

MAY 01 1981

BELL TELEPHONE LABORATORIES, INCORPORATED

10-313

COMMON SYSTEMS
FOR USE WITH NO. 3 ESS
ARRANGED WITH 2-WIRE FEATURES
COMMON NONRESIDENT UTILITIES
(CNRUTL)

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ISSUE 5
02/06/81

AT&TCO
SPCS

PR-1C954-50
313 PAGES

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SECTION DICTIONARY

NUMBER	NAME	MAXIMUM	ORIGIN	TYP	ADDRESS-MODIFICATION
01	CNRUTIL	0000025		C	
02	NRUTS	0001012		C	
03	TAPUTL	0003235		C	
04	ENTRDPRG	0000251		C	
05	CMRPRROG	0000444		C	
06	OWPROG	0004036		C	
07	NRPRES	0000053		C	
08	CPATCH	0000711		C	
09	CPATCH1	0001124		C	
0A	CPATCH2	0000347		C	
0B	CPATCH3	0000134		C	
0C	CPATCH7	0000361		C	
0D	TFAPCH2	0002242		C	
0E	TPATCH	0000000		C	

COMMON NONRESIDENT UTILITIES

PR-1C954-50

00:32:20 02/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE A1



0010000
0010000
0010000

```

01 DBNAM NO33E3I3.OFF.DATABASE
02 RELNAM NO3ESS
03 GETLIB LIBRARY, MEMBER=MOPTBL
04 GETLIB LIBRARY, MEMBER=SYSMAC
05 GETLIB LIBRARY, MEMBER=SYSSYM
06 GETLIB LIBRARY, MEMBER=PATCH2
07 FIRSTOPTSS
08 VERSION 3ACC, FIELD, ESS2E
09 PATCHINIT
10 NO33E3I3.OFF.OPMS(0) DECK
11 DSQUAL NO33E3I3
12 LISTING N, CRUNCH=Y, SYSOUT=N
13 #####
14 ##
15 ## UNIX ID = NO3PAG
16 ##
17 #####
18 #####
19 ###
20 #### pid date time rel
21 ###
22 #### cnrutl 1/24/81 17:57:29 7.1.1.1
23 ###
24 #####
25 NAME CNRUTL

```

0010000
0010025
0015232
0022611
0020554
0011037
0007302

29 ## The following is a list of the valid csects for program CNRUTL

```

31 CNRUTIL CSECT
32 NRUTS CSECT
33 TAPUTL CSECT
34 ENTRDPRG CSECT
35 CMPRPROG CSECT
36 OWPROG CSECT
37 NRPRES CSECT

```

0111432
0112562
0114107
0115073
0121236

40 ## The following csects are necessary for patching

```

42 CPATCH CSECT
43 CPATCH1 CSECT
44 CPATCH2 CSECT
45 CPATCH3 CSECT
46 CPATCH7 CSECT

```

D01

0:32:20 2/06/81 ****

CNRUTL W77D

0116774

01 TFAPCH2 CSECT

0600000

03 TPATCH CSECT

COMMON NONRESIDENT UTILITIES

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0:32:20 2/06/81 ****

CNRUTL W77D

01	GETLIB	MEMBER=CCSYM
02	GETLIB	MEMBER=SPMAC
03	GETLIB	MEMBER=TTYMAC
04	GETLIB	MEMBER=TTYSYM
05	GETLIB	MEMBER=GPMAC
06	GETLIB	MEMBER=TAPMAC
07	GETLIB	MEMBER=TAPSYM
08	GETLIB	MEMBER=BSAIMAC
09	GETLIB	MEMBER=CTVTAB
10	OPMWD	OPRSW 0

DO NOT PRINT OPMWD

COMMON NONRESIDENT UTILITIES

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ASSEMBLY PROLOGUE

0:32:20 2/06/81 ****

CNRUTL W77D

01 # THIS ASSEMBLY CONSISTS OF A SET OF UTILITY ROUTINES WHICH MAY BE
02 # NONRESIDENT. THE ROUTINES SUPPLY THE CRAFTSPERSON WITH "TOOLS" TO FIND
03 # AND/OR FIX PROBLEMS IN THE HARDWARE OR SOFTWARE. IT IS ASSUMED
04 # THAT THESE "TOOLS" WILL NOT BE NEEDED TO PROBE OTHER NONRESIDENT
05 # PROGRAMS BECAUSE TWO NON-RESIDENT PROGRAMS CANNOT BE ACTIVE SIMULTANEOUSLY.
06 # THE ROUTINES THAT HAVE BEEN COMBINED IN THIS ASSEMBLY ARE INDEPENDENT
07 # EXCEPT FOR THE ABOVE COMMON PURPOSE AND THE FACT THAT THEY SHARE
08 # A SINGLE MULTISCAN FUNCTION DESIGNATION. THIS WAS DONE SOLELY TO
09 # AVOID CREATING ADDITIONAL MULTISCAN FUNCTIONS.
10
11 # THE FIRST PROGRAM SECTION IS A VERY SHORT ROUTINE TO DIFFERENTIATE BETWEEN
12 # THE VARIOUS UTILITY ROUTINES IN THIS ASSEMBLY. IT IS REQUIRED BECAUSE ALL OF
13 # THEM ARE PART OF THE SAME MULTISCAN FUNCTION. THIS SECTION BEGINS AT NRUBGN.
14
15 # THIS SECTION IS FOLLOWED BY A SECTION WHICH ALLOCATES ANY SCRATCH STORAGE
16 # AREA REQUIRED BY ANY OF THE FOLLOWING SECTIONS. ALL SCRATCH AREA FOR THIS
17 # ENTIRE ASSEMBLY UNIT MUST BE CONSOLIDATED IN THE SECTION SO THAT IT CAN BE
18 # EASILY ALLOCATED FOR LOADINGS IN WHICH THESE ROUTINES ARE MADE RESIDENT.
19
20 # THE REMAINING SECTIONS OF THIS ASSEMBLY UNIT IMPLEMENT DISJOINT AND
21 # INDEPENDENT UTILITY ROUTINES. THESE ROUTINES MAY EACH HAVE THEIR OWN TTY
22 # CATALOG TO DEFINE TTY INPUT MESSAGES IT SERVICES. IF SUCH A CATALOG IS
23 # CREATED, ITS IDENTITY MUST BE ENTERED IN THE MASTER TTY CATALOG HEAD TABLE IN
24 # TTYTBL. ALSO, THE PROCESSING ROUTINES FOR THESE CATALOG ENTRIES MUST ALWAYS
25 # BE RESIDENT WHEN THE CATALOG IS RESIDENT, IE, THE CATALOG MUST BE IN THE SAME
26 # SEGMENT AS THE PROCESSING ROUTINES THAT SERVICE ITS ENTRIES.
27
28 # THE UTILITY ROUTINES IMPLEMENTED BY THIS ASSEMBLY UNIT ARE:
29 # TAPE UTILITY--USED TO MANIPULATE THE TAPE UNIT.
30 # OFF-LINE REGISTER DUMP--USED TO PRINT THE CONTENTS OF REGISTERS IN THE OFF-LINE CC.
31 # MAIN STORE COMPARE--USED TO COMPARE ON-LINE AND/OR OFF-LINE DATA CONTENTS.
32 # OVERWRITE UTILITY--USED TO MAKE CHANGES TO PROGRAM.

COMMON NONRESIDENT UTILITIES

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PUBLIC SYMBOLS

0:32:20 2/06/81 ****

CNRUTL W77D

01	PUBLIC	ACTOW
02	PUBLIC	ALWDL
03	PUBLIC	ALWORD
04	PUBLIC	ALWOW
05	PUBLIC	ALWTAPE
06	PUBLIC	AUDITAPE
07	PUBLIC	CMPRMAS
08	PUBLIC	CNLOW
09	PUBLIC	COPYFILE
10	PUBLIC	COPYTAPE
11	PUBLIC	DLPG
12	PUBLIC	DMPREGOF
13	PUBLIC	DMPTAPE
14	PUBLIC	INGENID
15	PUBLIC	INISSID
16	PUBLIC	INITOWFI
17	PUBLIC	INOW
18	PUBLIC	INOWDATA
19	PUBLIC	INTAPE
20	PUBLIC	LODOMAS
21	PUBLIC	LODOW
22	PUBLIC	NRUBGN
23	PUBLIC	OPHASH
24	PUBLIC	OPHASHNR
25	PUBLIC	OPOW
26	PUBLIC	OPOWFILE
27	PUBLIC	OPTAPE
28	PUBLIC	ORDUTL
29	PUBLIC	RMVOW
30	PUBLIC	STOPOW
31	PUBLIC	STOPTAP
32	PUBLIC	TUUTCTL
33	PUBLIC	UPDHASH
34	PUBLIC	UPDOWFIL
35	PUBLIC	VERHASH
36	PUBLIC	VEROW

COMMON NONRESIDENT UTILITIES

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0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 5

EXTERNAL SYMBOL DEFINITIONS

0:32:20 2/06/81 ****

CNRUTL W77D

01	BLMMA	EXTERN	OFLUTIL	# MSF NUMBER OF NONRESIDENT UTILITY FCNS (SYMBOL)
03	BLMMA	EXTERN	TEMPINH_	
04	BLMMA	EXTERN	TEMPINH_	
05	BLMMA	EXTERN	TEMPINH_	
08	CBLM	EXTERN	ACTMSF	
09	CBLM	EXTERN	BGNPSAU	
10	CBLM	EXTERN	CK_OST	
11	CBLM	EXTERN	STOPPSAU	
12	CBLM	EXTERN	MSFABT	
13	CBLM	EXTERN	MSFREQN	
14	CBLM	EXTERN	OFL_STBY	
15	CBLM	EXTERN	OMASUPD	
16	CBLM	EXTERN	OTSUPD	
17	CBLM	EXTERN	PKEYM	
18	CBLM	EXTERN	QOFLCC	
19	CBLM	EXTERN	UPDOMAS	
20	CBLM	EXTERN	UQOFLCC	
21	CBLM	EXTERN	WAIT	
26	CIPL	EXTERN	ALLMAS	
27	CIPL	EXTERN	BTLODOFS	
28	CIPL	EXTERN	HASHLEN	
29	CIPL	EXTERN	OFLBTOFS	
30	CIPL	EXTERN	PROGBLKS	
31	CIPL	EXTERN	SYSTMOfS	
32	CIPL	EXTERN	TSFLG	
35	CDATH	EXTERN	CDLB	
40	COUTIL	EXTERN	ORDMSF	
43	CSYSUB	EXTERN	ADD16	
44	CSYSUB	EXTERN	BCDXBIN	
45	CSYSUB	EXTERN	BINXBCD	
46	CSYSUB	EXTERN	CLR_WRDS	
47	CSYSUB	EXTERN	CLR_16	
48	CSYSUB	EXTERN	CMFR20	
49	CSYSUB	EXTERN	EXCMCH	

