ,C'WBK	' ,AL3(IPROC2)
DC	B'01010111'	C'EX2	' ,C'WRITE	' ,AL3(IPROC2)
DC	B'11111111'	C'HALT	' ,C'	' ,AL3(IPROC2)
DC	B'01000001'	C'IN2	' ,C'	' ,AL3(IPROC2)
DC	B'00001101'	C'INCP	' ,C'HL	' ,AL3(IPROC4)
DC	B'00001111'	C'INCP	' ,C'HL,A	' ,AL3(IPROC5)
DC	B'01000000'	C'JFC	' ,C'LDC	' ,AL3(IPROC3)
DC	B'01001000'	C'JFE	' ,C'LDC	' ,AL3(IPROC3)
DC	B'01010000'	C'JFN	' ,C'LDC	' ,AL3(IPROC3)
DC	B'01011000'	C'JFP	' ,C'LDC	' ,AL3(IPROC3)
DC	B'01000100'	C'JMP	' ,C'LDC	' ,AL3(IPROC3)
DC	B'01100000'	C'JTC	' ,C'LDC	' ,AL3(IPROC3)

DC	B'01101000',C'JTF	,C'LDC	,AL3(IPROC3)
DC	B'01110000',C'JTN	,C'LDC	,AL3(IPROC3)
DC	B'01111000',C'JTP	,C'LDC	,AL3(IPROC3)
DC	B'00000110',C'LA	,C'VVV	,AL3(IPROC1)
DC	B'11000001',C'LAB	,C'	,AL3(IPROC2)
DC	B'11000010',C'LAC	,C'	,AL3(IPROC2)
DC	B'11000011',C'LAD	,C'	,AL3(IPROC2)
DC	B'11000100',C'LAE	,C'	,AL3(IPROC2)
DC	B'11000101',C'LAH	,C'	,AL3(IPROC2)
DC	B'11000110',C'LAL	,C'	,AL3(IPROC2)
DC	B'11000111',C'LAM	,C'HL	,AL3(IPROC9)
DC	B'00001110',C'LB	,C'VVV	,AL3(IPROC1)
DC	B'11001000',C'LBA	,C'	,AL3(IPROC2)
DC	B'11001001',C'LBB	,C'	,AL3(IPROC2)
DC	B'11001010',C'LBC	,C'	,AL3(IPROC2)
DC	B'11001011',C'LBD	,C'	,AL3(IPROC2)
DC	B'11001100',C'LBE	,C'	,AL3(IPROC2)
DC	B'11001101',C'LBF	,C'	,AL3(IPROC2)
DC	B'11001110',C'LBL	,C'	,AL3(IPROC2)
DC	B'11001111',C'LBM	,C'HL	,AL3(IPROC9)
DC	B'00010110',C'LC	,C'VVV	,AL3(IPROC1)
DC	B'11010000',C'LCA	,C'	,AL3(IPROC2)
DC	B'11010001',C'LCC	,C'	,AL3(IPROC2)
DC	B'11010010',C'LCC	,C'	,AL3(IPROC2)
DC	B'11010011',C'LCD	,C'	,AL3(IPROC2)
DC	B'11010100',C'LCE	,C'	,AL3(IPROC2)
DC	B'11010101',C'LCH	,C'	,AL3(IPROC2)
DC	B'11010110',C'LCL	,C'	,AL3(IPROC2)
DC	B'11010111',C'LCM	,C'HL	,AL3(IPROC9)
DC	B'00011110',C'LD	,C'VVV	,AL3(IPROC1)
DC	B'11011000',C'LDA	,C'	,AL3(IPROC2)
DC	B'11011001',C'LDB	,C'	,AL3(IPROC2)
DC	B'11011010',C'LDC	,C'	,AL3(IPROC2)
DC	B'11011011',C'LDD	,C'	,AL3(IPROC2)
DC	B'11011100',C'LDE	,C'	,AL3(IPROC2)
DC	B'11011101',C'LDE	,C'	,AL3(IPROC2)
DC	B'11011110',C'LDE	,C'	,AL3(IPROC2)
DC	B'11011111',C'LDM	,C'HL	,AL3(IPROC9)
DC	B'00100110',C'LE	,C'VVV	,AL3(IPROC1)
DC	B'11100000',C'LEA	,C'	,AL3(IPROC2)
DC	B'11100001',C'LEB	,C'	,AL3(IPROC2)
DC	B'11100010',C'LEC	,C'	,AL3(IPROC2)
DC	B'11100011',C'LED	,C'	,AL3(IPROC2)
DC	B'11100100',C'LEF	,C'	,AL3(IPROC2)
DC	B'11100101',C'LEG	,C'	,AL3(IPROC2)
DC	B'11100110',C'LEH	,C'	,AL3(IPROC2)
DC	B'11100111',C'LEI	,C'	,AL3(IPROC2)
DC	B'11100111',C'LEM	,C'HL	,AL3(IPROC9)
DC	B'00101110',C'LEH	,C'VVV	,AL3(IPROC1)
DC	B'11101000',C'LHA	,C'	,AL3(IPROC2)
DC	B'11101001',C'LHB	,C'	,AL3(IPROC2)
DC	B'11101010',C'LHC	,C'	,AL3(IPROC2)

DC	B'111101011',C'LHD	,C'	,AL3(IPROC2)
DC	B'111101100',C'LHF	,C'	,AL3(IPROC2)
DC	B'111101101',C'LHH	,C'	,AL3(IPROC2)
DC	B'111101110',C'LHL	,C'	,AL3(IPROC2)
DC	B'111101111',C'LHM	,C'HL	,AL3(IPROC2)
DC	B'001101110',C'LL	,C'VVV	,AL3(IPROC1)
DC	B'111100000',C'LLA	,C'	,AL3(IPROC2)
DC	B'111100001',C'LLB	,C'	,AL3(IPROC2)
DC	B'111100010',C'LLC	,C'	,AL3(IPROC2)
DC	B'111100011',C'LLD	,C'	,AL3(IPROC2)
DC	B'111101000',C'LLE	,C'	,AL3(IPROC2)
DC	B'111101001',C'LLH	,C'	,AL3(IPROC2)
DC	B'111101010',C'LLI	,C'	,AL3(IPROC2)
DC	B'111101011',C'LLM	,C'HL	,AL3(IPROC9)
DC	B'111110000',C'LMA	,C'HL	,AL3(IPROC9)
DC	B'111110001',C'LMB	,C'HL	,AL3(IPROC9)
DC	B'111110010',C'LMC	,C'HL	,AL3(IPROC9)
DC	B'111110011',C'LMD	,C'HL	,AL3(IPROC9)
DC	B'111111000',C'LME	,C'HL	,AL3(IPROC9)
DC	B'111111001',C'LMH	,C'HL	,AL3(IPROC9)
DC	B'111111010',C'LMJ	,C'HL	,AL3(IPROC9)
DC	B'001111110',C'LV	,C'VVV	,AL3(IPROC1)
DC	B'001001000',C'NDA	,C'VVV	,AL3(IPROC1)
DC	B'101000000',C'NDA@	,C'	,AL3(IPROC2)
DC	B'101000001',C'NDB@	,C'	,AL3(IPROC2)
DC	B'101000010',C'NDC@	,C'	,AL3(IPROC2)
DC	B'101000011',C'NDD@	,C'	,AL3(IPROC2)
DC	B'101001000',C'NDE@	,C'	,AL3(IPROC2)
DC	B'101001001',C'NDH@	,C'	,AL3(IPROC2)
DC	B'101001100',C'NDL@	,C'	,AL3(IPROC2)
DC	B'101001101',C'NDM@	,C'	,AL3(IPROC2)
DC	B'001001010',C'NDJ	,C'LOC	,AL3(IPROC3)
DC	B'110000000',C'NDP	,C'	,AL3(IPROC2)
DC	B'001101000',C'ORA	,C'VVV	,AL3(IPROC1)
DC	B'101100000',C'ORA@	,C'	,AL3(IPROC2)
DC	B'101100001',C'ORB@	,C'	,AL3(IPROC2)
DC	B'101100010',C'ORC@	,C'	,AL3(IPROC2)
DC	B'101100011',C'ORD@	,C'	,AL3(IPROC2)
DC	B'101101000',C'ORE@	,C'	,AL3(IPROC2)
DC	B'101101001',C'ORH@	,C'	,AL3(IPROC2)
DC	B'101101100',C'ORL@	,C'	,AL3(IPROC2)
DC	B'101101101',C'ORM@	,C'	,AL3(IPROC2)
DC	B'010110000',C'PJN	,C'	,AL3(IPROC2)
DC	B'010001010',C'PL	,C'A,LSB	,AL3(IPROC7)
DC	B'010001100',C'PL	,C'B,LSB	,AL3(IPROC7)
DC	B'010101000',C'PL	,C'C,LSB	,AL3(IPROC7)
DC	B'010101100',C'PL	,C'D,LSB	,AL3(IPROC7)
DC	B'011001000',C'PL	,C'E,LSB	,AL3(IPROC7)
DC	B'011001100',C'PL	,C'H,LSB	,AL3(IPROC7)
DC	B'011101000',C'PL	,C'L,LSB	,AL3(IPROC7)
DC	B'001100000',C'POD	,C'HL	,AL3(IPROC9)

DC	B'01000111	,C'PS	,C'A,LSB	,AL3(IPROC7)
DC	B'01001110	,C'PS	,C'P,LSB	,AL3(IPROC7)
DC	B'01010110	,C'PS	,C'C,LSB	,AL3(IPROC7)
DC	B'01011110	,C'PS	,C'D,LSB	,AL3(IPROC7)
DC	B'01100110	,C'PS	,C'E,LSB	,AL3(IPROC7)
DC	B'01101110	,C'PS	,C'H,LSB	,AL3(IPROC7)
DC	B'01110110	,C'PS	,C'L,LSB	,AL3(IPROC7)
DC	B'00111000	,C'PUSH	,C'HL	,AL3(IPROC9)
DC	B'00101001	,C'PUSH	,C'LOC	,AL3(IPROC3)
DC	B'00101101	,C'REGS	,C'	,AL3(IPROC0)
DC	B'00000111	,C'REY	,C'	,AL3(IPROC2)
DC	B'00000011	,C'REC	,C'	,AL3(IPROC2)
DC	B'00001011	,C'REE	,C'	,AL3(IPROC2)
DC	B'00010011	,C'REN	,C'	,AL3(IPROC2)
DC	B'00011011	,C'REP	,C'	,AL3(IPROC2)
DC	B'00100011	,C'RTC	,C'	,AL3(IPROC2)
DC	B'00101011	,C' RTE	,C'	,AL3(IPROC2)
DC	B'00110011	,C'RTN	,C'	,AL3(IPROC2)
DC	B'00111011	,C' RTP	,C'	,AL3(IPROC2)
DC	B'00011100	,C'SBA	,C'VVV	,AL3(IPROC1)
DC	B'10011000	,C'SPA	,C'	,AL3(IPROC2)
DC	B'10011001	,C'SPB	,C'	,AL3(IPROC2)
DC	B'10011010	,C'SPC	,C'	,AL3(IPROC2)
DC	B'10011011	,C'SPD	,C'	,AL3(IPROC2)
DC	B'10011100	,C'SPE	,C'	,AL3(IPROC2)
DC	B'10011101	,C'SPH	,C'	,AL3(IPROC2)
DC	B'10011110	,C'SPL	,C'	,AL3(IPROC2)
DC	B'10011111	,C'SPM	,C'	,AL3(IPROC2)
DC	B'00110111	,C'SC	,C'	,AL3(IPROC2)
DC	B'00000010	,C'SLC	,C'	,AL3(IPROC2)
DC	B'00001010	,C'SRC	,C'	,AL3(IPROC2)
DC	B'00011010	,C'SRE	,C'	,AL3(IPROC2)
DC	B'00110101	,C'STKS	,C'	,AL3(IPROC0)
DC	B'00111111	,C'STL	,C'	,AL3(IPROC2)
DC	B'00010100	,C'SUA	,C'VVV	,AL3(IPROC1)
DC	B'10010000	,C'SUA	,C'	,AL3(IPROC2)
DC	B'10010001	,C'SUB	,C'	,AL3(IPROC2)
DC	B'10010010	,C'SUC	,C'	,AL3(IPROC2)
DC	B'10010011	,C'SUD	,C'	,AL3(IPROC2)
DC	B'10010100	,C'SUE	,C'	,AL3(IPROC2)
DC	B'10010101	,C'SUH	,C'	,AL3(IPROC2)
DC	B'10010110	,C'SUL	,C'	,AL3(IPROC2)
DC	B'10010111	,C'SUM	,C'	,AL3(IPROC2)
DC	B'00101100	,C'XP	,C'VVV	,AL3(IPROC1)
DC	B'10101000	,C'XPA	,C'	,AL3(IPROC2)
DC	B'10101001	,C'XPB	,C'	,AL3(IPROC2)
DC	B'10101010	,C'XPC	,C'	,AL3(IPROC2)
DC	B'10101011	,C'XPD	,C'	,AL3(IPROC2)
DC	B'10101100	,C'XPE	,C'	,AL3(IPROC2)
DC	B'10101101	,C'XPF	,C'	,AL3(IPROC2)
DC	B'10101110	,C'XPL	,C'	,AL3(IPROC2)