COMMON NONRESIDENT UTILITIES

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EXTERNAL SYMBOL DEFINITIONS

0:32:20 2/06/81 ****

CNRUTL W77D

01 CSYSUB EXTERN EXCOFLPG
 02 CSYSUB EXTERN INIT_OCC
 03 CSYSUB EXTERN INITOST
 04 CSYSUB EXTERN L2_5
 05 CSYSUB EXTERN L2_7
 06 CSYSUB EXTERN L2_13
 07 CSYSUB EXTERN MOVST
 08 CSYSUB EXTERN RGCHKADR
 09 CSYSUB EXTERN ST2_7
 10 CSYSUB EXTERN ST2_13
 11 CSYSUB EXTERN SUBT6
 12 CSYSUB EXTERN TENZERO
 13 CSYSUB EXTERN TIMOUTX
 14 CSYSUB EXTERN WPOST
 15 CSYSUB EXTERN TIMCHK
 16 CSYSUB EXTERN TIMOUT
 17 CSYSUB EXTERN SENDMIO

20 CTAPH EXTERN ALWERRCV
 21 CTAPH EXTERN BLKDATA
 22 CTAPH EXTERN CLRMAINT
 23 CTAPH EXTERN I_OBUF
 24 CTAPH EXTERN INHERRCV
 25 CTAPH EXTERN INITTAPE
 26 CTAPH EXTERN JAMTU
 27 CTAPH EXTERN SETMAINT

LENGTH OF TAPE BLOCK HEADER

30 CTSD EXTERN AUMASCTL
 31 CTSD EXTERN MSFPROG
 32 CTSD EXTERN OFLUCTL
 33 CTSD EXTERN PAGSCR
 34 CTSD EXTERN SYSTATE
 35 CTSD EXTERN TCBADR
 36 CTSD EXTERN TUSTAT
 37 CTSD EXTERN UREQBUF
 38 CTSD EXTERN YEARS

41 CTTYH EXTERN MTTYIDLE
 42 CTTYH EXTERN PAPEROFF
 43 CTTYH EXTERN PAPERON

COMMON NONRESIDENT UTILITIES

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EXTERNAL SYMBOL DEFINITIONS

0:32:20 2/06/81 ****

CNRUTL W77D

01	CUTIL	EXTERN	CMRDBF	
02	CUTIL	EXTERN	LOADDB	
03	CUTIL	EXTERN	STPUTIL	
04	CUTIL	EXTERN	UREQ	
07	INITA	EXTERN	ZOSPWDS	
10	LAYOUT	EXTERN	HGAREA	
11	LAYOUT	EXTERN	I_OBUF	# INPUT/OUTPUT DATA BUFFER FOR TAPE
12	LAYOUT	EXTERN	TTY_MFA	
15	MASACS	EXTERN	BLKSIZE	# LENGTH OF TAPE BLOCK (SYMBOL)
16	MASACS	EXTERN	BLKMAX	
17	MASACS	EXTERN	CVTINDEX	# CONVERT NUMBER OF ESS WORDS TO 16-BIT WORDS
18	MASACS	EXTERN	DIRLOC	
19	MASACS	EXTERN	DIRTRK	
20	MASACS	EXTERN	HASHSUMF	
21	MASACS	EXTERN	HASHSUMN	
22	MASACS	EXTERN	HASHSUMP	
23	MASACS	EXTERN	LDWORD	# LOAD ONE ESS WORD (SUBR)
24	MASACS	EXTERN	OBUFLEN	# LENGTH OF I_OBUF USED BY OVERWRITE FCN
25	MASACS	EXTERN	RDOPS	# READ ONE PROTECTED STORE WORD (SUBR)
26	MASACS	EXTERN	SETRCBAP	# INHIBIT RECENT CHANGE BIT AUDIT MESSAGES
27	MASACS	EXTERN	STWORD	# STORE ONE ESS WORD (SUBR)
28	MASACS	EXTERN	UNPKWRDS	
29	MASACS	EXTERN	WOPS	
30	MASACS	EXTERN	MASCIOSC	# WRITE ONE PROTECTED STORE WORD (SUBR)
33	SEG000	EXTERN	NUM_SEGS	
34	SEG000	EXTERN	SEGTAB	
37	TDATA	EXTERN	STRLIM	
38	TDATA	EXTERN	TAPETBL	
39	TDATA	EXTERN	TDATA	
40	TDATA	EXTERN	WDSTR	
41	TDATA	EXTERN	STRLIM	
44	TTYAPP	EXTERN	LINKRDY	# CHECK IF LAST TTY OUTPUT MSG LINK IS DONE
45	TTYAPP	EXTERN	MFAD	

COMMON NONRESIDENT UTILITIES

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EXTERNAL SYMBOL DEFINITIONS

0:32:20 2/06/81 ****

CNRUTL W77D

01	TTYTBL	EXTERN	TTY_IP	#	TTY	INPUT	MESSAGE	RESPONSE	(SYMBOL)
02	TTYTBL	EXTERN	TTY_NG	#	TTY	INPUT	MESSAGE	RESPONSE	(SYMBOL)
03	TTYTBL	EXTERN	TTY_OK	#	TTY	INPUT	MESSAGE	RESPONSE	(SYMBOL)
04	TTYTBL	EXTERN	TTY_PF	#	TTY	INPUT	MESSAGE	RESPONSE	(SYMBOL)
05	TTYTBL	EXTERN	TTY_RL	#	TTY	INPUT	MESSAGE	RESPONSE	(SYMBOL)
06	TTYTBL	EXTERN	ALL						
07	TTYTBL	EXTERN	ALM						
08	TTYTBL	EXTERN	COMP						
09	TTYTBL	EXTERN	CORR						
10	TTYTBL	EXTERN	DETL						
11	TTYTBL	EXTERN	PATCH						
12	TTYTBL	EXTERN	UCL						

COMMON NONRESIDENT UTILITIES

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MACRO DEFINITIONS

0:32:20 2/06/81 ****

CNRUTL W77D

```

RTB          01  MACRO
              02  RTB      CODE,CLASS
              03  IS('CODE'='TTYIN')
              04  IFSO(LI RTBPM,*-RTBPMORG+4)
              05  IFSO(BL)IFNOT(BSA) ADVPM:CODE:CLASS
              06  SPACE 2
              07  BA1
              08  RTB MEND

```

```

CALLPROC    14  MACRO
              15  CALLPROC ADR
              16  LI PROCPM,*-RTBPMORG+4
              17  BL ADR
              18  BA1
              19  CALLPROC MEND

```

```

RTNPROC     25  MACRO
              26  RTNPROC RTNCODE
              27  LN RO,RTNCODE
              28  LR RTBPM,PROCPM
              29  BL BRTBPM
              30  MEND

```

```

TUFCODE     36  MACRO
              37  TUFCODE FNAME
              38  PMC ON
              39  FNAME:FN EQU (*-BPAXTUTL)/2
              40  PMC OFF
              41  BA1
              42  BL FNAME:MON
              43  MEND

```

COMMON NONRESIDENT UTILITIES

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CONSTANT DEFINITIONS

0:32:20 2/06/81 ****

CNRUTL W77D

01 R1 LAYOUT
02 OFLUNO ITEM 3

OFLUCTL WORD FORMAT AS USED BY OW PROGRAM
NUMBER IDENTIFIES WHICH OFFLINE UTILITY TO RUN

04 LOEND

-003- 05 #

R1
00

*****														OFLUNO	
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

16 RD LAYOUT
17 ABTB ITEM 1
18 1STB ITEM 1
19 LOEND

ENTRY FLAGS FOR MULTISCAN FUNCTIONS
ABORTING MSF
FIRST ENTRY TO MSF

-003- 20 #

RD
00

*****														1STB	ABTB
15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

COMMON NONRESIDENT UTILITIES

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CONSTANT DEFINITIONS

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CNRUTL W77D

01	TUCOPYCTL LAYOUT WORDS=10	
02	UTCTL ITEM 4	# UTILITY CONTROL MAJOR STATE
03	LOSkip 0,0	
04	MBKNO ITEM 16	# FIRST BLOCK-TRACK NUMBER
05	SUBST ITEM 16	# SUBSTATE INDEX
06	CBKNO ITEM 16	# SECOND BLOCK-TRACK NUMBER
07	LNKS ITEM 16	# LINK NUMBER SAVE AREA
08	SGNO ITEM 16	# POINTS TO IO BUFFER (INDEX)
09	TPNO ITEM 16	# TAPE NUMBER
10	LENGTH ITEM 16	# NUMBER OF BLOCKS TO COPY
11	LASBLK ITEM 16	# LAST BLOCK TO COPY
12	AUX2 ITEM 16	# EXTRA STORAGE AREA
13	LCEND	

TUCOPYCTL	-003- 14 #	
00		UTCTL
01		UTILITY CONTROL MAJOR STATE
02		MBKNO
03		FIRST BLOCK-TRACK NUMBER
04		SUBST
05		SUBSTATE INDEX
06		CBKNO
07		SECOND BLOCK-TRACK NUMBER
08		LNKS
09		LINK NUMBER SAVE AREA
10		SGNO
11		POINTS TO IO BUFFER (INDEX)
12		TPNO
13		TAPE NUMBER
14		LENGTH
15		NUMBER OF BLOCKS TO COPY
16		LASBLK
17		LAST BLOCK TO COPY
18		AUX2
19		EXTRA STORAGE AREA
		15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

COMMON NONRESIDENT UTILITIES

PR-1C954-50

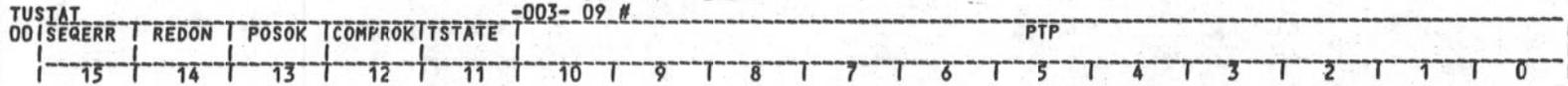
0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 12

CONSTANT DEFINITIONS

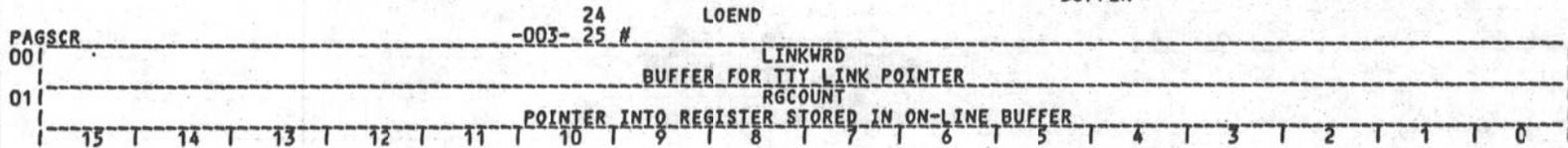
0:32:20 2/06/81 ****

CNRUTL W77D

01 TUSTAT LAYOUT 1,FLTBLK # TAPE STATUS WORD.
 02 PTP ITEM 11
 03 TSTATE ITEM 1
 04 COMPROK ITEM 1
 05 POSOK ITEM 1
 06 REDON ITEM 1
 07 SEQERR ITEM 1
 08 LOEND



20 PAGSCR LAYOUT 2
 21 LINKWRD ITEM 16 #BUFFER FOR TTY LINK POINTER
 22 RGCOUNT ITEM 16 #POINTER INTO REGISTER STORED IN ON-LINE BUFFER



COMMON NONRESIDENT UTILITIES

PR-1C954-50

CONSTANT DEFINITIONS

0:32:20 2/06/81 ****

CNRUTL W77D

0000001	01 INDEX EQU	R1	# INDEX REGISTER
0000005	02 RGCOUNTR EQU	R5	# COPY OF STORE WORD RGCOUNT
0006070	08 REFSTOP EQU	0(6070)	
0006060	09 REFSTRT EQU	0(6060)	
7777777	13 E00WF EQU	-0	# ALL ONES OW LENGTH MARKS END OF OW FILE
0000000	14 OWINACT EQU	0	# OW STATUS IS INACTIVE
0000001	15 OWACT EQU	1	# OW STATUS IS ACTIVE
0000003	16 OWDEAD EQU	3	# OW STATUS IS DEAD
0077777	18 32KMSK EQU	MSK(15)	# HASHSUM MASK
0007777	19 4KMSK EQU	MSK(12)	# HASHSUM MASK
0000037	20 32SEGMSK EQU	MSK(5)	# SEGMENT MASK
0000100	21 HASHLENMAX EQU	D(64)	# MAXIMUM HASHSUM CALC. LENGTH

25 # ADDRESSES (WITHIN I_OBUF) OF PARAMETERS FOR THE OFFLINE BOOTSTRAP
 26 BOOTLOADADR TEXT 'I_OBUF+I_OBUFD+2+BTLODOFS' # ADDR OF BOOTLOAD
 27 OFLBOOTBL TEXT 'I_OBUF+I_OBUFD+2+OFLBTOFS' # BEGINNING OF TABLE
 28 OFLSYSTIM TEXT 'I_OBUF+I_OBUFD+2+SYSTNOFS' # OFFLINE SYSTIM ADDRESS

COMMON NONRESIDENT UTILITIES

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CONSTANT DEFINITIONS

0:32:20 2/06/81 ****

CNRUTL W77D

01 R2	LAYOUT	12	# LAYOUT OF OVERWRITE PROGRAM CONTROL BLOCK
02 OWBPTR	ITEM	16	# POINTER TO CURRENT POSITION IN THE OW BUFFER
04 IOBPTR	ITEM	16	# POINTER TO CURRENT POSITION IN THE INPUT-OUTPUT BUFFER
06 TTYVERB	ITEM	16	# FIRST DICTIONARY WORD OF TTY INPUT MESSAGE
07 TTYID1	ITEM	16	# SECOND DICTIONARY WORD OF TTY INPUT MESSAGE
08 OWNUM	ITEM	16	# OW NUMBER IDENTIFIER
09 TTY_OP	ITEM	1	# TTY OPTION WAS REQUESTED.
10 NEW_OP	ITEM	1	# NEW OPTION WAS REQUESTED.
11 BLKCHGD	ITEM	1	# DATA CHANGED IN THIS TAPE BLOCK (LOD:OW)
12 UCL_OP	ITEM	1	# UNCONDITIONAL ACT:OW REQUEST
13 TRN_OP	ITEM	1	# REQUEST TYPE (GENERIC OR TRNSLN)
14 NOBGN	ITEM	1	# NO BEGINNING ADDRESS SPECIFIED
15 NOLAST	ITEM	1	# NO LAST ADDRESS SPECIFIED
16 OWFILSW	ITEM	1	# OWFILE PRINT SWITCH
17	LOSKIP		
18 RTBPM	ITEM	14	# OW PROGRESS MARK
19 TAPEACT	ITEM	1	# REQUEST TO TAPE HANDLER IS ACTIVE
20 TTYACT	ITEM	1	# TTY LINKED OUTPUT IS ACTIVE
21 TTYLINK	ITEM	16	# INFORMATION FOR TTY LINKED OUTPUT
22 PROCPM	ITEM	16	# 'RETURN ADDRESS' OF A PROCEDURE
23 PROCSCR	ITEM	16	# SCRATCH REGISTER FOR USE BY PROCEDURES
24	ITEM	ADDR	# RAO
25	LOEND		

COMMON NONRESIDENT UTILITIES

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CONSTANT DEFINITIONS

0:32:20 2/06/81 ****

CNRUTL W77D

R2	-003- 01 #
00	OWBPTR POINTER TO CURRENT POSITION IN THE OW BUFFER
01	IOBPTR POINTER TO CURRENT POSITION IN THE INPUT-OUTPUT BUFFER
02	TTYVERB FIRST DICTIONARY WORD OF TTY INPUT MESSAGE
03	TTYID1 SECOND DICTIONARY WORD OF TTY INPUT MESSAGE
04	OWNUM OW NUMBER IDENTIFIER
05	LOWFILSWINOLAST NOBGN ITRN_OP UCL_OP BLKCHGD INEW_OP TTY_OP
06	TTYACT TAPEACT RTBPM OW PROGRESS MARK
07	TTYLINK INFORMATION FOR TTY LINKED OUTPUT
08	PROCPM 'RETURN ADDRESS' OF A PROCEDURE
09	PROCSR SCRATCH REGISTER FOR USE BY PROCEDURES
10	*****
11	RA0
	15 14 13 12 11 10 9 8 7 6 5 4 3 2 1 0

COMMON NONRESIDENT UTILITIES

PR-1C954-50

CONSTANT DEFINITIONS

0:32:20 2/06/81 ****

CNRUTL W77D

```

01 R8 LAYOUT 1 # OPTION FLAGS FOR MAIN STORE COMPARE
02 ON_OFF ITEM 1 # COMPARE ONLINE TO OFFLINE
03 ON_CON ITEM 1 # COMPARE ONLINE TO CONSTANT
04 OFF_CON ITEM 1 # COMPARE OFFLINE TO CONSTANT
05 ALL_OP ITEM 1 # DO NOT SKIP TEMPORARY STORE
06 ALM_OP ITEM 1 # ALARM A MISMATCH
07 COMP_OP ITEM 1 # READ WITH COMPLEMENT CORRECT STORE READS
08 ONL_ERR ITEM 1 # ONLINE PARITY ERROR
09 OFL_ERR ITEM 1 # OFFLINE PARITY ERROR
10 WIDE_OP ITEM 1 # WIDE STORE FLAG
11 LOEND

```

```

R8 ----- -003- 12 #
001 |-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
|*****|*****|*****|*****|*****|*****|*****|*****|*****|*****|
| 15 | 14 | 13 | 12 | 11 | 10 | 9 | 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 | 0 |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

CONSTANT DEFINITIONS

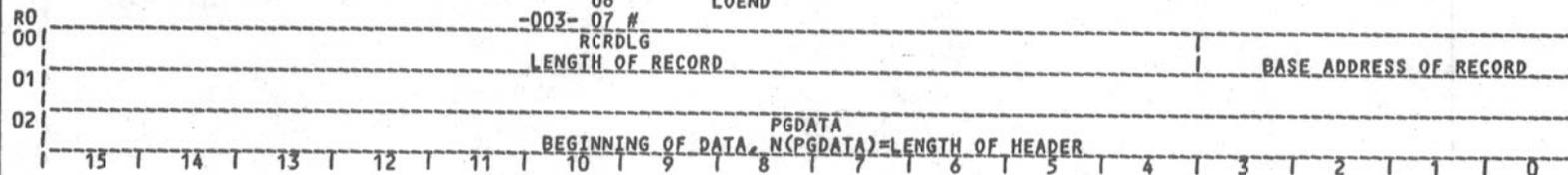
0:32:20 2/06/81 ****

CNRUTL W77D

01 RO LAYOUT 3
 02 ITEM ADDR
 03 RCRDLG ITEM 12
 04 PGDATA ITEM 16

BASE ADDRESS OF RECORD
 # LENGTH OF RECORD
 # BEGINNING OF DATA, $N(PGDATA)=LENGTH$ OF
 HEADER

06 LOEND



COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 19

CONSTANT DEFINITIONS

0:32:20 2/06/81 ****

CNRUTL W77D

01	OWFIL	LAYOUT	13	
02	ITEM		16	# LENGTH OF OWFILE HEADER
03	ITEM		16	# ALL ONES
04	ITEM		8	# GENID
05	ITEM		8	# GENID
06	ITEM		8	# GENID
07	ITEM		8	# GENID
08	ITEM		8	# GENID
09	ITEM		8	# GENID
10	ITEM		8	# GENID
11	ITEM		8	# GENID
12	ITEM		8	# ISSID
13	ITEM		8	# ISSID
14	ITEM		8	# ISSID
15	ITEM		8	# ISSID
16	ITEM		8	# ISSID
17	ITEM		8	# ISSID
18	ITEM		8	# ISSID
19	ITEM		8	# ISSID
20	ITEM		16	# SPARE
21	ITEM		16	# SPARE
22	ITEM		16	# BEGINNING OF HEADER OF FIRST OW - INITIALLY ALL ONES

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 20

CONSTANT DEFINITIONS

0:32:20 2/06/81 ****

CNRUTL W770

0WFILE	-003- 01 #															
001	LENGTH OF OWFILE HEADER															
011	ALL ONES															
021	GENID								GENID							
031	GENID								GENID							
041	GENID								GENID							
051	GENID								GENID							
061	ISSID								ISSID							
071	ISSID								ISSID							
081	ISSID								ISSID							
091	ISSID								ISSID							
101	ISSID								ISSID							
111	SPARE															
121	SPARE															
122	BEGINNING OF HEADER OF FIRST OW - INITIALLY ALL ONES															
	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0

COMMON NONRESIDENT UTILITIES

PR-1C954-50

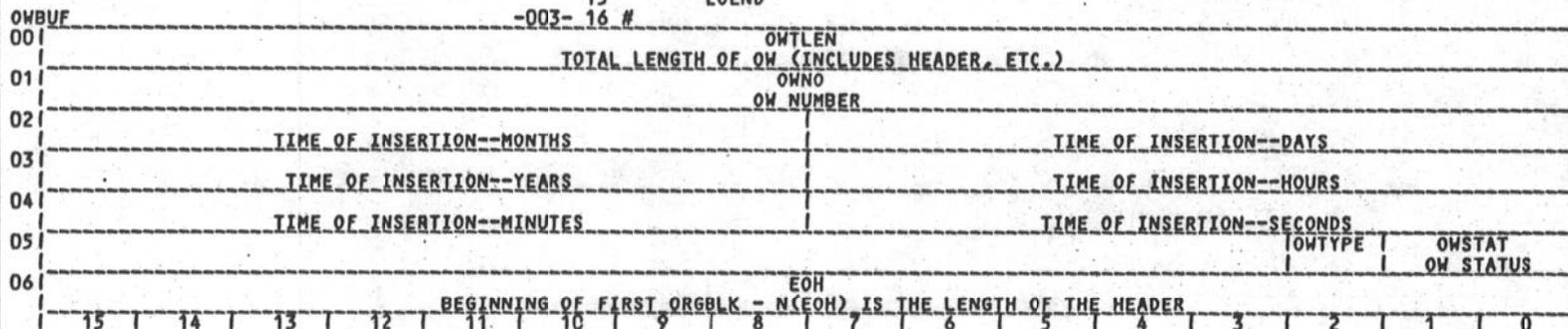
CONSTANT DEFINITIONS

0:32:20 2/06/81 ****

CNRUTL W77D