ב חתומהרת

NR	NAME	ADDRESS	PHONE	DATE	AMOUNT	COMMENT
10	K. E. DAVIES	HAMPSHIRE, ENGLAND	3215677821	09 77	0100.11Y52000000	
12	P. R. ALDERSON	WINCHESTER, ENGLAND	9835618312	11 77	1111.11Y52400000	
14	D. M. BOWDLER	BEAULIEU, ENGLAND	1284629304	04 77	0999.99Y52800000	
15	FRANK ZAPPA	BIZARRE RECORDS, NY	1472907254	04 77	0999.99Y53200000	
16	MIKE ADAMS	HURSLEY, ENGLAND	1948567321	09 77	0087.71Y53600000	
18	ENE PARLOWE	SARATOGA, CALIFORNIA	4612075301	02 74	0111.11Y54000000	
20	GEORGE BURROW	SAN JOSE, CALIFORNIA	2231212101	06 74	0000.00Y54400000	
21	H. L. L. CALL	WASHINGTON, DC	3451212021	04 75	9999.99Y54800000	
22	ROLAND KIRK	ATLANTIC RECORDS, NJ	1494678254	03 78	0999.99Y55200000	
23	J. P. REYNOLDS	BOEBLINGEN, GERMANY	7031555110	04 73	3349.99Y55600000	
24	HAROLD JAMES	SINDELFINGEN, GERMANY	7031999021	06 77	0009.99Y56000000	
25	M. P. CREPIN	PARIS, FRANCE	1234567010	03 75	3349.99Y56400000	
26	HUBERT C HERBERT	SUNNYVALE, CAL.	3411212000	06 73	0009.99Y56800000	
27	PHILIPPE SMITH, JR	NICE, FRANCE	0000000028	05 74	0009.99Y57200000	
28	STAN SMITH	DUBLIN, IRELAND	7111212102	11 73	1259.99Y57600000	
29	DANIEL O'GALWAY	SOUTH BEND, S.DAK.	6121212010	10 73	0009.99Y58000000	
30	D. C. CURRENT	SUNNYVALE, CALIF.	3221212010	06 73	5399.99Y58400000	
31	J. S. LAVERENCE	SAN FRANCISCO, CA.	0000000101	08 73	0009.99Y58800000	
32	JEAN LAWRENCE	SARATOGA, CALIF.	6771212020	10 74	0809.99Y59200000	
33	JOHN ALDEN III	BOSTON, MASS.	4131212011	04 74	0259.99Y59600000	
34	DR W. T. KAR	NEW DELHI, INDIA	7033121121	05 74	0009.88Y60000000	
35	WILLIAM KAPP	NEW YORK, N.Y.	2121212031	01 75	3509.88Y60400000	
36	DR ADRIAN KONRAD	HURSLEY, ENGLAND	5671382122	09 74	0009.88Y60800000	
37	BRIGITTE ELORN	STUTTGART, GERMANY	7031100010	10 75	5009.88Y61200000	
38	B. C. WILLIAMSON	REDWOOD CITY, CALF.	3331212111	10 75	0009.88Y61600000	

รูปที่ ๑.๑ แสดงข้อมูลที่ใช้ในการทดสอบโปรแกรม


```

O FILE EDIT/TXT (102)      LPN      O (0000000)  PDA  MSP, LSP
ATA SECTOR
011111100111110 020011111100111110 0400111100111111001 0601111110000000000
01210021010101 1000202211211101 0002010011212100 1110121555555555
06552521761551 7144253311007651 3414513157564123 75556455555553??
NUMBER NAME ADDRESS PHONE DATE AMOUNT C COMMENT -----+++

00000000000000 120000000000000000 140000000000000000 160000000000000000
55555555555555 5555555555555555 5555555555555555 5555555555555555
33333333333333 3555555555555555 5555523333333555 5555523333333555
+++++-----+-----+-----+-----+

000000000000101 220011111100111111 240110011111100000 260000000000000000
55551666666150 5002102111012211 2054010101010566 6666766467466466
5555000100365 6416153120150301 2540567416412321 5677021001077001
-- 000100K.E .DAVIES HAMPSHI PE, ENGLAND 321 5677821 09 77 01

00010000000000 320000001010111111 340100111111111001 360111111000000003
56636666666616 6666625250100221 1112110102202540 1010104776666025
61115200000050 0010206761445237 6107163053452405 6741640103561377
.11Y52000000 0 00102P.P.ALDERSO N WINCHESTER, E NGLAND 982561

```

```

O FILE EDIT/TXT (102)      LPN      I (0000001)  PDA  MSP, LSP
DATA SECTOR
00000000000000 020000001000000000 040000001010111111 060001111111011111
07666466466466 6656636666666616 6666605150120102 1100021102501010
-00312011077011 1161115240000050 0010446562774452 1125154155456741
8312 11 77 11 11.11Y5240000 0 00104D.M.BOWDLER BEAULIEU, ENGLA

00000000000000 1200000000000001000 1400000000000001111 160101111100111111
110667666766646 6466467775773667 6666616666660201 1430220110120220
-14120462130400 4077001115111520 0000050001056216 3021001112121225
0 1284629304 0 4 77 0999.99Y528 00000 000105FRAN K ZAPPA PIZAPPE

11111100110000 220000000000000000 240000001000000000 260000001111011111
00120254134666 6766666466466467 7757736666666516 6666611104000121
53724340610147 2107254004077001 1161115320000050 0010651350141531
RECORDS, NY 147 2907254 04 77 09 99.99Y5320000 0 00106MIKE ADAMS

11111100111111 320100000000000000 340000000000010000 360000000000011033
22210354010101 0106767666666467 4664667655636666 6666166666600035
052345140567416 4141140567221001 0770000767115360 0000500011175377
HURSLEY, ENGLAN D 1948567321 09 77 0087.71Y5360 0000 00011105

```

รูปที่ 3.2 แสดงรายละเอียดการรับส่งข้อมูลในระบบ EDIT/CMD

O	FILE	EDIT/TXT (10?)	LRN	2 (000000?)	PDA	MSP,LSR
DATA SECTOR						
01101111111001	0201111111011111111	040110000000000000	0600000000000010000			
01040021120112	0202100500110121	1045666666665466	4664666666666666			
06502124775103	1214771431416726	1104612075301002	0740011161115400			
NE BARLOWE S	ARATOGA,CALIFORN	IA 4612075301 02	74 0111.11Y5400			
00000000011111	1201011111100111011	140110111111111000	160000000000000000			
66166666600120	0402221210201411	2050011012110466	66666666646646646			
00500076275727	5025227717316027	3543141672611022	3121210100507400			
000 000762GEORG	F BURROW SAW JO	SE,CALIFORNIA 22	31212101 06 74 0			
000001000000000	220000001001001001	240111001111111110	260011000000000000			
656636666666661	6667761541541540	0111020211102115	40010666666666664			
06001544000005	0001030604604603	1441771301674764	043163451212021			
00.00Y54400000	000983H. L. L. C	ALL WASHINGTON,	DC 3451212021			
00000000000100	320000000000000111	3401110111100111111	36011011111101103			
46647777577366	7666661666776211	0104112111021012	104200120251102			
07501111611154	0000005000115274	1640312311144164	130253724346237			
75 9999.99Y54	800000 000995RDL	AND KIPK ATLANT	IC RECORDS,NJ			

O	FILE	EDIT/TXT (10?)	LRN	3 (000000?)	PDA	MSP,LSR
DATA SECTOR						
00000000000000	020000000000001000	040000000000001010	060111111110011111			
04667666766646	6467467775773666	6666616666661525	203111021101001			
500141467025400	3070001116111552	0000050012222626	251674421027524			
1494678254 0	3 78 0999.99Y552	00000 001222J.R.	REYNOLDS BOEHL			
11001111111000	120000000000000000	140000001000000000	16000000111111011			
01540021013466	6666666646646646	6675773666666661	666676102110410			
756407525161070	3155511000407303	3416111556000005	001701012744021			
SEN, GERMANY 70	31555110 04 73 3	349.99Y55600000	001781HAROLD JA			
00111111111111	220111111100000000	240000000000000000	260100000000000000			
011211001011001	5002101366667776	6646646646657577	366666666166666			
010316454616756	4752516170311110	2100607700001611	156000000500321			
S SINDELFINGEN	,GERMANY70319990	21 06 77 0009.99	Y56000000 00321			
001001111110011	3201110011111100000	340000000000000000	360000001000000000			
542540202111120	2125402010010666	6666666466466466	675773666666600			
500603250161001	2134062163517123	4567010000075033	416111554000030			
P. CREPIN PA	PIS, FRANCE 123	4567010 03 75 32	49.99Y5640000			

รูปที่ 3.2 (ต่อ) แสดงการบรรณาธิกข้อมูลด้วยคำสั่งที่ปรากฏในตาราง EDIT/CMD

0	FILE EDIT/TXT (102)	LPN	4 (0000004)	PDA	MSB,LSB
0000000011111	020101011111100111	0401111110011100000	060000000000000000		
08166666612002	2404102002210221	1320105400151066	6666666646646646		
00500321405252	4030052252414356	6161454031461524	1121200000607300		
0 003214HUBER	T C HERBERT SUN	NYVALE, CAL. 34	11212000 06 73 0		
0001000000000	120000000111111101	1401111001100111100	160111111000000000		
57716676666661	6667762111122042	1121541210110054	0201001166666666		
6116560000005	0030100014100503	5140402212613540	6216351000000000		
9.99N56800000	.003890PHILIPPE S	MITH, JP NICE,	FRANCE 00000000		
0000000000000	220100000000000000	2401111011111001111	2601100111111100000		
6646646667577	1666666661666666	2201421121110201	1154120101010566		
00507400001611	6572000005004004	3416035140124524	1640125416415711		
05 74 0009.99	N5720000 004004	STAN SMITH DUBL	IN, IRELAND 711		
0000000000000	3200000010000000000	340000001111101011	3601111001111101032		
6666466466466	6757716666666616	6666600110141400	1203102122140035		
2102011073012	5161165760000000	0444541615407771	4711152754002377		
2102 11 73 12	59.99N57600000 0	04445DANIEL O'GA	LWAY SOUTH B		

0	FILE EDIT/TXT (102)	LPN	5 (0000005)	PDA	MSB,LSB
1110010111000	020000000000000000	0400000000010000000	0600000000010100111		
0105425001510	66666666666466466	4666757716766666	6166676705054022		
5644036413612	6121212010010073	0000161165000000	0500407046360352		
END, S.PAK.	6121212010 10 73	0009.99N5800000	0 0048780.C. CUP		
1001111111110	1200111110000000000	1400000000000000000	1600100000000000000		
2112211320105	4001105106666666	6664664664667757	7167666666166566		
4103566161454	0314166133221212	0100060730531161	1650400000500500		
T SUNNYVALE,	CALIF. 3221212	010 06 73 5399.9	9N58400000 00500		
0100111111111	2200011101111111110	2400110000000000000	2600000000000000010		
4254102020100	1020140201012015	4005106666666666	4674664666757716		
0360416525635	1531606216313374	0316120000000101	0000730000161165		
S. LAVERENCE	SAN FRANCISCO,	CA. 0000000101	08 73 0009.99N5		
0000000000011	3201101111111100111	3401111100111110000	3600000000000000032		
6666166666610	0141022010010202	0210054001105104	666666666664664035		
0000500544425	1604172563517312	1477140014166146	7712120200100377		
0000 005444JE	AN LAVERENCE SAN	ATOGA, CALIF. 6	771212020 10		

รูปที่ 3.2 (ต่อ) แสดงรายละเอียดของหน่วยข้อมูลที่ใช้จากโปรแกรม EDIT/CMD

FILE EDIT/TXT (102)	LRN	6 (0000006)	PDA MSB,LSB
0000000000100 TA SECTOR	0200000000000000111	0401011111011100111	0601110011110000000
6646767577167	6666661666676111	1401001411110012	2115410225106666
17400001611651	2000005005501270	6014456011116273	4754051336174131
74 0P09.99N59	200000 005581J0H	N ALDEN III BOS	TON, MASS. 4131
0000000000700	1200000100000000000	1400000110100100111	1600011101111100111
6654664664666	7577167666566166	6666024754254102	1110240011154110
0110040740025	1611651600000500	6016420760460312	1065704540140164
011 04 74 025	9.99N59600000 00	6016DR.W. T. KAR	NEW DELHI, IND
0000000000000	2200000000000001000	2400000000000011111	2601110111100111011
0666666666646	6466466675773666	6666616666662111	1014102211102431
4703312112100	5074000016001600	0000050066707144	1150310010657017
7033121121 0	5 74 0009.88Y600	00000 006670WILL	IAM KAPP NEW YO
0101000000000	3200000000000000000	3400010000000000000	3600011011111101023
4153510666666	6666466466466675	7716666666616667	6702400210141035
0661616212121	2031001075035016	0066040000050061	6042014211603377
N.Y. 212121	2031 01 75 3509.	88N60400000 0069	68DR ADRIAN K

FILE EDIT/TXT (102)	LRN	7 (0000007)	PDA MSB,LSB
0000000000000	0201001111110000000	0400000000000000000	0600000100000000000
1111100111111	3540101010106666	6766664674664666	7577366766666166
1120010122210	1405674164145671	3021220010740000	1600160000000500
7621414052345	Y, ENGLAND 5671	382122 09 74 000	9.88Y60800000 00
0111111110111	120110011111111001	1401111110000000000	1600000000000000000
5021012204010	2110222220022540	0210131066666666	6646646646667577
7221714450513	2616345447124407	5251611270311000	1001007505001600
7BRIGITTE FIC	PN STUTTGART, G	FRMANY 70311000	10 10 75 5009.88
0000000000000	2201001001111111111	2400011111101111100	2601111000000000000
6666661666667	0540542111101211	1020021104012354	0010546666666666
0000005007240	2603607144115376	1425477740314140	2146602331212111
000000 007248	P. C. WILLIAMSON	REDWOOD CITY,	CALIF. 3331212111
000000000010	3200000000000000000	3400010000000000000	3600011011111101023
664666757716	6666666106466675	7716666666616667	6702400210141035
1750000160066	1600000535035016	0066040000050061	6042014211603377
75 0009.88N6	1600000 5 3509.	88N60400000 0069	68DR ADRIAN K

รูปที่ ง.2 (ต่อ) แสดงรายละเอียดของหน่วยข้อมูลที่โอนจากโปรแกรม EDIT/OND

O	FILE	EDIT/TXT (102)	LPN	R (0000010)	DDA	MSP, LSP
TA	SECTOR					
0000000111111	020100111111100000	040000000000000000	060000010000000000			
0000000122210	3540101010106666	6766664674654565	7577366766666166			
0000003052345	1405674164145671	3021220010740000	1600160000000500			
HURSLF	Y, ENGLAND 5671	382122 09 74 000	9.88960800000 00			
011111110111	120110011111111001	140111111000000000	160000000000000000			
6021012204010	2110222220022540	0210131066666666	6646646646657577			
7221714450513	2616345447124407	5251611270311000	1001007505001600			
78PIGITE EIC	RN STUTTGART, G	ERMANY 70311000	10 10 75 5009.88			
0000000000000	220100100111111111	240001111110111100	260111100000000000			
5666661666667	0540542111101211	1020021104012354	0010546666666666			
2000005007240	2603607144115376	1425477740314140	3146603331212111			
200000 007248	R. C. WILLIAMSON	REDWOOD CITY,	CALF. 3331212111			
0000000000010	320000000000000000	340001000000000000	2600011011111101033			
6664666757716	6666666106466675	7716666666616567	6702400210141035			
0750000160066	1600000535035016	0066040000050061	6042014211603377			
75 0009.8896	1600000 5 3509.	8896040000 0069	680R ADRIAN K			

รูปที่ ง.2 (ต่อ) แสดงรายละเอียดของพื้นที่ข้อมูลที่ได้จากโปรแกรม EDIT/CMD

Q	FILE	XEDIT/TXT (161)	LRN	Q (0000000)	POA	MSP, LSP
01111110011110	020011111110011110	040011110011111001	060111111000000000			
01210021010101	1000202211211101	0002010011212440	1110124115015215			
06552521761551	7144253311007651	2414513157564003	7555640535633435			
NUMPER NAME	ADDRESS PHONE	DATE AMOUNT C	COMMENT - + -			
00000000000000	1200000101011111100	140111111110011111	160110000000000000			
01151151151116	0666150500210211	1012211205401010	1044666666576646			
10350330351530	3100365641615312	0150301254056741	6400321567702100			
- + - 0	100K.F.DAVIES	HAMPSHIRE, ENGLA	NO 3215677821 0			
00000000001000	220000000001010111	240111110011111111	260100111111100000			
06466665663661	6011606662525010	0221111211010220	2540101010477566			
7001006111523	0653031020626144	5237610716305345	2405674164010356			
7 0100.11Y52	0 0 102P.P.ALD	PERSON WINCHESTE	R, ENGLAND 98356			
00000000000000	320001000000000000	340101011111100111	360111110111111023			
06666646641605	6636661601160666	0515012010211000	2110250101010035			
1201107703146	1115243055303104	4656277445211251	5415545674164377			
12 11 77 1 .	11Y524 0 0 104	D.M.BOWLER BEA	ULIFU, ENGLAND			

Q	FILE	XEDIT/TXT (161)	LRN	I (0000001)	POA	MSP, LSP
00000000000000	020000000000000100	040000000000011111	060011111001111110			
1066766676664	6646646170577366	7160116066602011	4302201101302204			
1412046213040	0407700313611152	0305530310562163	0210011121212250			
1284629304	04 77 0 9 .99Y52	R 0 0 105EPANK	ZAPPA PITAPRE			
1111001100000	120000000000000000	140000010000000000	1600011110111110011			
1202541346666	7666664664664617	0577366616011606	661104000121112			
7243406101472	1072540040770031	3611153230553031	0651350141531205			
OPDS, NY 1472	907254 04 77 0 9	.99Y532 0 0 1	06MIKE ADAMS HU			
1100111111100	220000000000000000	240000000010000000	260000000111011111			
0254010101010	6767666666467466	4667656626661601	1601600010400211			
5140567416414	1140567321001077	0000767115360055	3033137565021247			
EY, ENGLAND	1948567321 09 77	0087.71Y536 0	0 1 GENE BARLO			
011111110111	320111111000000000	340000000000000000	360100000000000000			
1202021005001	1012110466666 6	6546646646160566	2651601160666035			
0312147714314	16726110461207	0100207400313511	1543065303762377			
SARATOGA, CAL	IFORNIA 4612075	01 02 74 0 1 .11	Y54 0 0 762			

รูปที่ ๓.3 แสดงรายละเอียดของแฟ้มข้อมูล จากโปรแกรม XEDIT/CMD

0 FILE XEDIT/TXT (161)	LRN	2 (0000002)	PDA MSB,LSB
ATA SECTOR			
00000000000000 02010000000000000011	04011111011111001111	06011111111011111111	
06646646667577 3666160166667610	2110410102112110	0101100150021013	
00407303341611 1556305500170101	2744021553103164	5461675647525161	
04 73 3349.99 Y556 0 001781HA	ROLD JAMES SIND	ELFINGEN, GERMANY	
00000000000000 1200000000010000000	1400000010010011111	1601001111100111111	
06170666466466 4160757736616716	6566615425402021	1112021254020100	
031313021006077 0303161115630650	0321056006032501	6100121340621635	
031 9 021 06 77 0 9.99Y56 0 0	03210M, P. CRFPI	N PAPIE, FRANCE	
00000000000000 2200000000001000000	240000000011111101	2600111111100111111	
06666666666666 6646667577366616	0166666612002240	4102002210221132	
02345670100030 7503341611156430	5500321405252403	0052252414356616	
0234567010 03 75 3349.99Y564 0	003214HUBERT C	HERBERT SUNNYV	
00111000000000 3200000000000000000	3400001000000000000	3600111111110111000	
05400151066666 6616046646641607	5771667160166677	6211112204211006	
04031461534112 1230300607303031	6116560305500301	0001410050351321	
0, CAL. 34112 12 0 06 73 0 9	0.99N568 0 00389	OPHILIPPE SMI 1	

0 FILE XEDIT/TXT (161)	LRN	3 (0000003)	PDA MSB,LSB
ATA SECTOR			
1100110011110 02001111110000000000	040000000000001000	0600000000000111101	
2154124411005 4020100111616746	6466416075771666	1601666664220142	
4040220061354 0621635103002000	5074030316116572	3055004004341603	
04H, JR NICE, FRANCE 0 28 0	5 74 0 9.99N572	0 004004STAN: S	
1001111110011 1201111100000000000	1400000000000000001	160000000000000111	
1110201115412 0101010616066666	6466466466675771	6661601661606001	
0124524164012 5416415731321210	201107301 516116	5763055007435416	
04H DUBLIN, IR FLAND 7 1 21210	2 11 73 1259.99N	576 0 00.4 50AN	
0101111110011 2201110111100101110	2400000000000000000	260000000000100000	
04140012031021 2214001054250015	4466666666664564	6641607577167160	
0777147111537 5400256440364136	0061212120100100	7303031611650306	
00GALWAY SO UTH BEND, S.DAK.	6121212010 10	73 0 9.99N58 0	
0000101001111 320111001111111100	3401111100000000000	3600000000000000000	
0767050540222 0121122113201054	0011051066666666	6646646646677006	
0070463603522 5641035661614540	141661332212120	1000607305211321	
0878D.C. CUPR ENT SUNNYVALE, CALIF. 22212120		10 06 73 5299 1	

รูปที่ 3.3 (ต่อ) แสดงรายละเอียดของหน่วยข้อมูลที่ใช้จากโปรแกรม XEDIT/CMD

0	FILE	XEDIT/TXT (161)	LPN	4 (0000004)	PDA	MSR,LSP
ATA SECTOR						
00001000000000	0200000100100111111	0401110011101111111	0601100110000000000			
05771676160166	6666154254102020	1001020140201012	0154005441606664			
06116504305500	5005260760416525	6351531606216313	3740316003071010			
.00N5R4 0 00	5005J. S. LAVERE	NCE SAN FRANCIS	CO, CA. 0 101			
00000000000100	1200000000000011110	1401111111100111111	1601100111110000000			
46641607577167	7160166616010014	1022010010202021	0054001105106666			
07303031611650	0305500534325160	4172563517312147	7140314166146771			
73 0 9.99N58	8 0 005 4 JEAN	LAWRENCE SARATO	GA, CALIF. 6771			
00000000000000	2200000100000000000	2400011110111110010	2600011111100111100			
56664664664676	7577167616016666	7611114010014110	1001221154102251			
0200100740000	1611651230550055	0127060144560313	1627347640513361			
020 10 74 080	9.99N592 0 0055	81JOHN ALDEN I	BOSTON, MASS.			
00000000000000	3200000000001000000	3400000001101001000	3601110011101111000			
56666666646646	6466675771676160	1666666024254254	1021110240011000			
.3121201100407	4002516116516305	5006016420760460	3121065704540331			
.31212011 04 7	4 0259.99N596 0	0060160R W. T.	KAP NEW DELH 1			

0	FILE	XEDIT/TXT (161)	LPN	5 (0000005)	PDA	MSR,LSP
ATA SECTOR						
1001111100000	0200000000000000000	0400000010000000000	0600111111101111001			
01541101010666	6666666466466416	0757736160166666	62111110141022111			
01401641114703	3121121005074030	3160016307500667	0714411503100106			
I, INDIA 703	3121121 05 74 0	9.88Y6 0 00667	0WILLIAM KAPP N			
1111001010000	1200000000000000000	1400000001000000000	1600000011011111101			
3121541535106	6666666664664664	6667577166616016	6676702400210141			
1723406616162	1212120310010750	3501600660430550	0616042014211600			
YORK, N.Y. 2	121212031 01 75	3509.88N604 0 0	069680P ADRIAN K			
1100111111100	2201111111000000000	2400000000000000000	2600100000000000001			
0010122210354	0101010106666676	6664674664160757	7366716016666660			
1414052345140	56741641456713	1220010740303160	0160030550070000			
AD HURPSLEY,	ENGLAND 567138	122 09 74 0 9.8	8Y608 0 007000			
1111011111001	3201111111001111111	01000000000000000	360000000000010000			
1220401021102	2222002254002101	3446666616066466	4664666757716000			
1445051326163	4544712440752516	007021130310010	0750500160066000			
ITTE FICPN S	TUTTGAFT, GERMAN	70311 0 10 10	75 5000.88N6 1			

รูปที่ 3.3 (ต่อ) แสดงรายละเอียดของหน่วยข้อมูล จากโปรแกรม XEDIT/OMD

O	FILE	XEDIT/TXT (161)	LRN	6 (0000006)	PDA	MSB,LSB
0000000000001	0200010011111111110	0400111111101111001	0601110000000000000	0000000000000000000	0000000000000000000	0000000000000000000
6616016666670	5405421111012111	0200211040123540	0105416066661604			
1230550072402	6036071441153761	4254777403141403	1466032312123130			
12 0 007248B	. C. WILLIAMSON	REDWOOD CITY, C	ALF. 3 1212 1			
00000000000100	1200000000000000000	1400000000100000000	1600000011011111101			
6641607577166	6160106664664664	6667577166616016	6676702400210141			
7503031600661	6305530310010750	3501600660430550	0616042014211603			
75 0 9.88N61	6 0 031 01 75	3509.88N604 0 0	06968DP ADRIAN K			
1100111111100	2201111111000000000	2400000000000000000	2600100000000000001			
0010122210354	0101010106666676	6664674664160757	7366716016666660			
1414052345140	5674164145671302	1220010740303160	0160030550070072			
AD HURSLEY,	ENGLAND 5671382	122 09 74 0 9.8	RY608 0 0070078			
1111011111001	3201111111001111111	3401000000000000000	360000000000010000			
1220401021102	2222002254002101	3446666616066466	4664666757716006			
1445051326163	4544712440752516	1007031130310010	0750500160066331			
ITTE EICRN S	TUTTGAJT, GERMAN	Y 70311 0 10 10	75 5000.88N6 1			

O	FILE	XEDIT/TXT (161)	LRN	7 (0000007)	PDA	MSB,LSB
0000000000001	0200010011111111110	0400111111101111001	0601110000000000000	0000000000000000000	0000000000000000000	0000000000000000000
0000000666670	5405421111012111	0200211040123540	0105416066661604			
0000003072402	6036071441153761	4254777403141403	1466032312123130			
07248B	. C. WILLIAMSON	REDWOOD CITY, C	ALF. 3 1212 1			
00000000000100	1200000000000000000	1400000000100000000	1600000011011111101			
6641607577166	6160106664664664	6667577166616016	6676702400210141			
503031600661	6305530310010750	3501600660430550	0616042014211603			
5 0 9.88N61	6 0 031 01 75	3509.88N604 0 0	06968DP ADRIAN K			
1001111111100	2201111111000000000	2400000000000000000	2600100000000000001			
0010122210354	0101010106666676	6664674664160757	7366716016666660			
414052345140	5674164145671302	1220010740303160	0160030550070072			
AD HURSLEY,	ENGLAND 5671382	122 09 74 0 9.8	RY608 0 0070078			
1110111111001	3201111111001111111	3401000000000000000	360000000000010000			
220401021102	2222002254002101	3446666616066466	4664666757716006			
445051326163	4544712440752516	1007031130310010	0750500160066331			
ITTE EICRN S	TUTTGAJT, GERMAN	Y 70311 0 10 10	75 5000.88N6 1			