```

-001- 01 OWBUF LAYOUT 7, CLASS=FLTBLK
      02 OWTLEN ITEM 16 # TOTAL LENGTH OF OW (INCLUDES HEADER, ETC.)
      03 OWNO ITEM 16 # OW NUMBER
      04 ITEM 8 # TIME OF INSERTION--DAYS
      05 ITEM 8 # TIME OF INSERTION--MONTHS
      06 ITEM 8 # TIME OF INSERTION--HOURS
      07 ITEM 8 # TIME OF INSERTION--YEARS
      08 ITEM 8 # TIME OF INSERTION--SECONDS
      09 ITEM 8 # TIME OF INSERTION--MINUTES
      10 OWSTAT ITEM 2 # OW STATUS
      11 OWTYPE ITEM 1 # TYPE OF OW (GENERIC OR TRANSLATION)
      12 LOSKIP
      13 EOH ITEM 16 # BEGINNING OF FIRST ORGBLK - N(EOH) IS THE
                        LENGTH OF THE HEADER
      15 LOEND
  
```



COMMON NONRESIDENT UTILITIES

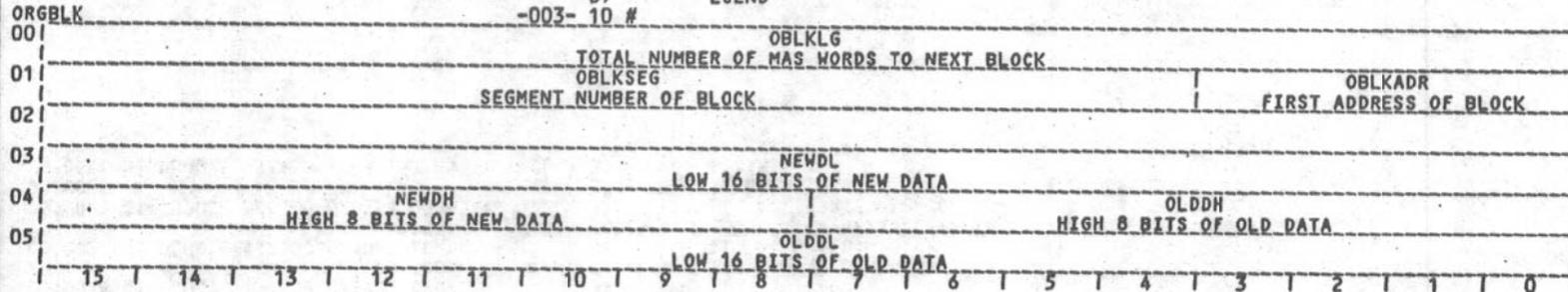
PR-1C954-50

CONSTANT DEFINITIONS

0:32:20 2/06/81 ****

CNRUTL W77D

01	ORGBLK LAYOUT	6	#	FORMAT OF AN ORIGIN BLOCK IN THE OW BUFFER
02	OBLKLG ITEM	16	#	TOTAL NUMBER OF MAS WORDS TO NEXT BLOCK
03	OBLKADR ITEM	ADDR	#	FIRST ADDRESS OF BLOCK
04	OBLKSEG ITEM	12	#	SEGMENT NUMBER OF BLOCK
05	NEWDL ITEM	16	#	LOW 16 BITS OF NEW DATA
06	OLDDH ITEM	8	#	HIGH 8 BITS OF OLD DATA
07	NEWDH ITEM	8	#	HIGH 8 BITS OF NEW DATA
08	OLDDL ITEM	16	#	LOW 16 BITS OF OLD DATA
09	LOEND			



COMMON NONRESIDENT UTILITIES

PR-1C954-50

NONRESIDENT UTILITY PROGRAM MONITOR

0:32:20 2/06/81 ****

CNRUTL W77D

0010000

01 CNRUTIL CSECT

02 # THIS IS A SHORT ROUTINE TO DIFFERENTIATE BETWEEN THE
 03 # VARIOUS UTILITY ROUTINES IN THIS ASSEMBLY. THE CHOICE
 04 # IS BASED ON THE CONTENTS OF A RESIDENT CONTROL WORD
 05 # WHICH IS ASSUMED TO HAVE BEEN PREVIOUSLY LOADED
 06 # IN AN ENVIRONMENT WHERE THESE ROUTINES ARE NONRESIDENT
 07 # THIS MONITOR WILL TYPICALLY BE OVERLAID AFTER ONE ENTRY
 08 # WITH THE DESIRED UTILITY ROUTINE. THUS BOTH THIS MONITORED
 09 # AND ALL THE INDIVIDUAL UTILITY ROUTINES MUST BE WRITTEN
 10 # AS IF THEY WERE MULTISCAN FUNCTIONS. SEE DEFINITION OF A
 11 # MULTISCAN FUNCTION IN ASSEMBLY UNIT CBLM.

0010000

0010000

0010000 01 000000 130420 043177 CTSD

0010002 01 000002 003422 000007

0010004 01 000004 010437 -----

0010005 01 000005 056001 -----

0010006

0010006

0010006 01 000006 156463 -----

0010007 01 000007 006000 -----

0010010 01 000010 137000 011037 0011037

0010012 01 000012 137000 015232 0015232

0010014 01 000014 137000 022611 0022611

0010016 01 000016 137000 021322 COUTIL

0010020 01 000020 137000 023062 CDATH

0010022 01 000022 137000 020554 0020554

0010024

0010024

0010024 01 000024 156463 -----

15 NRUBGN

16

17 R1

-004- 18

-004- 19

-005- 20

21

22 BPAXORG

23

-001- 24

25

26 OWPG

27

28 TUUTIL

29

30 OFLREGDMP

31

32 ORDUTL

33

34 DLP6

35

36 CMPPRG

37

-001- 38

39

BEGIN ()

= OFLUCTL & M(OFLUNO) /RL 1

LL R1,OFLUCTL

NI R1,M(OFLUNO)

RLN R1,1

BPAX R1

BPAXORG

RETURN 3

BTSAN 3

NOP

EQU (*-BPAXORG)/2

BL XTR(OWMSF)

EQU (*-BPAXORG)/2

BL XTR(TAPUMON)

EQU (*-BPAXORG)/2

BL XTR(ENTRDRPG)

EQU (*-BPAXORG)/2

BL ORDMSF

EQU (*-BPAXORG)/2

BL CDLB

EQU (*-BPAXORG)/2

BL XTR(CMPRPROG)

RETURN 3

BTSAN 3

STOP MSF--NO UTILITY ACTIVE

UNUSED

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 24

NONRESIDENT UTILITY TEMPORARY STORE DEFINITION

0:32:20 2/06/81 ****

CNRUTL W77D

01 # ALL SCRATCH AREA REQUIRED BY ANY ROUTINE IN THIS ASSEMBLY UNIT
 02 # IS DEFINED IN THIS SECTION. THE CONTROLLING PROGRAM NAME IDENTIFIES
 03 # THE ROUTINES WHICH USE EACH BLOCK. SINCE THE ROUTINES ARE
 04 # INDEPENDENT, THEIR SCRATCH AREAS CAN BE SHARED. THIS IS DONE
 05 # TO CONSERVE SPACE.

0010025 06 NRUTS CSECT
 0010025 07 OWCTL TSD 12
 -001- 08 OWCTL
 -001- 09 # THE CONTENTS OF THIS BLOCK WILL BE ZEROED AT INITIALIZATION LEVEL 1.

0010041 11 # CONTROLLING PROGRAM: OWPROG
 12
 13 # PURPOSE OR USE:
 14 # CONTAINS POINTERS AND MEMORY USED IN THE EXECUTION
 15 # OF THE OVERWRITE PROGRAM.

0010041 21 SEQKEY TSD 1
 -001- 22 SEQKEY
 -001- 23 # THE CONTENTS OF THIS BLOCK WILL BE ZEROED AT INITIALIZATION LEVEL 1.

0010042 25 # CONTROLLING PROGRAM: OWPROG
 26
 27 # PURPOSE OR USE:
 28 # CONTAINS A KEY USED AS A PARTIAL CHECK ON THE SEQUENCING
 29 # OF INPUT MESSAGES.

0010042 35 GENISS TSD 8
 -001- 36 GENISS
 -001- 37 # THE CONTENTS OF THIS BLOCK WILL BE ZEROED AT INITIALIZATION LEVEL 1.

0010052 39 # CONTROLLING PROGRAM: OWPROG
 40
 41 # PURPOSE OR USE:
 42 # CONTAINS THE GENERIC IDENTIFIER IN THE FIRST FOUR
 43 # WORDS AND THE ISSUE IDENTIFIER IN THE LAST FOUR WORDS.
 44 # EACH IDENTIFIER CONSISTS OF EIGHT ASCII CHARACTERS PACKED
 45 # TWO PER WORD.

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 25

NONRESIDENT UTILITY TEMPORARY STORE DEFINITION

0:32:20 2/06/81 ****

CNRUTL W77D

0010052 01 REGBUF # 40 WORDS REQUIRED, SHARES OMBUFFER
 0010052 02 # CONTROLLING PROGRAM: DMPREGOF
 03
 04 # HOLDS THE CONTENTS OF REGISTERS AS THEY ARE BEING PRINTED

0010052 10 TUUTCTL # 10 WORDS REQUIRED, SHARES OMBUFFER
 0010052 11 # CONTROLLING PROGRAM: TAPUTL
 12
 13 # HOLDS CONTROL INFORMATION FOR THE TAPE UTILITY ROUTINE.

0010052 19 TUCOPYCTL # 10 WORDS REQUIRED SHARES OW BUFFER
 20 # CONTROLING PROGRAM:TAPUTL
 21 # HOLDS CONTROL INFORMATION FOR THE TAPE COPY ROUTINES

0010052 27 OMBUFFER TSD .501
 -001- 28 OMBUFFER
 -001- 29 # THE CONTENTS OF THIS BLOCK WILL BE ZEROED AT INITIALIZATION LEVEL 1.

0010052 31 # CONTROLLING PROGRAM: OWPROG
 32
 33 # PURPOSE OR USE:
 34 # THE OVERWRITE BUFFER IS CAPABLE OF HOLDING ONE COMPLETE
 35 # OVERWRITE. IT IS USED TO TRANSFER OVERWRITES BETWEEN THE
 36 # TELETYPEWRITER, THE OVERWRITE FILE ON TAPE, AND THE
 37 # PROGRAMS TO BE OVERWRITTEN.

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 26

EQU DEFINITIONS

0:32:20 2/06/81 ****

CNRUTL W77D

0000013	01 IOBNDX EQU	R11
0000005	02 LENOB EQU	R5
01 0000031	03 BUFPATCH EQU	TUUTCTL+4
0000006	04 OWBNDX EQU	R6
0000012	05 OW_LEN EQU	R10

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 27

TAPE UTILITY MULTISCAN FUNCTION
 TAPE UTILITY ADMINISTRATIVE CONTROL

0:32:20 2/06/81 ****

CNRUTL W77D

0015232

01 TAPUTL CSECT