หน้า 3 (ต่อ) แสดงรายละเอียดของแฟ้มข้อมูล โดยจากโปรแกรม XEDIT/CMD

0	FILE REFORMAT/TXT (150)	LRN	0 (0000000)	PDA MSP,LSP
TA SECTOR				
1111110000000	0201111000000000000	040000111111000000	0600001111100011110	
1210024444444	10104444444444444	4440002022444444	4442111044400204	
6552520000000	61550000000000000	0001442533000000	0000076500041450	
NUMBER	NAME	ADDRESS	PHONE DATE	
1111100111111	1201000000000000000	1400000000000000000	1600000000000000000	
1121244011101	21555555555555555	55555555555555555	55555555555555555	
5756400375556	45555555333333333	33333333333355555	55555555555555555	
AMOUNT ,COMMENT	T -----+++++	+++++-----	-----	
0000000000000	2200000000000000000	240000000010101111	260110000000001111	
5555555555555	55555555555555555	5166666615050021	0244444444441012	
3333355555555	33333333555555555	5500010036564161	530000000000150	
++++-----	+++++-----	- 000100K.F.DAVI	ES HAMP	
.100111111100	3200000000000000000	340000000010000000	360000123333312333	
2054010101044	6666666766467466	46666666666666666	6107735677777356	
2540567416400	3215677021001077	0010061115200000	0537777735677777	
RE, ENGLAND	3215677921 09 77	0100.11Y5200000	0	

0	FILE REFORMAT/TXT (150)	LRN	1 (0000001)	PDA MSP,LSP
TA SECTOR				
1000001010111	0201111100000000111	0401111110011111111	0600000000000000000	
666662525010	0221144444444211	0102202540101010	4776666766646646	
001020626144	52376000000000716	3053452405674164	0103561031201107	
00102P.R.ALD	FRSON WIN	CHESTER, ENGLAND	9835618312 11 7	
000001000000	120000000001010111	140111100000000111	160111110111111000	
6656626666666	6616666660515012	010244444444000	2110250101010444	
116111524000	0050001044656277	4452000000000251	5415545674164000	
11.11Y524000	00 0001040.M.BOW	OLEP BEA	ULIFU, ENGLAND	
0000000000000	220000000001000000	240000000001111101	260111100000000111	
6667666466466	6467775773667666	6616666660201143	0220444444444013	
462130400407	7001116111520000	0050001056216302	1001000000000212	
4629304 04 7	7 0999.99Y528000	00 000105FRANK 7	APPA BIZ	
011111110011	3200000000000000000	340000000001000000	3600000233333212333	
420012025413	4666676666646646	6467775773666666	6610735677777356	
025372424061	0147210725400407	7001116111532000	0053777735677777	
RECORDS, NY	1472907254 04 7	7 0999.99Y532000	00	

รูปที่ 3.4 แสดงรายละเอียดของข้อมูลที่ปรากฏในแฟ้ม REFORMAT/ORD

DATA SECTOR	FILE REFORMAT/TXT (150)	LRN	2 (0000002)	PDA	MSB,LSB
00000011111011	0201110000000000111	04011111001111111000	06000000000000000000		
06666661110400	01244444444444122	2103540101010444	4676766666646746		
00001065135014	1530000000000052	3451405674164000	0114056732100107		
000106MIKE AD	AMS	HUP	SLEY, ENGLAND		1948567321 09 7
0000001000000	120000000001111011	1401111100000000111	1601111101111111111		
06765663666666	6616666660010400	2112044444444202	0210050011012110		
00076711536000	0050001117565021	2477500000000312	1477143141672611		
0087.71Y536000	00 000111GFNE BA	RLOWE	SAP		ATOGA, CALIFORNIA
0000000000000	220000000001000000	240000000001111110	2601111110000000111		
066666666646646	6466666663666666	6616666660012004	0222124444444201		
01207530100207	4001116111540000	0050007627572750	2522770000000316		
012075301 02 7	4 0111.11Y540000	00 000762GEORGE	PURPOW		SAN
1101111111111	3200000000000000000	340000000001000000	3600000233333312333		
2050011012110	4666666666646646	6466666663666666	6610735677777356		
03543141672611	0223121210100607	4000006001544000	0053777725677777		
0SF, CALIFORNIA	2231212101 06 7	4 0000.00Y544000	00		

DATA SECTOR	FILE REFORMAT/TXT (150)	LRN	3 (0000003)	PDA	MSB,LSB
0000001001001	0200011110000000111	040111111001100000	06000000000000000000		
0667761541541	5400114444444202	1110211540044444	4666666666646646		
0001030604604	6031440000000713	0167476404300000	0345121200100407		
000983H. L. L	. CALL	WAS	HINGTON, DC		3451212021 04 7
0000001000000	120000000001111110	140111100000000111	1601111101111111011		
0775773667666	6616667762110104	1121444444444021	0121042001202511		
01116111540000	0050001152741640	3123000000000144	1641302537243462		
0999.99Y548000	00 000995ROLAND	KIPK	ATL		ANTIC RECORDS, NJ
0000000000000	220000000001000000	240000000001010111	260111110000000111		
07666766646646	7467775773666666	6616666661525203	1110244444444010		
01467025400307	0001116111552000	0050012222626251	6744300000000275		
094678254 03 7	8 0999.99Y552000	00 001222J.R.PEV	NOLDS		BOE
1111001111111	3200000000000000000	34000 0000001000000	3600000233333312333		
1001540021013	4666666666646646	6466675773666666	6610735677777356		
06756407525161	0703155511000407	3032416111556000	0053777725677777		
0NGEN, GERMANY	7031555110 04 7	3 3349.99Y556000	00		

รูปที่ 3.4 (ต่อ) แสดงรายละเอียดของข้อมูลที่โอนจากโปรแกรม REFORMAT/OKD

```

0 FILE REFORMAT/TXT (150) LRN 4 (0000004) PDA MSP,LSP
DATA SECTOR
000000001111110 020111110000000011 04011111111011111 060100000000000000
066666761021174 1010244444444211 0010110015002101 36666777666466646
00017010127440. 2155300000000316 4546167564752516 1703111102100607
001781HAROLD JAMES SIN DELFINGEN,GERMAN Y7031999021 05 7

000000001000000 1200000000001001001 140111110000000011 160110011111000000
66675773666666 6616666661542540 2021144444444202 1254020100444444
00016111560000 0050032105600603 2501600000000012 1340621635000000
0009.99Y560000 .00 003210M. P. C REPIN PAR IS, FRANCE

000000000000000 2200000000001000000 2400000000001111110 260101111110000111
66666666646646 6466675773666666 6616666661200224 0410200224444221
23456701000307 5033416111564000 0050032140525240 3005225240000356
234567010 03 7 5 3349.99Y564000 00 003214HUBFRT C HERBERT SUN

11110011100000 3200000000000000000 3400000000001000000 360000023333312333
20105400154444 4666666666646646 6466675771657666 661073567777356
61454031460000 0341121200000607 3000016116560000 0053777735677777
VALE, CAL. 3411212000 06 7 3 0009.99Y568000 00

```

```

0 FILE REFORMAT/TXT (150) LRN 5 (0000005) PDA MSP,LSP
DATA SECTOR
0000000111111 020101111100110011 040100111110000000 060000000000000000
06667762111122 0421121541244110 0540201004444444 4666666666746646
00030100014100 5035140402200613 5406216350000000 000000002000507
003890PHILIPP E SMITH, JP NIC E, FRANCE 0000000028 05 7

0000001000000 1200000000001111011 140111000000000011 160111001111110000
6675771666666 6616666662201421 1214444444444020 1115412010104444
0016116572000 0050040043416035 1400000000000452 4164012541640000
009.99N572000 00 004004STAN SM ITH DUB LIN, IRELAND

0000000000000 2200000000001000000 2400000000001111110 2601011111100000111
6666666646646 6466675771666666 6616666660011014 1400120344444712
1121210201107 3012516116576000 0050044454161540 7771471100000375
11212102 11 7 3 1259.99N576000 00 004445DANIEL O'GALWAY SCU

1111001011100 3200000000000000000 3400000000001000000 360000023333312333
0010542500154 466666666664664 6466675771676666 661073567777356
2564403641360 0612121201001000 3000016116500000 0053777735677777
BEND, S.DAK. 6121212010 10 7 3 0009.99Y580000 00

```

รูปที่ 4.4 (ต่อ) แสดงรายละเอียดของหน่วยข้อมูล จากโปรแกรม REFORMAT/CMD

```

0 FILE REFORMAT/TXT (150) LPN 6 (0000006) PDA MSR,LSR
DATA SECTOR
000000001010011 0201111100000000111 0401111100111110000 0600000000000000000
1066676770505402 2201244444444221 1320105400110544 4666666666666666666
000040704636035 22564000000000356 6161454031416600 0322121201000600
0048780.C. CU RRENT SUN NYVALE, CALIF. 3221212010 06 7

000000001000000 1200000000001001001 1401111111100000111 1600111111110011000
466775771676666 6616666661542541 0202010044444201 4020101201540054
053116116504000 0050050052603604 16525635000000216 0621631337403167
5399.99N584000 00 005005J. S. L AVERENCE SAN FRANCISCO, CA.

000000000000000 2200000000001000000 2400000000001111011 2601111110000000111
666666666666746 6466675771677666 6616666661001410 2201004444444202
00000010100007 3000016116500000 0050054442516041 7256350000000312
000000101 08 7 3 0009.99N588000 00 005444JEAN LA WRENCE SAN

11100111110000 3200000000000000000 340000000001000000 3600000232323212322
10054001105444 4666666666666666666 6467675771676666 6610735677777355
77140314166000 0677121202001007 4000016116512000 0053777775677777
0GA, CALIF. 6771212020 10 7 4 0809.99N592000 00

```

```

0 FILE REFORMAT/TXT (150) LPN 7 (0000007) PDA MSR,LSR
ATA SECTOR
00000001111011 0201110111000000111 0401110011110000000 0600000000000000000
06666761111401 0014111444444012 2115410225444444 4666666666666666666
00055012706014 4560111000000273 4764051336000000 04131212011004007
005581JOHN AL DEN III BOS TON, MASS. 4131212011 04 7

00000001000000 1200000000001101001 1400011100000000111 1600111110011111000
6675771676666 6616666660242542 5410244444444102 4001115411010444
12516116516000 0050060164207604 6031200000000657 0454014016411000
1259.99N596000 00 00601600 W. T . KAR NEW DELHI, INDIA

0000000000000 2200000000001000000 240000000001111111 2600111100000000111
666666666666666 64666757736666666 6616666662111101 4102244444444100
12312112100507 4000016001600000 0050066707144115 0310000000000657
33121121 05 7 4 0009.99Y600000 00 006670WILLIAM KAPP NEW

1100101000000 3200000000000000000 340000000001000000 3600000232323212322
2154153544444 4666666666666666666 6466675771666666 6610735677777354
2340661600000 0212121203100107 5035016006604000 0053777775677777
PK, N.Y. 2121212031 01 7 3 3509.88N604000 00

```

รูปที่ 4.4 (ต่อ) แสดงรายละเอียดของหน่วยข้อมูลที่ได้จากโปรแกรม REFORMAT/CMD


```

O FILE REFORMAT/TXT (150) LPN B (0000010) PDA MSP,LSB
TA SECTOR
0000001101111 0201101111110000111 0401111001111111100 0500000000000000000
6667670240021 0141112004444122 2103540101010444 4666667666646746
0061604201421 1603762140000052 3451405674164000 0567130212200107
006968DR ADPI AN KONPAD HUR SLEY, ENGLAND 5671382122 09 7

0000001000000 1200000000001111111 1401011111000000111 1601111110011111110
6675773667666 6616666660210122 040102144444222 2200225400210124
0016001600000 0050070072217144 5051326000000345 4471244075251610
009.PPY608000 00 007007BRIGITT E EICRN. STU TTGAPT, GERMANY

0000000000000 220000000001000000 240000000001001001 260111111110000111
6666666646646 6466675771666666 6616666670540542 1111012114444200
3110001001007 5050016006612000 0050072402603607 1441153760000254
31100010 10 7 5 5009.88N612000 00 007248P. C. W ILLIAMSON PED

1011100111110 3200000000000000000 340000000001000000 360000023333312333
0401235400105 4666666666646646 6466675771666666 6610735677777356
4021414031466 0333121211101007 5000016006616000 0053777735677777
D CITY, CALF. 3331212111 10 7 5 0009.88N616000 00

```

```

O FILE REFORMAT/TXT (150) LPN 9 (0000011) PDA MSP,LSB
FA SECTOR
000000101111 0201101111110000111 0401111001111111100 0500000000000000000
0000000240021 0141112004444122 2103540101010444 4666667666646746
0000003201421 1603762140000052 3451405674164000 0567130212200107
P ADRI AN KONPAD HUR SLEY, ENGLAND 5671382122 09 7

0000001000000 1200000000001111111 1401011111000000111 1601111110011111110
6675773667666 6616666660210122 040102144444222 2200225400210134
0016001600000 0050070072217144 5051326000000345 4471244075251610
009.PPY608000 00 007007BRIGITT E EICRN STU TTGAPT, GERMANY

0000000000000 220000000001000000 240000000001001001 260111111110000111
6666666646646 6466675771666666 6616666670540542 1111012114444200
3110001001007 5050016006612000 0050072402603607 1441153760000254
1100010 10 7 5 5009.88N612000 00 007248P. C. W ILLIAMSON PED

0111100111110 3200000000000000000 340000000001000000 360000023333312333
0401235400105 4666666666646646 6466675771666666 6610735677777356
021414031466 0333121211101007 5000016006616000 0053777735677777
D CITY, CALF. 3331212111 10 7 5 0009.88N616000 00

```

รูปที่ ง.4 (ต่อ) แสดงรายละเอียดของแฟ้มข้อมูลที่ได้จากโปรแกรม REFORMAT/CHD

O	FILE	XREFD/TXT (167)	LRN	O (0000000)	PDA	MSP,LSB
TA	SECTOR					
1111110000000	020111100000000000	040000111111000000	0600001111100011110			
1210024444444	10104444444444444	4440002022444444	4442111044400204			
6552520000000	6155000000000000	0001442533000000	0000076500041450			
NUMBER	NAME	ADDRESS	PHONE	DATE		
1111100111111	120100000000000000	140000000000000000	150000000000000000			
1121244011101	24155555555555555	5555555555555555	5555555555555555			
5756400375556	40555555533333333	333333333333555	5555555555555555			
MOUNT	COMMEN	T	-----+++++	+++++	-----	-----
0000000000000	220000000000000000	240000000001010111	2601110000000000111			
5555555555555	5555555555555555	5516666661505002	1024444444444101			
3333335555555	5333332335555555	5550001003656416	1530000000000015			
+++++	-----	000100K.E.DAV	IES			HAM
1110011111110	320000000000000000	340000000001000000	360000000001010000			
1205401010104	4666666676646746	6466665662666566	6616666662525021			
1254056741840	0321567702100107	7001006111520000	0050001020626300			
IRE, ENGLAND	3215677821 09 7	7 0100.11Y520000	00 000102P.P.			

O	FILE	XREFD/TXT (167)	LRN	I (0000001)	PDA	MSP,LSB
TA	SECTOR					
1111111000000	020000111111111001	040111111000000000	060000000000000001			
0100221144444	4442110102202540	1010104776666766	6466466466666666			
1445237600000	0007163053452405	6741640103561031	2011077011116111			
ALDERSON	WINCHESTER, F	ENGLAND 983561831	2 11 77 1111.11Y			
0000000000001	1200101111111000000	140000111111011111	1601110000000000000			
5666616666660	5150120102444444	4440002110250101	0104444667666766			
0000050001044	6562774452000000	0002515415545674	1640000120462130			
00000 0001040	.M.BOWDLER	BEAULIEU, ENGL	AND 120462930			
0000000000001	2200000000000000001	2401111011111000000	260000111111011111			
5465467775773	6676666616666660	2011430220444444	4440130220420012			
4077001116111	5200000050001056	2163021001000000	0002121225025372			
4 77 0999.99Y	52800000 000105F	RANK ZAPPA	BIZARRE PEGOR			
0110700000000	3200000000000000001	3400000000000000001	3601110111110000000			
4134666676666	6466466467775773	6566666616666661	1104000104444001			
0610147210725	4004077001116111	5320000050001065	1250141530000300			
NY 147290725	4 04 77 0999.99Y	53200000 000106M	IKF ADAMS			

รูปที่ 3.5 แสดงรายการแก้ไขของหน่วยข้อมูลที่ใช้โปรแกรม XREFD/CMD

O	FILE	XREF0/TXT (167)	LRN	2 (0000002)	PDA	MSP, LSP
A SECTOR						
00000011111111	02000111111110000000	040000000000000000	06000000010000000000			
444441222103	5401010104444676	7666666457466466	7656636666666616			
000000523451	4056741640000114	0567321001077000	0767115360000050			
HURSLEY	, ENGLAND	194	8567321 09 77 00			87.71Y53600000 0
00111011111111	12010000000011111111	140101111111110000	160000000000000000			
600104002112	0444444442020210	0500110121104666	6666656466466466			
175650212477	5000000003121477	1431416726110461	2075301002074001			
IGENE BARLOW	E	SARATOG	A, CALIFORNIA 461			2075301 02 74 01
001000000000	220000000000000000	240001000000000000	2600011111101111100			
6366666666616	6666666466466675	7736666666616666	7610211041010244			
115400000050	0076204073033416	1115560000050017	0101274402155300			
1Y54000000 0	0076204 73 3349.	99Y55600000 0017	81HAPOLD JAMES			
00011111111111	320110111111100000	340000000000000000	360001000000000000			
442110010110	0150021013666677	7666466466466675	7736666666616021			
000166546167	5647525161703111	1021006077000016	1115600000050300			
SINDELING	EN, GERMANY703199	9021 06 77 0009.	99Y56000000 0			

O	FILE	XREF0/TXT (167)	LRN	3 (0000003)	PDA	MSP, LSP
A SECTOR						
000010010011	020111100000001111	040100111111000000	060000000000000000			
666615425402	021144444442021	2540201004444444	6666666666466466			
321056006032	5016000000000121	3406216350000000	1234567010003075			
3210M. P. CR	EPIN	PARI	S, FRANCE			1234567010 03 75
000010000000	120000000011111101	1400111111100001111	160111110011100000			
757736666666	6166666612072240	4102002244442211	3201054001544444			
161115640000	0500321405252403	0052252400003566	1614540314600000			
9.99Y5640000	0 003214HUPERT C	HERBERT	SUNN			YVALE, CAL.
000000000000	220000000010000000	240000000011111111	260011110011001111			
666666466466	4666757716676666	6166677621111220	4211215412441100			
212000006073	0000161165600000	0500301000141005	0351404022006135			
212000 06 73	0009.99Y5680000	0 003890PHILIPPE	SMITH, JO NICE			
111100000000	320000000000000000	340000000010000000	360000000011110000			
010044444444	6666666674564666	4666757716666666	6166666622014021			
163500000000	0000000000005074	0000161165720000	0500400434160300			
ANCE	0000000028 05 74	0009.99Y5720000	0 004004STAN			

รูปที่ 3.5 (ต่อ) แสดงรายละเอียดของข้อมูลที่ปรากฏในแฟ้ม XREF0/CMD

0	FILE	XREFC/TXT (167)	LRN	4 (0000004)	PDA	MSB,LSB
ATA SECTOR						
1111100000000	0200011111100111111	0401000000000000000	0401000000000000000	0600000000000000000		
2112144444444	4402011154120101	04444466666666666	04444466666666666	4664664666757716		
3514000000000	0045241640125416	4000007111212102	4000007111212102	0110730125161165		
SMITH	DUBLIN, IRELAN	D	7111212102	11 73 1250.99N5		
0000000000011	1201111010111111000	1400011111011110010	1400011111011110010	1601110000000000000		
6666166666600	1101414001203444	4421221400105425	4421221400105425	00154466666666666		
0000500444541	6154077714711000	0037540025644036	0037540025644036	4136006121212010		
0000 0044450A	NIEL O'GALWAY	SOUTH BEND, S.		DAK. 6121212010		
0000000000010	2200000000000000010	2401001111110000000	2401001111110000000	2600011111111100111		
4664666757716	7666666166676705	0540222012444444	0540222012444444	4422113201054001		
10730000161165	0000000500407046	3603522564000000	3603522564000000	0035661614540314		
1 73 0009.99N5	8000000 0048780.	C. CUPPERT		SUNNYVALE, CAL		
0000000000000	3200000000000000010	3400000000000000010	3400000000000000010	3600100111111111000		
4445666666666	4664664667757716	7666666166655615	7666666166655615	4254102020100021		
00003221212010	0060720531161165	0400000500500526	0400000500500526	0360416525635300		
3221212010	06 73 5399.99N5	8400000 005005J.		S. LAVERENCE		

0	FILE	XREFC/TXT (167)	LRN	5 (0000005)	PDA	MSB,LSB
ATA SECTOR						
00000011101111	0201111100110000000	0400000000000000000	0400000000000000000	0600000100000000000		
04444420140201	0120154005446666	6666664674664666	6666664674664666	7577167766666166		
00000031606216	31337403160000000	0001010000730000	0001010000730000	1611650000000500		
SAN FRAN	CISCO, CA. 0000	000101 08 73 000		9.99N58800000 00		
00111101111111	1201000000011111111	1400011111000000000	1400011111000000000	1600000000000000000		
56100141022010	044444420202100	5400110544446666	5400110544446666	6666664664664675		
44251604172563	5000000031214771	4031416600005771	4031416600005771	2120200100740000		
44JFAN LAWRENC	E SAPATOGA	, CALIF. 6771		212020 10 74 080		
0010000000000	22000001111011 101	2401100000011111100	2401100000011111100	2601111000000000000		
77167666666166	667611114010 41	1144444401221154	1144444401221154	1022544444446666		
11651200000500	5501270601445	1100000027347640	1100000027347640	5133600000004121		
99N59200000 00	5581JOHN ALDEN	II BOSTON,		MASS. 4131		
0000000000000	3200000100000000000	00000110100100111	00000110100100111	360000000011101000		
66664664664666	7577167666666166	6566024254254102	6566024254254102	4444444410240021		
20110040740025	1611651600000500	016420760460312	016420760460312	0000000065704200		
2011 04 74 025	9.99N59600000 00	01000 W. T. KAP		NEW D		

รูปที่ 3.5 (ต่อ) แสดงรายละเอียดของข้อมูลที่ได้จากโปรแกรม XREFC/AMD

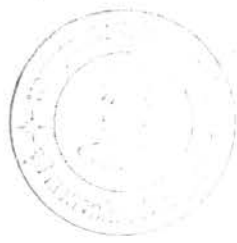
O	FILE	XREF0/TXT (167)	LPN	6 (0000006)	PDA	MSB,LSB
TA	SECTOR					
1111001111100	020000000000000000	040000000000100000	0600000000000111111			
10111541101044	4466666666666666	6666667577366666	66616666662111110			
5401401641100	0070331211210050	7400001600160000	0005006670714411			
FLHI, INDIA	7033121121 05	74 0009.89Y60000	000 006670WILLIA			
1110000000011	12010111110010100000	140000000000000000	1600000000000100000			
0224444444410	2431215415354444	4466666666666666	6666667577166666			
1000000000065	7017234066160000	0021212120310010	7503501600660400			
APP NE	W YORK, N.Y.	2121212031 01	75 3509.89Y60400			
0000000110111	2201110111111000011	2401111100111111100	260000000000000000			
1666767024002	1014111200444412	2210354010101044	4466666766666674			
5006160420142	1160376214000005	2345140567416400	0056713021220010			
006968DR ADR	IAN KONRAD HU	RSLEY, ENGLAND	5671382122 09			
0000000100000	3200000000000111111	3401101111100000011	3601111111001111000			
6667577366766	6661666666021012	2040102144444422	2220022540021021			
0001600160000	0005007007221714	4505132600000034	5447124407525200			
0009.89Y60800	000 007007PRIGIT	TE EICRN ST	UTTIGART, GERM			

O	FILE	XREF0/TXT (167)	LPN	7 (0000007)	PDA	MSB,LSB
TA	SECTOR					
1110000000000	020000000000000000	040100000000000000	0601001001111111111			
0134466666666	6646646646667577	1666666661666667	0540542111101211			
1610070311000	1001007505001600	6612000005007240	2603607144115376			
ANY 70311000	10 10 75 5009.88	N61200000 007248	B. C. WILLIAMSON			
0111111011111	120001111000000000	140000000000000000	160100000000000000			
4200211040123	5400105466666666	6646646646667577	1666666661066666			
0254777403141	4031466023312121	1101007500001600	6616000005260400			
RFDWOOD CITY	, CALF. 33312121	11 10 75 0009.88	N61600000 60400			
0000000110111	2201110111111000011	2401111100111111100	260000000000000000			
1666767024002	1014111200444412	2210354010101044	4466666766666674			
5006160420142	1160376214000005	2345140567416400	0056713021220010			
006968DR ADR	IAN KONRAD HU	RSLEY, ENGLAND	5671382122 09			
0000000100000	3200000000000111111	3401101111100000011	3601111111001111000			
6667577366766	6661666666021012	2040102144444422	2220022540021021			
0001600160000	0005007007221714	4505132600000034	5447124407525200			
0009.89Y60800	000 007007PRIGIT	TE EICRN ST	UTTIGART, GERM			

รูปที่ ๓.๕ (ต่อ) แสดงรายละเอียดของข้อมูลที่ถูกใช้จากโปรแกรม XREF0/CMD

O	FILE	XREFD/TXT (167)	LRN	B (0000010)	PDA	MSP,LSR
ATA SECTOR						
00000000000000	020000000000000000	040100000000000000	06010010011111111111			
00000000666666	6646646646667577	1666666661666667	0540542111101211			
00000003311000	1001007505001600	6612000005007240	2603607144115376			
311000	10 10 75 5009.88	N61200000 007248	P. C. WILLIAMS			
00111111101111	120001111000000000	140000000000000000	160100000000000000			
4200211040123	5400105466666666	6646646646667577	1666666661066666			
0254777403141	4031466033312121	1101007500001600	6616000005360400			
REDWOOD CITY	, CALF. 33312121	11 10 75 0009.88	N61600000 60400			
00000001101111	2201110111111000011	2401111100111111100	260000000000000000			
1666767024002	1014111200444412	2210354010101044	4466666766664674			
5006160420142	1160376214000005	2345140567416400	0056713021220010			
0069680P ADR	IAN KONRAD HU	RSLEY, ENGLAND	5671382122 00			
0000000100000	3200000000000111111	3401101111100000011	3601111111001111000			
6667577366766	6661666666071012	2040102144444422	2220022540021021			
0001600160000	0005007007221714	4505132600000034	5447124407525300			
0009.88Y60800	000 007007BRIGIT	TE EICRN ST	UTIGART, GERM			

รูปที่ ง.5 (ต่อ) แสดงรายละเอียดของแฟ้มข้อมูลที่ไต่รจากโปรแกรม XREFD/CMD



0	FILE TAPE/TXT (101)	LPN	0 (000000)	PDA	MSB,LSB
ATA SECTOR					
01111110011110	020011111100111110	040011110011111001	060111111000000000		
01210021010101	1000202211211101	0002010011212100	1110121555555555		
06552521761551	7144253311007651	3414513157564123	7555645555555322		
NUMBER NAME	ADDRESS PHONE	DATE AMOUNT C	COMMENT		