02 # THE TAPE UTILITY PROVIDES THE CAPABILITY TO MANIPULATE INDIVIDUAL PHYSICAL
 03 # BLOCKS OF DATA ON TAPE. THE CONTENTS OF A PARTICULAR BLOCK CAN BE PRINTED ON
 04 # THE TTY, READ INTO MAIN STORE, OR CHANGED BY BEING OVERWRITTEN BY THE CONTENTS
 05 # OF A DEDICATED TAPE BUFFER (I_OBUF).

0015232

09 TAPUMON

0015232 10 # CONTROL FOR THE MSF OF TAPE HANDLER UTILITIES
 0015232 11 BEGIN ()
 0015232 03 000000 131040 010052 0010052 12 LAL R2,TUUTCTL,RAO
 0015234 03 000002 024000 ----- 13 TBN R0,0 # CHECK IF ABORTING IP
 0015235 03 000003 050000 020215 0020215 14 BCL ABORTTU
 0015237 03 000005 006060 ----- 15 LR R3,R0 # SAVE 1ST ENTRY DATA
 0015240 03 000006 024001 ----- 16 TBN R0,1
 0015241 03 000007 055012 ----- 0015253 17 BNC NOT1ST # CHECK IF FIRST ENTRY P.O. NEEDED
 0015242 18 PRINT PACTION=M,FMT=(WRD(A,L,W),WRD(T,A,P,E,U,T,I,L),WRD(C,O,M,P,L))

-001- 20 # MESSAGE PROTOTYPE
 -001- 21 # M mm ALW TAPEUTIL COMPL
 0015242 03 000010 073053 ----- -002- 22 BSAI PXMRY # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
 0015243 03 000011 102200 ----- -002- 23 VFD 1,1 2,0 1,0 3,2 1,0 1,1 1,0 2,0 1,0 3,0
 0015244 03 000012 021040 ----- -002- 24 VFD 4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_WRD
 0015245 03 000013 021042 ----- -002- 25 VFD 4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_
 0015246 03 000014 014004 ----- TTYTBL -002- 26 VFD 5,3 11,AXLW
 0015247 03 000015 000246 ----- TTYTBL -002- 27 VFD 5, 11,tapeutil
 0015250 03 000016 000302 137020 TTYTBL -002- 28 VFD 5, 11,cxompl
 -001- 29 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
 CONTAINED IN GENERAL REGISTERS
 0015251 31 CALL INHERRCV # INHIBIT ERROR RECOVERY FROM OTHER TAPE
 0015251 03 000017 137020 127453 CTAPH -001- 32 BSA INHERRCV
 0015253 33 NOT1ST
 0015253 03 000021 124061 ----- 34 TBN R3,1 # IS THIS FIRST ENTRY TO TAPE UTIL.
 0015254 03 000022 055006 ----- 0015262 35 BNC NOCLR # NO
 0015255 03 000023 003000 ----- 36 ZR R0 # PREPARE TO ZERO CONTROL BLOCK.
 0015256 03 000024 003067 ----- 37 LN R3,7 # NO. OF WORDS IN BLOCK
 0015257 38 CLRX
 0015257 03 000025 146003 ----- 39 STX R0,R3(RAD) #ZERO
 0015260 03 000026 036060 015257 0015257 40 BX R3,CLRX

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 28

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY ADMINISTRATIVE CONTROL

CNRUTL W77D

		01 # MAJOR STATE TRANSFER VECTORS		
0015262	,	02	NOCLR	
0015262	03 000030 140000 -----	03	L	RO,0(RAD) # GET FUNCTION NUMBER.
0015263	03 000031 040022 -----	04	L	R1,N(SUBST)(RAD) # GET SUBSTATE
0015264	03 000032 010417 -----	05	RLN	RO,1
0015265	03 000033 056000 -----	06	BPAX	RO
0015266		07	BPAXTUTL	
0015266		08	RETURN	2
0015266	03 000034 156462 -----	-001- 09	BTSAN	2
0015267	03 000035 006000 -----	10	NOP	
0015270		11	TUFCODE	DMP
	0000001	-001- 12	DMPFN	EQU (*-BPAXTUTL)/2
0015270	03 000036 137000 015745 0015745	-001- 13	BL	DMPMON
0015272		14	TUFCODE	DMPD
	0000002	-001- 15	DMPDFN	EQU (*-BPAXTUTL)/2
0015272	03 000040 137000 016241 0016241	-001- 16	BL	DMPDMON
0015274		17	TUFCODE	DMPL
	0000003	-001- 18	DMPLFN	EQU (*-BPAXTUTL)/2
0015274	03 000042 137000 016414 0016414	-001- 19	BL	DMPLMON
0015276		20	TUFCODE	DMPS
	0000004	-001- 21	DMPSFN	EQU (*-BPAXTUTL)/2
0015276	03 000044 137000 016157 0016157	-001- 22	BL	DMPSMON
0015300		23	TUFCODE	IN
	0000005	-001- 24	INFN	EQU (*-BPAXTUTL)/2
0015300	03 000046 137000 016602 0016602	-001- 25	BL	INMON
0015302		26	TUFCODE	OP
	0000006	-001- 27	OPFN	EQU (*-BPAXTUTL)/2
0015302	03 000050 137000 016613 0016613	-001- 28	BL	OPMON
0015304		29	TUFCODE	AUDIT
	0000007	-001- 30	AUDITFN	EQU (*-BPAXTUTL)/2
0015304	03 000052 137000 016631 0016631	-001- 31	BL	AUDITMON
0015306		32	TUFCODE	COPYFILE
	0000010	-001- 33	COPYFILEFN	EQU (*-BPAXTUTL)/2
0015306	03 000054 137000 017460 0017460	-001- 34	BL	COPYFILEMON
0015310		35	TUFCODE	COPY
	0000011	-001- 36	COPYFN	EQU (*-BPAXTUTL)/2
0015310	03 000056 137000 017317 0017317	-001- 37	BL	COPYMON
0015312		38	TUFCODE	LOMAS
	0000012	-001- 39	LOMASFN	EQU (*-BPAXTUTL)/2
0015312	03 000060 137000 017115 0017115	-001- 40	BL	LOMASHON
0015314		41	TUFCODE	LOMASBT
	0000013	-001- 42	LOMASBTFN	EQU (*-BPAXTUTL)/2
0015314	03 000062 137000 017656 0017656	-001- 43	BL	LOMASBTMON

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 29

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY TTY INPUT MESSAGE PROCESSING ROUTINES

CNRUTL M77D

0015316

01 INTAPE

02 # IN:TAPE a,BLK(b,cccc)! INPUT MESSAGE HANDLING ROUTINE.
 03 # THIS MESSAGE WILL READ A BLOCK OF DATA FROM THE TAPE AND
 04 # PLACE IT IN THE I/OBUFFER.
 05 # THIS SECTION OF CODE WITH THE AID OF SUBROUTINES FSTCHK
 06 # AND STORTBT CHECKS THE TAPE UTILITY PROGRAM FOR BEING
 07 # ACTIVE AND NOT BUSY WITH ALL CONTROL DATA PRESENT AND
 08 # LEGAL. IF THIS CHECK IS SUCCESSFUL ALL THE CONTROL DATA
 09 # FROM THE TTY ALONG WITH ALL OTHER NECESSARY DATA GENERATED
 10 # BY THIS CODE IS STORED IN THE TAPE UTILITY CONTROL BLOCK
 11 # (TUUTCTL).

0015316

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0015316

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0015316

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0015316

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0015320

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0015321

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0015321

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0015323

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0015324

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0015325

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0015326

22

0015326

23

BEGIN ()
 CALL FSTCHK
 BSA FSTCHK
 BNC TTYOUT
 CALL STORTBT
 BSA STORTBT
 BNC TTYOUT
 LN RD,INFN
 ST RD,N(UTCTL)(RAO)
 RETURN TTY_IP
 BTSAN TTY_IP

RO = NONZERO
 # STORE TRACK, BLOCK, AND TAPE NUMBER
 # RO = NONZERO
 # STORE CONTROL NUMBER AT LOCATION UTCTL

COMMON NONRESIDENT UTILITIES

PR-1C954-50

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY TTY INPUT MESSAGE PROCESSING ROUTINES

CNRUTL W77D

0015327

01 OPTAPE