00000000000000	120000000000000000	140000000000000000	160000000000000000		
55555555555555	5555555555555555	5555555555555555	5555555555555555		
33333333333333	3555555555555555	5555533333332555	555553333333555		

00000000000101	220011111100111111	240110011111100000	260000000000000000		
55551666666150	5002102111012211	2054010101010666	6666766467466466		
5555000100365	6416153120150301	2540567416412321	5677021001077001		
--- 000100K.E	.DAVIES HAMPSHI	PE, ENGLAND 321	5677821 00 77 01		
00010000000000	320000001010111111	34010011111111001	360111111000000312		
56636666666616	6666625250100221	1112110102202540	1010104776660777		
51115200000050	0010206261445237	6107163053452405	6741640103563677		
.11Y5200000 0	00102P.R.ALDERSO	N WINCHESTER, E	ENGLAND 98356		

0	FILE TAPE/TXT (101)	LPN	1 (0000001)	PDA	MSB,LSB
ATA SECTOR					
00000000000000	020000000100000000	040000000101011111	060100111111101111		
06766646646646	6665663666666661	6666660515012010	2110002110250101		
01031201107701	1116111524000005	0001044656277445	2112515415545674		
18212 11 77 1	111.11Y52400000	000104D.M.BOWDLE	R BEAULIEU, ENGL		
10000000000000	120000000000000100	140000000000000111	160110111110011111		
01066766676664	6646646777577266	766661666666020	1143022011013022		
41412046213040	0407700111611152	0000005000105621	6302100111212122		
D 1284629304	04 77 0999.99Y52	800000 000105FRA	NK ZAPPA 817A00		
1111110011000	220000000000000000	240000000100000000	260000000111101111		
20012025413466	6676666646646646	7775773666666661	6666661110400012		
25372434061014	7210725400407700	1116111532000005	0001065135014153		
RECORDS, NY 14	72907254 04 77 0	999.99Y53200000	000106MIKE ADAMS		
1111110011111	320110000000000000	340000000000001000	360000000000000310		
12221035401010	1010676766666646	7466466765663666	6666616666660777		
05234514056741	6414114056732100	1077000076711536	0000050001117677		
HURSLEY, ENGLA	ND 1948567321 0	9 77 0087.71Y536	00000 000111		

รูปที่ 4.6 แสดงรายละเอียดของข้อมูลที่ปรากฏได้จากโปรแกรม TAPE/CMD

DATA SECTOR	FILE TAPE/TXT (101)	LRN	2 (0000002)	PDA MSP,LSR
0011110111111110	020011111111011111	040111100000000000	0600000000000000100	
000010400211201	1202021005001101	21104666666666664	6646646666566366	
*07565021247751	0312147714314167	2611046120753010	0207400111611154	
GENE PAPOWE	SARATOGA,CALIFO	PNIA 4612075301	02 74 0111.11Y54	
000000000000111	1201110111111001110	140111101111111110	160000000000000000	
66661666666001	2004022212102014	1120500110121104	6666666666466466	
000005000762757	2750252277172160	2735431416726110	2231212101006074	
00000 000762GEO	RGF BUPROW SAN.	JOSE,CALIFORNIA	2231212101 06 74	
000000010000000	2200000000010010010	2400111100111111111	260100110000000000	
666656636666666	6166677615415415	4001110202111021	1540010666666666	
000060015440000	0500010306046046	0314417713016747	6404316345121202	
0000000Y5440000	0 000983H. L. L.	CALL WASHINGTON	N, DC 345121202	
000000000000001	3200000000000000001	3401111101111001111	3601111011111110312	
66466477775773	6676666616667762	1101041121110210	1210420012020777	
04075011116111	5400000050001152	7416403123111441	6413025372433677	
04 75 9999.99Y	54800000 000995P	DLAND KIRK ATLA	NYIC RECORDS	

DATA SECTOR	FILE TAPE/TXT (101)	LRN	3 (0000003)	PDA MSP,LSR
001100000000000	0200000000000000001	0400000000000000001	0600101111111100111	
05114667666766	6466467467775773	6666666616666661	6252031110211010	
04620141467025	4003070001116111	5520000050012222	6262516744310275	
,NJ 149467825	4 03 78 0999.99Y	55200000 001222J	.P.REYNOLDS 805	
111110011111111	1200000000000000000	140000000001000000	160000000001111110	
11001540021013	46666666666646646	6466675773666666	6616666761021104	
16756407525161	0703155511000407	3033416111556000	0050017010127440	
INGEN, GERMANY	7031555110 04 7	3 3349.99Y556000	00 001781HAPOLD	
111001111111111	2201110111111100000	2400000000000000000	2600001000000000000	
10211211001011	0015002101366667	7766646646646667	5773656666661666	
55310316454616	7564752516170311	1102100607700001	6111560000005003	
MFS SINDLEFIN	GFN,GERMANY70319	99021 05 77 0009	.99Y56000000 000	
010010011111110	3200111110011111100	3400000000000000000	360000000010000312	
01542540202111	1202125402010010	66666666666646646	4666757726660777	
05600603250161	0012134062163517	1234567010003075	0334161115643677	
M. P. CREPIN	PARIS, FRANCE	1234567010 03 75	3349.99Y544	

รูปที่ 3.6 (ต่อ) แสดงรายละเอียดของข้อมูลที่ได้จากโปรแกรม TAPE/CMD

0	FILE TAPE/TXT (101)	LRN	4 (0000004)	PDA	MSB,LSP
DATA SECTOR					
0000000000000001	0201111101011111110	0400111111110011110	0600000000000000000		
00666666166666661	2002240410200221	0221132010540015	10666666666666664		
600000050032140	5252403005225241	4356616145403146	1534112120000060		
00000 003214H	UBERT C HERBERT	SUNNYVALE, CAL.	3411212000 06		
000000000100000	1200000000000111111	1401101111100110011	1601100111111000000		
646667577166766	6661666776211112	2042112154121011	0054020100116666		
300001611656000	0005003010001410	0503514040221261	3540621635100000		
3 0009.99N56800	000 003890PHILIP	PE SMITH, JR NI	CE, FRANCE 0000		
000000000000000	2200000100000000000	2400000111101111100	2601111110011111110		
666674664664666	7577166666666166	6666220142112111	0201115412010101		
000200050740000	16116572000000500	4004341603514012	4524164012541641		
00028 05 74 000	9.99N57200000 00	4004STAN SMITH	DUBLIN, IRELAND		
000000000000000	3200000000001000000	3400000000001111110	3601011111100110312		
66666666666666646	64666757716666666	6616666660011014	1400120310210777		
711121210201107	3012516116576000	0050044454161540	7771471115273677		
7111212102 11 7	3 1259.99N576000	00 0044450ANIFL	D GALWAY 50		

0	FILE TAPE/TXT (101)	LRN	5 (0000005)	PDA	MSB,LSP
DATA SECTOR					
001110111100101	0201100000000000000	0400000000000000100	0600000000000000101		
002214001054250	01510666666666664	6646646667577167	6666661666767050		
705400256440364	1361261212120100	1007300001611650	0000005004070463		
UTH BEND, S.D	AK. 6121212010	10 73 0009.99N58	000000 0048780.C		
011111100111111	1201111001111100000	1400000000000000000	1600000001000000000		
+02220121122113	2010540011051066	6666666546646646	6775771676666661		
035225641035661	6145403141661232	2121201000607005	3116116504000005		
CURRENT SUNNY	VALE, CALIF. 32	21212010 06 73 5	399.99N58400000		
000001001001111	2201111100111011111	2401111100110000000	2600000000000000000		
66661542541020	2010010201402010	1201540051066666	6666646746646667		
050052603604165	2563515316062163	1337403161200000	0010100007300001		
05005J. S. LAVE	RENCE SAN FRANCO	ISCO, CA. 00000	00101 08 73 0009		
001000000000000	3200001111011111111	34 001111111001111	3601000000000000012		
716776666661666	6661001410220100	020202100540011	0510666666660777		
16500000005005	4442516041725635	031214771403141	6614677121202677		
09N58800000 005	444JEAN LAWRENCE	SAPATOGA, CALI	E. 67712120		

รูปที่ 3.6 (ต่อ) แสดงรายละเอียดของข้อมูลในเทป TAPE/CMD.

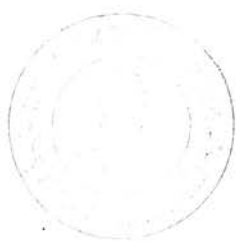
DATA SECTOR	FILE TAPE/TXT (101)	LPN	6 (0000006)	POA	MSB,LSB
000000000000000	020000100000000000	0400001111011111011	0601001111110011110		
106646646646767	5771676666661666	6761111401001411	1100122115410225		
002001007400001	6116512000005005	5012706014456011	1162734764051376		
20 10 74 0809	.99N59200000 005	581JOHN ALDEN II	I BOSTON, MASS.		
000000000000000	120000000000100000	140000000000110100	1601001110011101111		
0666666666664664	6646667577167666	6661666665024254	2541021110240011		
741312120110040	7400251611651600	0005000016420760	4603121065704540		
4131212011 04	74 0259.99N59600	000 00601600 W.	T. KAR NEW DELHI		
001111100000000	220000000000000000	2400010000000000000	2600011111110111100		
541101010666666	6666466466466675	7736666666616666	6621111014102211		
401641114703312	1121005074000016	0016000000050066	7071441150310010		
, INDIA 703312	1121 05 74 0009.	88Y6000000 0066	70WILLIAM KAPP		
110111100101000	320000000000000000	3400000000010000000	3600000000011010312		
024312154153510	6666666666466466	4666757716666666	6166676702400777		
570172340661616	2121212031001075	0350160066040000	0500616042013677		
FW YORK, N.Y.	2121212031 01 75	3509.88N6040000	0 00696800 A		

DATA SECTOR	FILE TAPE/TXT (101)	LPN	7 (0000007)	POA	MSB,LSB
001111101111110	0200111111100111111	0401000000000000000	06000000000000010000		
100210141112001	0122210354010101	0106666676666467	4664666757736676		
104211603762141	4052345140567416	4145671302122001	0740000160016000		
DRIAN KONRAD	HURSLEY, ENGLAN	D 5671382122 09	74 0009.88Y6080		
000000000011111	1201110111110011111	1401111001111111000	1600000000000000000		
566166666602101	2204010211022222	0022540021013106	666666664664664		
000500700722171	4450513261634544	7124407525161127	0311000100100750		
000 007007BRIGI	TTE FICRN STUTT	GART, GERMANY 7	031100010 10 75		
000000100000000	2200000001001001111	2401111110011111111	2600111100111100000		
567577166666666	1666667054054211	1101211102002110	4012354001054666		
001600661200000	5007240260360714	4115376142547774	0314140314660333		
009.88N61200000	0072488. C. WIL	LIAMSON REDWOOD	CITY, CALIF. 333		
000000000000000	3200000010000000000	3400000000100000000	3600000000011010312		
566666466466466	6757716666666610	4666757716666666	6166676702400777		
012111010075000	0160066160000053	0350160066040000	0500616042013677		
012111 10 75 00	09.88N61600000	3509.88N6040000	0 00696800 A		

รูปที่ ๖.6 (ต่อ) แสดงรายละเอียดของหน่วยข้อมูลที่ได้จากโปรแกรม TAPE/CHK

Q	FILE	TAPE/TXT (101)	LRN	B (0000010)	PDA	MSP,LSB
ATA SECTOR						
00000000111110	0200111111100111111	040100000000000000	0600000000000010000			
00000000112001	0122210354010101	0106666676666467	4664666757736676			
00000003762141	4052345140567416	4145671302122001	0740000160016000			
	ONRAD HURSLEY, ENGLAN	D 5671382122 09	74 0009.88Y6000			
000000000111111	1201110111110011111	140111100111111000	160000000000000000			
66166666602101	2204010211022722	0022540021013106	6666666646646664			
00500700722171	4450513261634544	7124407525161127	0311000100100750			
00 007007BRIGI	VTE EICRN STUTT	GAPT, GERMANY 7	031100010 10 75			
00000100000000	220000000100100111	240111111001111111	260011110011110000			
67577166666666	1666667054054211	1101211102002110	4012354001054666			
01600661200000	5007240260360714	4115376142547774	0314140314660333			
09.88461200000	007248R. C. WIL	LIAMSON REDWOOD	CITY, CALF. 333			
00000000000000	320000001000000000	340000000010000000	3600000000011010312			
66666466466466	6757716666666610	4666757716666666	6166676702400777			
12111010075000	0160066160000053	0350160066040000	0500616042013677			
12111 10 75 00	09.884616000000	3509.8846040000	0 00696800 A			

รูปที่ 3.6 (ต่อ) แสดงรายละเอียด ของแฟ้มข้อมูลที่ได้จากโปรแกรม TAPE/CMD



0 FILE XTAPECMP/TXT (154)		LPN	0 (0000000)	PDA	MSB,LSB
DATA SECTOR					
0011111100111110	02001111111100111110	04001111100111111001	06011111110000000000		
001210021010101	10002022112111101	0002010011212440	1110121150152152		
206552521761551	7144253311007651	3414513157564002	7555645256334354		
NUMBER NAME	ADDRESS PHONE	DATE AMOUNT C	COMMENT - + -		
000000000000000	1200001010111111001	1401111111100111111	1601000000000000000		
5115115115111160	6661505002102111	0122112054010101	0446666666766467		
303503303515303	1003656416153120	1503012540567415	4003215677021001		
+ - + - 0	100K.F.DAVIES H	AMPSHIRE, ENGLAN	D 3215677821 09		
00000000010000	2200000000010101111	2401111001111111111	2600011111110000000		
364666656636616	0116066625250100	2211112110102202	5401010104776666		
770010061115230	6530310206261445	2376107163053452	4056741640103561		
*7 0100.11Y52 0	0 102P.P.ALDF	PERSON WINCHESTER	, ENGLAND 983561		
000000000000000	32001000000000000001	3400101111111001111	3601111011111110001		
66466466416056	6366616011676660	5150120102110002	1102501010101007		
12011077031461	1152430553031044	6562774452112515	4155456741641427		
12 11 77 1 .1	1Y524 0, 0 1040	.M.BOWDLER BEAU	LIEU, ENGLAND		

0 FILE XTAPECMP/TXT (154)		LPN	1 (0000001)	PDA	MSB,LSB
DATA SECTOR					
000000000000000	0200000000000010000	040000000001111101	0601111001111111011		
06675667666466	4664617057736671	6011606660201143	0220110130220420		
01204621304004	0770031361115203	0553031056216302	1001112121225025		
1284629304 04	77 0 9 .99Y528	0 0 105FRANK 7	APPA PIZARRA PE		
11100110000000	1200000000000000000	1400010000000000000	1601111011111001111		
20254134666676	6666466466461705	7736661601160666	1110400012111222		
24340610147210	7254004077003136	1115323055303106	5135014153120523		
RDS, NY 147290	7254 04 77 0 9 .	99Y532 0 0 106	MIKE ADAMS HJPS		
1001111110000	2200000000000000000	2400000001000000000	2600000111011111111		
35401010101067	6766666646746646	6765667666160116	0160001040021120		
14056741641411	4056732100107700	0076711536305530	3313756502124775		
Y, ENGLAND 19	48567321 09 77 0	087.71Y536 0 0	I GENE EARLOWE		
11111110111111	3201111100000000000	340000000000000010	360000000000011001		
20202100500110	1211046666666666	4664664616056636	6150116066600007		
31214771431416	7261104612075301	0020740031361115	4306530276275337		
SARATOGA,CALIF	ORNIA 4612075301	02 74 0 1 .11Y5	4 0 0 762GE		

รูปที่ 4.7 แสดงรายละเอียดของข้อมูลที่ได้ออกจากโปรแกรม XTAPE/CMD ในกรณี

Compressed

0	FILE	XTAPECMP/TXT (154)	LPN	2 (0000002)	PDA	MSR,LSR
DATA SECTOR						
001111011111100	020111011110111111	040111000000000000	0600000000000000			
001200402221210	2014112050011012	1104666666666666	64664160566366			
07275025227717	3160272543141672	6110223121210100	60740304600154			
ORGE BURROW	SAN JOSE, CALIFOR	NIA 2231212101 0	6 74 0 .00Y54			
00000001001001	120001111001111111	140110011000000000	1600000000000000			
11607761541541	5400111020211102	1154001066666666	66666466417057			
53031030604604	6031441771301674	7640431634512120	21004075031461			
0 983H. L. L	. CALL WASHINGT	ON, DC 34512120	21 04 75 0 .0			
00000000000111	220111011110011111	240110111111011000	2600000000000000			
71601160776211	0104112111021012	1042001202511466	76667666466667			
03055303115274	1640312311144164	1302537243462014	14670254003070			
8 0 0 995ROL	AND KIPK ATLANT	IC RECORDS,NJ 14	04678254 03 78			
00001000000000	320000010101111111	340001111111110011	3601111100000000			
05772666160166	6160152520311102	1101001110015400	21013466661600			
36111552305500	1323262625167443	1027524167564075	25161070313532			
1 .99Y552 0 00	1 2 J.P. REYNOLDS	BOEPLINGEN, GE	PMANY 7031 5			

0	FILE	XTAPECMP/TXT (154)	LPN	3 (0000003)	PDA	MSR,LSR
ATA SECTOR						
00000000000000	020000010000000000	040001111101111100	0601111111111101			
06664664664666	7577366616016666	7610211041010211	21100101100150			
01100040730334	1611155630550017	0101274402155310	31645461675647			
110 04 73 334	9.99Y556 0 0017	RICHARD JAMES	SINDELFINGEN, G			
11000000000000	120000000000001000	140000000001001001	1601111100111100			
13666617066646	6466416075773661	6016666661542540	20211112021254			
61703131302100	6077030316111563	0650032105600603	25016100121340			
NY7031 9 021 0	6 77 0 9.99Y56	0 003210Y. P. C	PERIN PARIS, F			
11000000000000	22000000000000010	240000000000001111	2601101011111100			
00106666666666	4664664666757736	6616016656661200	22404102002210			
35171234567010	0030750334161115	6430550032140525	24030052252414			
CE 1234567010	03 75 3349.99Y5	64 0 003214HJBF	PT C HERRERT			
11111001110000	320000000000000000	340000000100000000	3600000011111110			
32010540015106	6666661604664664	1607577166716016	66776211112200			
16145403146153	4112123030060730	3021611656030550	0301001410053			
YVALE, CAL. 3	411212 0 06 73	0 9.99Y58 0 0	03830PHILIPPE			

รูปที่ ๓.7 (ต่อ) แสดงรายละเอียดของข้อมูลที่ปรากฏในเทป XTAFB/CMD ในกรณี

Compressed

DATA SECTOR	FILE	XTAPECMP/TXT (154)	LRN	4 (0000004)	PDA	MSB,LSE
000111110011001	02011110011111100000	040000000000000000	0601000000000000001			
004211215412441	10054020100111161	6746646641607577	145616016666662			
600351404022006	1354062163510300	2000507403031611	657230550040043			
SMITH, JR N	ICE, FRANCE 0	28 05 74 0 9.99	N572 0 00400457			
101111100111111	120001111111000000	140000000000000000	160000100000000000			
142112111020111	5412010101061606	6666646646646667	5771666160166160			
603514012452416	4012541641573132	1210201107301251	6116576205500343			
N SMITH DUBLIN	, IRELAND 7 1 2	12102 11 73 1259	.99N576 0 00 4			
111111010111111	2200011111011110010	240111000000000000	2600000000000000010			
001101414001203	1021221400105425	0015446666666666	4664664160757716			
416154077714711	1537540025644036	4136006121212010	0100730303161165			
DANIEL O'GALWAY	SOUTH BEND, S.	DAK. 6121212010	10 73 0 9.99N5			
000000000010100	3201111111001111111	340110011111000000	3600000000000000001			
160166676705054	0222012112211320	1054001105106666	6666664666664007			
306500407046360	3522564103566161	4540314166133221	2120100060730337			
0 0048780.C.	CURRENT, SUNNYVA	LE, CALIF. 3221	212010 06 73			

DATA SECTOR	FILE	XTAPECMP/TXT (154)	LRN	5 (0000005)	PDA	MSB,LSE
00000000100000	0200000000010010011	040111111001110111	060111111001100000			
006677577167616	0166666615425410	2020100102014020	1012015402544160			
705311611650430	5500500526036041	6525635153160621	6313374031600307			
5399.99N584 0	005005J. S. LA	VERENCE SAN FRA	NOISCO, CA. 0			
00000000000000	1200100000000000001	140111011111110011	1601111110011111000			
64674664160757	7167716016661601	0014102201001020	2021005400110510			
010000730303161	1650030550053432	5160417256351731	2147714031416614			
01 08 73 0 9.9	9N588 0 005 4 J	EAN LAWRENCE SA	PATOGA, CALIF.			
00000000000000	220000000001000000	2400000001111011111	2600010001111110011			
66666666466466	4676757716761601	6666761111401001	4110100122115410			
71212020010074	0000161165123055	0055012706014456	0313162734764051			
71212020 10 74	0809.99N592 0	005581JOHN ALDEN	I BOSTON, MA			
00000000000000	3200000000000000100	340000000000011010	3600100111001110001			
510666666666664	6646646667577167	6160166666602425	4254102111024007			
61741312120110	0407400251611651	6305500601642076	0450212106570237			
4131212011	04 74 0259.99N59	6 0 0060160P W.	T. KAP NEW			

รูปที่ 3.7 (ต่อ) แสดงรายละเอียดของข้อมูลที่จัดเก็บในรูปแบบ XTAPE/CMD ในกรณี Compressed

FILE	XTAPECMP/TXT (154)	LRN	6 (0000006)	PDA	MSB,LSB
ATA SECTOR					
011111001111110	020000000000000000	040000000000100000	060000001111110111		
00011154110101	0666666666664666	6416075777616016	6666621111014102		
04540140164111	4703312112100507	4030316001620750	0667071441150310		
DELHI, INDIA	7033121121 05 7	4 0 9.88Y6 0 0	06670WILLIAM KAP		
01110111100101	120000000000000000	140000000000010000	160000000001101111		
11024312154153	5106666666666666	4664666757716661	6016667670240021		
06570172340661	6162121212031001	0750350160066043	0550061604001421		
NEW YORK, N.Y	2121212031 01	75 3509.88N604	0 00696808 ADRI		
01111100111111	220110011111100000	240000000000000000	260000001000000000		
41112001012221	0354010101010666	6676666467466416	0757736671601666		
03762141405234	5140567416414567	1302122001074030	3160016000055007		
KONRAD HURSL	EY, ENGLAND 567	1382122 09 74 0	9.88Y608 0 007		
0111111011111	320100111111110011	340111110000000000	360000000000000001		
00210122040102	110222200225400	2101344666661606	6466466466675007		
72217144505132	6163454471244075	2516100703113031	0010075050016327		
FRIGITTE FICR	N STUTTGART, GE	PMANY 70311 0 1	0 10 75 5009.		

FILE	XTAPECMP/TXT (154)	LRN	7 (0000007)	PDA	MSB,LSB
ATA SECTOR					
00010000000000	02000010010011111111	040111001111110111	060100111100000000		
07716661601666	6670540542111101	2111020021104012	3540010541606666		
00066123055007	2402603607144115	3761425477740314	1403146607331212		
BRN612 0 007	248B. C. WILLIAM	SON REDWOOD CIT	Y, CALF. 3 1212		
0000000000000	120010000000000000	140000000000010000	160000000001101111		
14654664160757	7166616010666466	4664666757716661	6016667670240021		
0100750303160	0661630553031001	0750350160066043	0550061604001421		
10 75 0 9.8	8N616 0 031 01	75 3509.88N604	0 00696808 ADRI		
11111100111111	220110011111100000	240000000000000000	260000001000000000		
1112001012221	0354010101010666	6676666467466416	0757736671601666		
3762141405234	5140567416414567	1302122001074030	3160016000055007		
KONRAD HURSL	EY, ENGLAND 567	1382122 09 74 0	9.88Y608 0 007		
1111111011111	320100111111110011	340111110000000000	360000000000000001		
0210122040102	110222200225400	2101344666661606	6466466466675007		
2217144505132	6163454471244075	2516100703113031	0010075050016327		
FRIGITTE FICR	N STUTTGART, GE	PMANY 70311 0 1	0 10 75 5009.		

รูปที่ ง.7 (คง) แสดงรายละเอียดของหน่วยข้อมูลที่ได้ออกจากโปรแกรม XTAPE/CMD หน่วย

Compressed

0	FILE	XTAPECMP/TXT (154)	LPN	8 (0000010)	PDA	MSR,LSR
ATA SECTOR						
00000000000000	02000010010011111111	0401110011111110111	060100111100000000			
0000000601666	6670540542111101	2111020021104012	3540010541606666			
00000003055007	2402603607144115	3761425477740314	1403146603331212			
0 007	2498. C. WILLIAM	SON REDWOOD CIT	Y, CALIF. 3 1212			
00000000000000	12001000000000000000	140000000000010000	160000000001101111			
04654664160757	7166616010666466	4664666757716661	6016667670240021			
30100750303160	0661630553031001	0750350160066043	0550061604201421			
10 75 0 9.8	8N616 0 03L 01	75 3509.88N604	0 0060600R ADPI			
0111110011111	220110011111100000	240000000000000000	260000001000000000			
41112001012221	0354010101010666	6676666467466416	0757736671601666			
03762141405234	5140567416414567	1302122001074030	2160016003055007			
KONRAD HURSL	EY, ENGLAND 567	1382122 09 74 0	9.98Y608 0 007			
0111111011111	32010011111110011	340111110000000000	360000000000000001			
50210122040102	1102222200225400	2101344666661606	6466466466675007			
72217144505132	6163454471244075	2516100703113031	0010075050016327			
FRIGIYTE EICR	N STUTTGART, GE	PMANY 70311 0 1	0 10 75 5009.			