```

02 # OP:TAPE a,BLK(b,cccc)! INPUT MESSAGE HANDLING ROUTINE.
03 # THIS MESSAGE WILL WRITE A BLOCK ON TAPE WITH DATA FROM
04 # THE I/OBUFFER.
05 # THIS SECTION OF CODE WITH THE AID OF SUBROUTINES FSTCHK
06 # AND STORTBT CHECKS THE TAPE UTILITY PROGRAM FOR BEING
07 # ACTIVE AND NOT BUSY WITH ALL CONTROL DATA PRESENT AND
08 # LEGAL. IF THIS CHECK IS SUCCESSFUL ALL CONTROL DATA FROM
09 # THE TTY ALONG WITH ALL OTHER NECESSARY DATA GENERATED BY
10 # THIS CODE IS STORED IN THE TAPE UTILITY CONTROL BLOCK
11 # (TUUTCTL).
12

```

0015327

0015327

0015327

0015327

0015327

0015331

0015332

0015332

0015334

0015335

0015336

0015340

0015341

0015341

0015342

0015342

0015343

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0015344

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```

BEGIN      ( )
CALL      FSTCHK
BSA       FSTCHK
BNC       TTYOUT
CALL      STORTBT
BSA       STORTBT
TZ        RO
BNC       TTYOUT
CI        R8,1
BNC       OKGO
RETURN    TTY_NG
BTSAN     TTY_NG

LN        RO,OPFN
ST        RO,N(UTCTL)(RAO)
RETURN    TTY_IP
BTSAN     TTY_IP

```

RO = NONZERO

RO = NONZERO

NOT TRACK 1

STORE CONTROL NUMBER AT LOCATION UTCTL

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 31

```

0015345          01 DMPTAPE
02 # DMP:TAPE a,BLK(b,cccc)!
03 # DMP:TAPE a,SEG dddd!
04 # DMP:TAPE a,LABEL!
05 # DMP:TAPE a,DIRECTRY!
06 # INPUT MESSAGE HANDLING ROUTINE.
07 # THESE INPUT MESSAGES DO THE FOLLOWING:
08 # 1 DUMP A BLOCK OF TAPE TO TTY.
09 # 2 DUMP A SEGMENT FROM TAPE TO TTY.
10 # 3 DUMP THE TAPE LABEL FILE FROM TAPE TO TTY.
11 # 4 DUMP THE TAPE DIRECTORY FILE FROM TAPE TO TTY.
0015345          12
13 # THIS SECTION OF CODE WITH THE AID OF SUBROUTINES FSTCHK AND
14 # STORTBT CHECKS TO SEE IF THE TAPE UTILITY PROGRAM IS ACTIVE
15 # AND NOT BUSY WITH ALL CONTROL DATA PRESENT AND LEGAL (THE
16 # LABEL DUMP USES FSTCHK ONLY). IF THIS CHECK IS SUCCESSFUL ALL
17 # CONTROL DATA FROM TTY ALONG WITH ALL OTHER DATA GENERATED BY
18 # THIS CODE IS STORED IN THE TAPE UTILITY CONTROL BLOCK (TUUTCTL).
19 # THIS CODE ALSO DETERMINES WHICH DUMP ROUTINE IS REQUESTED.
20
0015345          21
0015345          22          BEGIN      ( )
0015345          23          CALL      FSTCHK
0015345          24          BSA      FSTCHK
0015345          25          BNC      TTYOUT          # RO = NONZERO
0015345          26          SPELL   R7,(S,E,G),OP=CI  # SEGMENT DUMP?
0015350 03 000113 137020 020102 0020102 -001- 27          CI      R7,SXEG
0015352 03 000120 054020 0015372          28          BC      CONVSEG          # CONVERT SEGMENT TO BLOCK ADDRESS
0015353 03 000121 003565 001246 TTYTBL -001- 29          SPELL   R7,(L,A,B,E,L),OP=CI # LABEL DUMP?
0015355 03 000123 054062 0015437          30          CI      R7,LXABEL
0015356 03 000124 003565 001054 TTYTBL -001- 31          BC      LABDMP          # GO TO LABEL DUMP ROUTINE
0015360 03 000126 054037 0015417          32          SPELL   R7,(D,I,R,E,C,T,R,Y),OP=CI # DIRECTORY DUMP?
0015361 03 000127 003565 000272 TTYTBL -001- 33          CI      R7,directry
0015363 03 000131 055072 0015455          34          BC      DIRDMP          # GET TRACK AND BLOCK NUMBER
0015364          35          SPELL   R7,(B,L,K),OP=CI  # BLOCK DUMP ?
0015364 03 000132 037020 020117 0020117 -001- 36          CI      R7,BXLK
0015366 03 000134 155066 0015454          37          BNC     TTYOUTNG
0015367 03 000135 003001 0015454          38          CALL     STORTBT          # STORE TRACK, BLOCK AND TAPE NUMBER
0015370 03 000136 044000 0015454          39          BSA     STORTBT
0015371          40          BNC     TTYOUT          # RO = NONZERO
0015371          41          LN      RO,DMPFN          # GET FUNCTION NUMBER
0015371          42          ST      RO,N(UTCTL)(RAO)
0015371          43          RETURN  TTY_PF
0015371 03 000137 056463 0015454 -001- 44          BTSAN  TTY_PF
    
```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY TTY INPUT MESSAGE PROCESSING ROUTINES