รูปที่ ง.7 (ต่อ) แสดงรายละเอียดของแฟ้มข้อมูลที่ไต่จากโปรแกรม XTAPE/CMD ในกรณี

Compressed

0	FILE	XTAPEXPN/TXT (160)	LRN	0 (0000000)	DDA	MSP, LSE
ATA SECTOR						
01111110000000	020111100000000000	04000011111100000	0600001111100011110			
0121002444444	10104444444444444	4440002022444444	4442111044400204			
06552520000000	6155000000000000	000144253200000	0000076500041450			
NUMBER	NAME	ADDRESS	PHONE	DATE		
11111100111111	120100000000000000	140000000000000000	160000000000000000			
01121244011101	24415555555555555	5555555555555555	5555555555555555			
15756400375556	4005555555333333	333333333333335F	5555555555555555			
AMOUNT	COMMEN	T	-----+-----	+++++-----		
00000000000000	220000000000000000	240000000000010101	260111110000000001			
55555555555555	55555555555555555	5554166666615050	02102444444444441			
33333333555555	5533333333555555	5550500010036564	1615300000000000			
+++++-----	-----+-----	--- 000100K.E.0	AVIFF			
11111100111111	320100000000000000	340000000000010000	260000000000002332			
22112054010101	0446666666766667	46646666666636666	6666416666607356			
03012540567416	4003215677021001	0770010061115200	0000050001007777			
PSHIRE, ENGLAN	D 3215677821 09	77 0100.11YF200	0000 00010			

0	FILE	XTAPEXPN/TXT (160)	LRN	1 (0000001)	DDA	MSP, LSE
ATA SECTOR						
00101011111111	020000000001111111	040110011111110000	060000000000000000			
06252501002211	4444444421101022	0254010101047766	6676664444444466			
02062614452376	0000000071630534	5240567416401035	6103120110770111			
P.P.R. ALDERSON	WINCHEST	ER, ENGLAND 9835	618312 11 77 111			
01000000000000	120000001010111111	140000000000111111	160101111111000000			
62766666666416	6666605150120102	444444440002110	2501010104444667			
11524000000050	0010446562774452	0000000002515415	5456741640000120			
1Y52400000 0	001040.M.BOWLER	BEAULIF	U, ENGLAND 128			
00000000000000	220000001000000000	240000000111110111	260100000000111111			
76664664666467	7757736676666641	6666660201143022	0444444444013022			
1304004077001	1161115200000005	0001056216302100	100000000212122			
0304 04 77 09	-99.99Y52800000	000105FRANK 7APP	A			
1111110011000	320000000000000000	340000000100000000	2600000000111102332			
0012025413466	6676666646646646	7775773666666664	1666666111007356			
5372434061014	7210725400407700	1116111532000000	5000106513537777			
ECOROS, NY 14	72907254 04 77 0	999.99Y52200000	000106MIKE			

รูปที่ ง.8 แสดงรายละเอียดของแฟ้มข้อมูลที่ได้ออกจากโปรแกรม XTAPE/CMD ในกรณี
Non-compressed

0	FILE	XTAPEXPN/TXT (160)	LPN	2 (0000002)	PDA	MSB,LSB
ATA SECTOR						
00111110000000	0200001111111001111	040111000000000000	060000000000000001			
04000124444444	4441222103540101	0104444676766666	6447466466765663			
00141530000000	0000523451405674	1640000114056722	1001077000076711			
ADAMS	HURSFY, ENGL	AND	194856732			1 02 77 0087.71Y
00000000000000	1201111011111110000	140000011111110111	160111111100000000			
56666641666666	0010400211204444	4444202021005001	1012110466666666			
50000005000111	7565021247750000	0000312147714314	1672611046120753			
500000 000111	GENE PARLOWE	SAPATOGA, CAL	1500000 46120752			
00000000000000	2201000000000000000	2400111111011111100	2600000011101111011			
466466466666566	3666666664166666	6001200402221244	4444420141120500			
00207400111611	1540000000500076	2757275025227700	0000071600735431			
02 74 0111.11	Y54000000 00076	2GEORGE PURROW	SAN JOSE, CA			
11111100000000	3200000000000000000	3400100000000000000	3600010010010002333			
01211046666666	6664664664666666	6366666666416667	7615415415407356			
57261102231212	1010060740000060	0154400000050001	0306046046037777			
CORNIA 2231212	101 06 74 0000.0	0Y54400000 0009	FRH. L. L.			

0	FILE	XTAPEXPN/TXT (160)	LPN	3 (0000003)	PDA	MSB,LSB
ATA SECTOR						
01111000000011	0201111111100110000	040000000000000000	060000000000100000			
00011444444420	2111021154004444	44666666666664564	6447777577366766			
03144000000071	3016747640430000	0034512120210040	7501111611154000			
CALL WA	SHINGTON, DC	3451212021 04	75 9999.99Y54800			
00000000111111	1201011110000000001	1401111111011111110	1601100000000000000			
4166677621101	0411214444444440	2101210420012025	1146676667666466			
00500011527416	40312300000000001	4416413025372434	6201414570254003			
00099500LAN	D KIRK	A	TLANTIC RECORDS, NJ 1404678254 03			
0000000010000	220000000000001010	2401111111100000000	2601111111110011111			
4677757736666	6666416666661525	2031110244444444	0100111001540021			
0011161115520	0000050012222626	2516744300000000	2752416756407525			
0999.99Y5520	0000 001222J.R.	REYNOLDS	ROSELINGEN, GERM			
0000000000000	320000000000001000	340000000000001111	3601110111110002333			
46666666566646	6466466675773666	6666641666676103	1104101024407356			
0703155511000	4073033416111556	000005001701012	7440315520237777			
7031555110 0	4 73 3342.99Y556	00000 001781HAR	CLD JAMES			

FILE 0.8 (MS) AND 0.9 (MS) ARE NOT SUPPORTED BY THE CURRENT XTAP/CHK PROG

Non-compressed

0	FILE	XTAPEXPN/TXT (160)	LPN	4 (0000004)	PDA	MSP, LFR
ATA SECTOR						
00000001111111	0201111101111111000	0400000000000000000	0600000010000000000	04444442110010	1100150021012666	6777666466466466
00000002164546	1675647525161703	1111021006077000	0161115600000000	SINDEL		
	INGEN, GERMANY703	1999021 05 77 00	09.99Y56000000			
00001001001111	1201100000000111110	1400111111000000000	1600000000000000000	66661542540202	1144444444202125	4020100444444466
32105600603250	1600000000012134	0621635000000012	3456701000307503	2210M. P. CREP		
	IN	PARIS,	FRANCE.	12	24567010 03 75 3	
00001000000000	2200000000111111010	2401111111000011111	2601111001110000000	757735666666654	16665666120022404	1020022444422113
16111564000000	5003214052524030	0522524000035661	6145402146000003	9.99Y56400000		
	003214HUBERT C	HEPPEBT	SUNNY	VALF, CAL. 3		
00000000000000	3200000001000000000	3400000000111111111	3600111110011002333	66666664664664	6667577166766666	4166677621111220
12120000060730	00016116560000000	0500301000141005	0351404022027777	1212000 06 73		
	0009.99Y56800000	003800PHILIPPE	SMITH, JR			

0	FILE	XTAPEXPN/TXT (160)	LPN	5 (0000005)	PDA	MSP, LFR
ATA SECTOR						
00111001111111	0200000000000000000	0400000000000000000	0601000000000000000	04110054020100	4444444666666666	6746646546667577
00613540621635	00000000000000000	2000507400001611	6572000000500400	NICE, FRANCE		
	00000000	28 05 74 0009.99	N57200000 00400			
11011111000000	1200000011111100111	1401111100000000000	1600000000000000000	0142112144444	4444402011154120	1010444446666666
16035140000000	0000045241640125	4164000007111212	1020110730125161	DAN SMITH		
	00000000	LAND	7111212	DUBLIN, IRE		
00000000000000	2200011111101011111	2401000001111101111	2600010111000000000	06666666416666	6600110141400120	3444442122140010
07600000050044	4541615407771471	1000003754002564	4026413600012121	07600000 0044		
	450ANIEL D'GALWA	Y	SOUTH BEND	, S.DAK. 612121		
00000000000000	3200010000000000000	3400010100111111110	3600000000111102333	6466466466675	7716756666641666	7670505402220124
0010073000016	116500000005004	0704636035225640	000000056637777	0 10 73 0009.		
	99N5800000 004	780.C. CURRENT	SUNNY			

FILE 0.8 (HE) แล่นจกไฟล์เก็บข้อมูลในระบบ เก็บข้อมูลใน XTAPE/OMD 1.002

Non-compressed

O	FILE	XTAPEXPN/TXT (160)	LPN	6 (0000006)	PDA	MSB,LSP
TA	SECTOR					
1111100111110	020000000000000000	040000000000010000	06000000000001001			
3201054001105	4446666666666666	4664667757716766	6666416666661542			
1614540314166	0002221212010006	0730531161165040	0000050050052602			
YVALE, CALIF.	3221212010 06	73 5399.9945840	0000 005005J. 6			
1111111100000	120111011111111001	140100000000000000	160000000000001000			
0202010044444	2014020101201540	0544666666666666	7466466675771677			
1652563500000	3160621631337403	1600000000010100	0073000016116500			
AVEPENCE	SAN FRANCISCO, C	A. 0000000101 0	P 73 0009.99N588			
0000000000111	220101111111000000	240011111110011111	260000000000000000			
6641666666100	1410220100444444	4202021005400110	5444466666666664			
0005005444251	6041725635000000	0312147714031416	6000067712120200			
000 005444JEA	N LAWRENCE	SAPATOGA, CALIF	. 6771212020			
0000000000100	320000000000000001	340110111110111000	3600011111100102333			
5646767577167	6666664166667611	1140100141114444	4401221154107356			
7400001611651	2000000500550127	0601445601110000	0027347640537777			
74 0809.99N59	200000 005581JD	HN ALDEN III	BOSTON, M			

O	FILE	XTAPEXPN/TXT (160)	LRN	7 (0000007)	PDA	MSB,LSP
TA	SECTOR					
1100000000000	020000000000000000	040000000100000000	0600000000110100100			
0225444444466	6666666646646646	6675771676666664	1666666024254254			
336000000041	3121201100407400	2516116516000000	5006016420760460			
ASS.	41	31212011 04 74 0	259.99N59600000			006016DP W. Y.
0000000011101	120111100111110000	140000000000000000	160000000100000000			
444444410240	0111541101044446	6666666646646646	6667577366666666			
0000000065704	5401401641100007	0331211210050740	0001600160000000			
NEW D	ELHI, INDIA	7	0009.88Y60000000			
0000111111110	2201111000000001110	240111100101000000	260000000000000000			
666621111014	1022444444441024	3121541535444444	6666666665456466			
1667071441150	3100000000006570	1723406616000000	2121212031001075			
16670WILLIAM	KAPP	NEW YORK, N.Y.	2121212001 01 75			
0000100000000	3200000000001101111	340110111110000011	3601111001111102333			
7577166666666	6416667670240021	0141112004444122	2103540101007356			
160066040000	0050061604201421	1603762140000052	2451405674137777			
S.88N6040000	0 006968DP ADPI	AN KONRAD HUR	SLEY, ENOLA			

รูปที่ 3.6 (ต่อ) แสดงรายละเอียดของข้อมูลที่ส่งมาในรูปแบบ XTAPE/OMD ในกรณี

Non-compressed

0	FILE	XTAPEXPN/TXT (160)	LRN	8 (0000010)	PDA	MSB,LSB
TA SECTOR						
1100000000000	0200000000000000000	0400100000000000000	06000111111111011111			
1044446666676	6664674664666757	7366766666416666	6602101220401021			
6400005671302	1220010740000160	0160000000050070	0722171445051326			
ND 5671382	122 09 74 0009.8	8Y60800000 0070	07BRIGITTE EICRN			
0001111111110	1200111111100000000	1400000000000000000	1600010000000000000			
4442222200225	40021013446666666	6666466466466675	7716666666641666			
0003454471244	0752516100703110	0010010075050016	0066120000005007			
STUTT GART,	GERMANY 703110	0010 10 75 5009.	88N61200000 007			
1001001111111	2201110000111111101	2401110011110000000	2600000000000000000			
0540542111101	2114444200211040	1235400105466666	6666646646646667			
2603607144115	3760000254777403	1414031466033312	1211101007500001			
B. C. WILLIAM	SON REDWOOD C	ITY, CALF. 33312	12111 10 75 0009			
1000000000000	3200000000001101111	3401101111110000111	3601111001111102333			
1666666664106	6416667670240021	0141112004444122	2103540101007356			
5616000000530	0050061604201421	1603762140000052	3451405674137777			
N61600000 0	0 006968DP ADRI	AN KONRAD HUP	SLEY, ENGLA			

0	FILE	XTAPEXPN/TXT (160)	LRN	9 (0000011)	PDA	MSB,LSB
TA SECTOR						
0000000000000	0200000000000000000	0400100000000000000	06000111111111011111			
0000006666676	6664674664666757	7366766666416666	6602101220401021			
0000003671302	1220010740000160	0160000000050070	0722171445051326			
671382	122 09 74 0009.8	8Y60800000 0070	07BRIGITTE EICRN			
0001111111110	1200111111100000000	1400000000000000000	1600010000000000000			
4442222200225	40021013446666666	6666466466466675	7716666666641666			
0003454471244	0752516100703110	0010010075050016	0066120000005007			
STUTT GART,	GERMANY 703110	0010 10 75 5009.	88N61200000 007			
0010011111111	2201110000111111101	2401110011110000000	2600000000000000000			
0540542111101	2114444200211040	1235400105466666	6666646646646667			
2603607144115	3760000254777403	1414031466033312	1211101007500001			
B. C. WILLIAM	SON REDWOOD C	ITY, CALF. 33312	12111 10 75 0009			
0000000000000	3200000000001101111	3401101111110000111	3601111001111102333			
666666664106	6416667670240021	0141112004444122	2103540101007356			
-616000000530	0050061604201421	1603762140000052	3451405674137777			
616000000 0	0 006968DP ADRI	AN KONRAD HUP	SLEY, ENGLA			

รูปที่ ๓.๘ (ต่อ) แสดงรายละเอียดของหน่วยข้อมูล ที่โปรแกรม XTAPE/CMD ควบคุม

Non-compressed

ประวัติ

นายสุทธิพงษ์ มีสมสาร เกิดวันที่ 1 มีนาคม พ.ศ. 2499 ที่จังหวัด
พระนครศรีอยุธยา สำเร็จการศึกษา เศรษฐศาสตรบัณฑิตจากคณะเศรษฐศาสตร์
มหาวิทยาลัยรามคำแหง พ.ศ. 2521 และเข้าศึกษาในชั้นปริญญาโท สาขา
คอมพิวเตอร์ศาสตร์ ภาควิชาวิศวกรรมคอมพิวเตอร์ ในปี พ.ศ. 2523 ปัจจุบัน
เป็นพนักงานโปรแกรมระบบ ศูนย์คอมพิวเตอร์ การรถไฟแห่งประเทศไทย