CNRUTL W77D

```

0015372          01 CONVSEG
                02 # THIS ROUTINE GETS THE BLOCK ADDRESS OF A REQUESTED SEGMENT
                03 # NUMBER AND PREPARES IT FOR USE IN THE DUMP SEGMENT ROUTINE

0015372 03 000140 131401 146674 SEG000          05 LAL      RO,SEGTAB,RA1      # SET RA1 TO SEGEMENT TABLE
                06 TAPUTL OW      0(142)      # 12650
-001- 07      NOTE      ***** THE FIRST ADDRESS OVERWRITTEN IS 000142 *****

0015374 03 000142 044210 -----          10 ST      R8,N(AUX1)(RA0)      # STORE SEGMENT NUMBER
0015375 03 000143 006010 -----          11 LR      RO,R8
0015376          12 EOW      # 12650
-001- 13      NOTE      ***** THE LAST ADDRESS OVERWRITTEN IS 000143 *****

0015376          16 CALL     BCDXBIN
0015376 03 000144 073030 -----          -001- 17 BSAI     BXCDBIN      # SUBROUTINE BCDXBIN IS IN PROGRAM CSYSUB
                18 TAPUTL OW      0(145)      # 12650
-001- 19      NOTE      ***** THE FIRST ADDRESS OVERWRITTEN IS 000145 *****

0015377 03 000145 114000 -----          22 TZ      RO
0015400 03 000146 037000 020436 0020436          -001- 23 TAPUTL BGNP    0(3204)      # 12650
                -001- 24 BL      XXX440
                -001- 25 NOTE     TAPUTL 'CSECT'
                -001- 26 NOTE     ***** PATCH AREA BEGINS AT 003204 *****

0020436          -001- 29 XXX440 PATCHAREA
                30 DPATCH NOTE      # REPLACE BCL WITH BC
0020436 03 003204 150000 015455 0015455          31 BCL     TTYOUTNG
0020440 03 003206 006220 -----          32 LR      R9,RO
0020441 03 003207 004237 -----          33 SN      R9,1
0020442          34 ENDP     # 12650
0020442 03 003210 037000 015402 0015402          -001- 35 BL      XXX442
                -001- 36 NOTE     ***** LAST PATCH ADDRESS USED IS 003211 *****
                -001- 37 NOTE     ***** NUMBER OF PATCH WORDS USED IS 6 (DECIMAL) *****

0015402          -001- 40 XXX442 OMCONTINUE
0015402 03 000150 110637 -----          41 RLN     R9,1
0015403          42 EOW     # 12650
-001- 43      NOTE     ***** THE LAST ADDRESS OVERWRITTEN IS 000150 *****

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COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

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TAPE UTILITY TTY INPUT MESSAGE PROCESSING ROUTINES

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0015403 03 000151 004621 ----- 01 AN R9,1
0015404 03 000152 042411 ----- 02 LX RO,R9(RA1) # GET BLOCK ADDRESS
                                03 TAPUTL OW O(153) # 12650
                                -001- 04 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000153 *****

0015405 03 000153 014000 ----- 07 TZ RO # LOGICAL BLOCK ADR = 0 ?
                                08 DPATCH NOTE ! REPLACE BNCL WITH BNC
                                09 BNCL CALBXB
0015406 03 000154 050400 020445 0020445 10 CI R8,1 # IS SEG NO. GREATER THAN 1
0015410 03 000156 003605 000001 11 BNC TTYOUTNG # SEGMENT NUMBER TOO LARGE
0015412 03 000160 055043 ----- 0015455 12 LN R9,10 # SAME AS TYPING 0
0015413 03 000161 003232 ----- 13 TAKEOUT 1
0015414 03 000162 006000 ----- -001- 14 LR O,0
                                15 TAPUTL BGNP O(3212) # 12650
0015415 03 000163 037000 020444 0020444 -001- 16 BL XXX449
                                -001- 17 NOTE TAPUTL 'CSECT'
                                -001- 18 NOTE ***** PATCH AREA BEGINS AT 003212 *****

0020444 -001- 21 XXX449 PATCHAREA
0020444 03 003212 153004 ----- 0020450 22 B TRK4
0020445 23 CALBXB
0020445 24 CALL BINXBCD
0020445 03 003213 137020 110023 CSYSUB -001- 25 BSA BINXBCD
0020447 03 003215 106221 ----- 26 LR R9,R1
0020450 27 TRK4
0020450 03 003216 103204 ----- 28 LN R8,4 # FAKE TRK NO. USE IN SUBROUTINE STORTBT
0020451 03 003217 003622 003777 29 NI R9,M(BLKADR)
0020453 30 CALL STORTBT
0020453 03 003221 037020 020117 0020117 -001- 31 BSA STORTBT
0020455 03 003223 150400 015454 0015454 32 BNCL TTYOUT
0020457 03 003225 003004 ----- 33 LN RO,DMPSPN
0020460 03 003226 044000 ----- 34 ST RO,N(UTCTL)(RAO)
0020461 35 RETURN TTY_PF
0020461 03 003227 056463 ----- TTYTBL -001- 36 BTSAN TTY_PF
0020462 37 ENDP NR # 12650
                                -001- 38 NOTE ***** LAST PATCH ADDRESS USED IS 003227 *****
                                -001- 39 NOTE ***** NUMBER OF PATCH WORDS USED IS 14 (DECIMAL) *****

0015417 -001- 42 EOW # 12650
                                -001- 43 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000164 *****

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COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY TTY INPUT MESSAGE PROCESSING ROUTINES

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W77D

0015417

03 DIRDMP

04 # THIS ROUTINE GETS THE TRACK AND BLOCK ADDRESSES OF THE DIRECTORY

05 # FILE FOR A DIRECTORY DUMP

0015417	03	000165	103401	004000	MASACS		07	LI	RO,DIRTRK	# LOAD TRACK NUMBER
0015421	03	000167	010413	-----			08	RRN	RO,S(TRACK)	
0015422	03	000170	004401	-----			09	AN	RO,1	
0015423	03	000171	006200	-----			10	LR	R8,RO	# R1 HAS NUMBER FROM SUBROUTINE BINBCD
0015424	03	000172	003401	000017	MASACS		11	LI	RO,DIRLOC	# LOAD BLOCK ADDRESS
0015426							12	CALL	BINXBCD	
0015426	03	000174	037020	110023	CSYSUB	-001-	13	BSA	BINXBCD	
0015430	03	000176	106221	-----			14	LR	R9,R1	# R1 HAS BCD NUMBER FROM SUBROUTINE BINXBCD
0015431							15	CALL	STORTBT	
0015431	03	000177	037020	020117	0020117	-001-	16	BSA	STORTBT	
0015433	03	000201	155021	-----	0015454		17	BNC	TTYOUT	
0015434	03	000202	003002	-----			18	LN	RO,DMPDFN	
0015435	03	000203	044000	-----			19	ST	RO,N(UTCTL)(RAD)	
0015436							20	RETURN	TTY_PF	
0015436	03	000204	056463	-----	TTYTBL	-001-	21	BTSAN	TTY_PF	

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TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY TTY INPUT MESSAGE PROCESSING ROUTINES

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0015437          01 LABDMP
                02 # THIS IS THE CONTINUATION OF THE TTY:INPUT MESSAGE ROUTINE FOR
                03 # THE DMP:TAPE LABEL FILE. THE REMAINDER OF THE INITIAL CHECKS AND
                04 # THE SETTING UP OF THE TU CONTROL BLOCK IS DONE HERE.

0015437 03 000205 106006 -----          06      LR      RO,R6      # PUT TAPE NUMBER INTO RO
0015440 03 000206 014000 -----          07      TZ      RO          # WAS NUMBER TYPED AT TTY?
0015441 03 000207 054014 -----          08      BC      TTYOUTNG
0015442          09      CALL   BCDXBIN  # CONVERT TAPE NUMBER TO BINARY
0015442 03 000210 073030 -----          10      BSAI   BXXDXBIN  # SUBROUTINE BCDXBIN IS IN PROGRAM CSYSUB
0015443 03 000211 130422 020006 TDATA -001- 11      LL      R1,TAPETBL # MAX NUMBER OF TAPE ON SYSTEM
0015445 03 000213 004037 -----          12      SN      R1,1     # ADJUST FOR D BASE
0015446 03 000214 005020 -----          13      SR      R1,RO    # IS TAP NUMBER WITHIN LIMITS
0015447 03 000215 055006 -----          14      BNC    TTYOUTNG
0015450 03 000216 044006 -----          15      ST      RO,N(TPNO)(RAO) # STORE TAPE NUMBER IN CONTROL BLOCK
0015451 03 000217 003003 -----          16      LN      RO,DMPLFN # GET FUNCTION CODE
0015452 03 000220 044000 -----          17      ST      RO,N(UTCTL)(RAO) # STORE IN CONTROL BLOCK
0015453          18      RETURN  TTY_PF
0015453 03 000221 056463 ----- TTYTBL -001- 19      BTSAN  TTY_PF

                25 # COMMON TTY ERROR RESPONSE RETURNS
0015454          26 TTYOUT
0015454          27      RETURN
0015454 03 000222 156400 -----          28      BTSAN
0015455          29 TTYOUTNG
0015455          30      RETURN  TTY_NG
0015455 03 000223 156467 ----- TTYTBL -001- 31      BTSAN  TTY_NG

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COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY TTY INPUT MESSAGE PROCESSING ROUTINES

CNRUTL W77D

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0015456          01 AUDITAPE
02 # AUDIT:TAPE;dd! INPUT MESSAGE HANDLING ROUTINE.
03 # THIS INPUT MESSAGE HAS A FORMAT THAT WILL COMPARE TAPES
04 # AND PRINT TOTAL MISMATCHES OR DO A DETAILED COMPARE
05 # AND/OR CORRECT OF TAPES.
06
0015456          07 # THIS SECTION OF CODE WITH THE AID OF SUBROUTINE FSTCHK
08 # CHECKS THE TAPE UTILITY PROGRAM FOR BEING ACTIVE AND NOT
09 # BUSY. IF THIS CHECK IS SUCCESSFUL CONTROL DATA FROM THE
10 # TTY ALONG WITH ALL OTHER NECESSARY DATA GENERATED BY THIS
11 # CODE IS STORED IN THE TAPE UTILITY CONTROL BLOCK (TUUTCTL).
12

0015456          14          BEGIN      ( )
0015456          15          CALL      FSTCHK
0015456 03 000224 137020 020102 0020102 -001- 16          BSA      FSTCHK
0015460 03 000226 155774 ----- 0015454 17          BNC      TTYOUT
0015461 03 000227 003224 -----          18          LN      R9,1*(W(TAPNO))+0 # LOAD COMPARE AND MASTER TAPE NUMBERS
0015462 03 000230 044226 -----          19          ST      R9,N(TPNO)(RAO) # STORE TAPE NUMBER
0015463 03 000231 044165 -----          20          ST      R7,N(SGNO)(RAO) # SAVE ACTION OPTION
0015464 03 000232 003240 -----          21          ZR      R10 # SET TRACK AND BLOCK EQUAL TO ZERO
0015465 03 000233 044241 -----          22          ST      R10,N(BKNO)(RAO) # SAVE TRACK AND BLOCK NUMBER
0015466 03 000234 003007 -----          23          LN      R0,AUDITFN # GET FUNCTION CODE
0015467 03 000235 044000 -----          24          ST      R0,N(UTCTL)(RAO) # SAVE FUNCTION CODE
          25          TAPUTL OW      0(236) #3E790260
          -001- 26          NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000236 *****

0015470          29          RETURN   TTY_IP
0015470 03 000236 056465 ----- TTYTBL -001- 30          BTSAN  TTY_IP
0015471          31          EOW      #3E790260
          -001- 32          NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000236 *****

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COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY TTY INPUT MESSAGE PROCESSING ROUTINES

CNRUTL W77D

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0015471          01 COPYTAPE
02 # COPY:TAPE(a,b,cccc),TO(d,e,ffff):gggg!
03 # COPY:TAPE(a),TO(d)!
04 # INPUT MESSAGE HANDLING ROUTINE.
05 # THESE INPUT MESSAGES WILL ALLOW THE COPYING OF ANY TRACK
06 # AND BLOCK OF ONE TAPE TO ANY TRACK AND BLOCK OF THE OTHER
07 # FOR ANY GIVEN NUMBER OF BLOCKS. WHEN LENGTH IS OMITTED ONLY
08 # ONE BLOCK IS COPIED. A COPY SPECIFYING TAPE NUMBERS ONLY
09 # WILL COPY ALL TRACKS (EXCEPT TRACK ONE) FROM ONE TAPE TO
10 # THE OTHER
0015471          11
12 # THIS SECTION OF CODE WITH THE AID OF SUBROUTINE FSTCHK
13 # CHECKS THE TAPE UTILITY FOR BEING ACTIVE AND NOT BUSY WITH
14 # ALL CONTROL DATA PRESENT AND LEGAL. IF THIS CHECK IS SUCCESSFUL
15 # ALL CONTROL DATA FROM TTY ALONG WITH ALL OTHER DATA GENERATED
16 # BY THIS CODE IS STORED IN THE TAPE UTILITY CONTROL BLOCK (TUCOPYCTL).
0015471          17
18 # NOTE! TUCOPYCTL HAS THE SAME TEMPORARY STORE ADDRESS AS TUUTCTL

0015471          20          BEGIN      ( )
0015471          21          CALL        FSTCHK
0015471 03 000237 137020 020102 0020102 -001- 22          BSA        FSTCHK
0015473 03 000241 155761 ----- 0015454 23          BNC        TTYOUT
0015474 03 000242 014146 -----          24          TZ          R6          # WAS MASTER TAPE NUMBER TYPED?
0015475 03 000243 054760 ----- 0015455 25          BC        TTYOUTNG
0015476 03 000244 006006 -----          26          LR        RO,R6
0015477          27          CALL        BCDXBIN
0015477 03 000245 073030 -----          -001- 28          BSAI       BCDXBIN          # SUBROUTINE BCDXBIN IS IN PROGRAM CSYSUB
0015500 03 000246 106140 -----          29          LR        R6,RO          # PUT CONVERTED TAPE NUMBER BACK INTO R6
0015501 03 000247 014252 -----          30          TZ          R10          # WAS COMPARE TAPE NUMBER TYPED?
0015502 03 000250 054753 ----- 0015455 31          BC        TTYOUTNG
0015503 03 000251 006012 -----          32          LR        RO,R10
0015504          33          CALL        BCDXBIN
0015504 03 000252 073030 -----          -001- 34          BSAI       BCDXBIN          # SUBROUTINE BCDXBIN IS IN PROGRAM CSYSUB
0015505 03 000253 106106 -----          35          LR        R4,R6
0015506 03 000254 006120 -----          36          LR        R5,RO          # RO HAS COMPARE TAPE NUMBER
0015507 03 000255 014505 -----          37          OR        R4,R5          # R5(COMPARE TAPE NUMBER) TO BE SAVE
0015510 03 000256 003502 177774          38          NI        R4,-M(TAPNO)
0015512 03 000260 055743 ----- 0015455 39          BNC        TTYOUTNG
0015513 03 000261 010416 -----          40          RLM       RO,M(TAPNO)          # MOVE COMPARE TAPE NUMBER UP IN REGISTER
0015514 03 000262 016006 000003          41          IRM       RO,R6,M(TAPNO)          # PUT MASTER TAPE NUMBER IN WITH COMPARE
0015516 03 000264 044006 -----          42          ST        RO,N(TPNO)(RAO)          # STORE TAPE NUMBER IN CONTROL BLOCK

          44 # THE NEXT FEW LINES OF CODE CHECK TO SEE IF AN ALL-TRACKS
          45 # COPY IS REQUESTED
0015517 03 000265 006027 -----          46          LR        R1,R7
0015520 03 000266 014433 -----          47          OR        R1,R11
0015521 03 000267 014430 -----          48          OR        R1,R8
          49 TAPUTL OW          0(270)          # 11977

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TAPE UTILITY MULTISCAN FUNCTION

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TAPE UTILITY TTY INPUT MESSAGE PROCESSING ROUTINES

CNRUTL W77D

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-001- 01      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000270 *****

0015522 03 000270 037000 112331 0000677 -001- 04 CPATCH BGNP 0(677) # 11977
-001- 05      BL XXX486
-001- 06      NOTE CPATCH 'CSECT'
-001- 07      NOTE ***** PATCH AREA BEGINS AT 000677 *****

0112331 -001- 10 XXX486 PATCHAREA
0112331 10 000677 172054 ----- 11      GN R2,12
0112332 10 000700 072075 ----- 12      GN R3,13
0112333 10 000701 014422 ----- 13      OR R1,R2
0112334 10 000702 050000 015622 0000370 14      BCL ATCPY # ALL TRACKS COPY
0112336 10 000704 014063 ----- 15      TZ R3
0112337 10 000705 055002 ----- 0112341 16      BNC NOTZRO
0112340 10 000706 003061 ----- 17      LN R3,1 # SET UP TO COPY 1 BLK ONLY
0112341 18 NOTZRO
0112341 19 ENDP # 11977
0112341 10 000707 137000 015524 0000272 -001- 20 BL XXX488
-001- 21      NOTE ***** LAST PATCH ADDRESS USED IS 000710 *****
-001- 22      NOTE ***** NUMBER OF PATCH WORDS USED IS 10 (DECIMAL) *****

0015524 -001- 25 XXX488 OWCONTINUE
0015524 03 000272 104077 ----- 26      SN R3,1 # TO COPY CORRECT NUMBER OF BLKS
0015525 27      EOW # 11977
-001- 28      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000272 *****

0015525 03 000273 004177 ----- 31 # THIS CODE SETS UP FOR A REGULAR COPY SEQUENCE
0015526 03 000274 004277 ----- 32      SN R7,1 # ADJUST FOR TRACK 0 BASE
0015527 03 000275 014273 ----- 33      SN R11,1 # ADJUST FOR TRACK 0 BASE
0015530 03 000276 054725 ----- 0015455 34      TZ R11 # CAN'T COPY TRACK 1
0015531 03 000277 016427 177774 35      BC TTYOUTNG
0015533 03 000301 014021 ----- 36      LRM R1,R7,-MSK(2) # R7 HAS TRACK NUMBER OF MASTER
0015534 03 000302 055721 ----- 0015455 37      TZ R1 # CHECK IF TRACK NUMBER WITHIN LIMITS
0015535 03 000303 010565 ----- 38      BNC TTYOUTNG
0015536 03 000304 016413 177774 39      RLN R7,S(TRCK) # POSITION TRACK NUMBER IN UPPER BITS
0015540 03 000306 014000 ----- 40      LRM R0,R11,-MSK(2) # R11 HAS TRACK NUMBER OF COMPARE
0015541 03 000307 055714 ----- 0015455 41      TZ R0
0015542 03 000310 010665 ----- 42      BNC TTYOUTNG
0015543 03 000311 016430 174000 43      RLN R11,S(TRCK)
0015545 03 000313 014021 ----- 44      LRM R1,R8,-M(BLKADR) # R8 HAS MASTER BLOCK NUMBER
0015546 03 000314 055707 ----- 0015455 45      TZ R1 # CHECK IF BLOCK NUMBER WITHIN LIMITS
0015547 03 000315 014570 ----- 46      BNC TTYOUTNG
0015550 03 000316 044161 ----- 47      OR R7,R8 # PUT TRACK AND BLOCK TOGETHER
48      ST R7,N(MBKNO)(RAD) # STORE IN CENTRAL BLOCK
49 TAPUTL OW 0(317) # 12437

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COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

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-001- 01      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000317 *****
0015551 03 000317 016402 174000      04      LRM      R0,R2,-M(BLKADR)  # R2 HAS COMPARE BLK NO.
0015553      05      EOW      # 12437
-001- 06      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000320 *****

0015553 03 000321 014000 -----      09      TZ      R0
0015554 03 000322 055701 ----- 0015455      10      BNC      TTYOUTNG
      11 TAPUTL OW      0(323) # 12437
-001- 12      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000323 *****

0015555 03 000323 014662 -----      15      OR      R11,R2
0015556      16      EOW      # 12437
-001- 17      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000323 *****

0015556 03 000324 044263 -----      20      ST      R11,N(CBKNO)(RAO)
0015557 03 000325 003001 -----      21      LN      R0,1 # COPY 1 TRACK
0015560 03 000326 044011 -----      22      ST      R0,N(AUX2)(RAO)

      24 # THE NEXT FEW LINES WILL CHECK FOR WRAP-AROUND
      25 TAPUTL OW      0(327) # 12437
-001- 26      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000327 *****

0015561 03 000327 001443 -----      29      AR      R2,R3 # ADD COMPR BLK NO. AND NO. OF BLKS TO COPY
0015562 03 000330 001603 -----      30      AR      R8,R3
0015563      31      EOW      # 12437
-001- 32      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000330 *****

0015563      35      IF      R8 >= A.BLKMAX THEN B TTYOUTNG
0015563 03 000331 006010 -----      -003- 36      LR      R0,R8
0015564 03 000332 003400 177251 MASACS      -003- 37      SI      R0,BLKMAX
0015566 03 000334 054667 ----- 0015455      -001- 38      BC      TTYOUTNG
      39 TAPUTL OW      0(335) # 12437
-001- 40      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000335 *****

0015567      43      IF      R2 >= A.BLKMAX THEN B TTYOUTNG
0015567 03 000335 006002 -----      -003- 44      LR      R0,R2
0015570 03 000336 003400 177251 MASACS      -003- 45      SI      R0,BLKMAX
0015572 03 000340 054663 ----- 0015455      -001- 46      BC      TTYOUTNG
0015573 03 000341 044050 -----      47      ST      R2,N(LASBLK)(RAO) # STORE LAST BLOCK TO COPY IN CONTROL BLOCK
0015574      48      EOW      # 12437
-001- 49      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000341 *****

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TAPE UTILITY TTY INPUT MESSAGE PROCESSING ROUTINES

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0015574 03 000342 020126 -----
0015575 03 000343 055040 ----- 0015635

0015576 03 000344 072007 -----
0015577 03 000345 072033 -----
0015600 03 000346 020020 -----
0015601 03 000347 055034 ----- 0015635

0015602 03 000350 037000 112323 0000671
-001- 23
-001- 24
-001- 25

0112323
0112323 10 000671 172054 -----
0112324 10 000672 072075 -----
0112325 10 000673 072210 -----
0112326 10 000674 020050 -----
0112327
0112327 10 000675 037000 015604 0000352
-001- 34
-001- 35
-001- 36

0015604
0015604 03 000352 154651 ----- 0015455
0015605
0015605 03 000353 006010 -----
0015606 03 000354 005002 -----
0015607 03 000355 055006 ----- 0015615
0015610 03 000356 005203 -----

0015611
0015611 03 000357 006010 -----
0015612 03 000360 005002 -----

005 # IF CONDITIONS ARE MEET THIS CODE STARTS THE REGULAR COPY SEQUENCE
06 CR R5,R6 # COMPARE TAPE NUMBERS
07 BNC PRINTIP # NOT THE SAME

09 # IF CONDITIONS ARE MEET THIS CODE STARTS THE SAME TAPE
10 # DIFFERENT TRACK COPY SEQUENCE
11 GN R0,7 # GET TRACK NUMBERS FROM
12 GN R1,11
13 CR R1,R0
14 BNC PRINTIP # TACK NUMBERS NO THE SAME

16 # IF CONDITIONS ARE MEET THIS CODE STARTS THE SAME TAPE
17 # SAME TRACK COPY SEQUENCE
18 TAPUTL OW 0(350) # 12437
-001- 19 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000350 *****

22 CPATCH BGNP 0(671) # 12437
-001- 23 BL %X516
-001- 24 NOTE CPATCH 'CSECT'
-001- 25 NOTE ***** PATCH AREA BEGINS AT 000671 *****

-001- 28 %X516 PATCHAREA
29 GN R2,12 # R2 = ENDING BLK NO.
30 GN R3,13
31 GN R8,8
32 CR R2,R8 # R8 = STARTING BLK NO.
33 ENDP # 12437
-001- 34 BL %X518
-001- 35 NOTE ***** LAST PATCH ADDRESS USED IS 000676 *****
-001- 36 NOTE ***** NUMBER OF PATCH WORDS USED IS 6 (DECIMAL) *****

-001- 39 %X518 OWCONTINUE
40 BC TTYOUTNG
41 IF R2 > R8 THEN B ABOVE
42 LR R0,R8
43 SR R0,R2
44 BNC ABOVE
45 SR R8,R3 # R8=READ ADR R2=WRITE ADR R3=AMOUNT OF BLKS
TO COPY

47 IF R2 > R8 THEN B TTYOUTNG
-003- 48 LR R0,R8
-003- 49 SR R0,R2

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COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

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0015613 03 000361 055642 ----- 0015455 -001- 01      BNC      TTYOUTNG
0015614      02      EOW          # 12437
-001- 03      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000361 *****
          *

0015614 03 000362 053021 ----- 0015635      07      B      PRINTIP
          08 TAPUTL OW      0(363)      # 12437
-001- 09      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000363 *****

0015615      12 ABOVE
0015615 03 000363 101603 -----      13      AR      R8,R3
0015616      14      IF      R2 < R8 THEN B TTYOUTNG
0015616 03 000364 006002 ----- -003- 15      LR      RO,R2
0015617 03 000365 005010 ----- -003- 16      SR      RO,R8
0015620 03 000366 055635 ----- 0015455 -001- 17      BNC      TTYOUTNG
0015621      18      EOW          # 12437
-001- 19      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000366 *****
          *

0015621 03 000367 053014 ----- 0015635      23      B      PRINTIP

0015622      26 ATCPY
          27 # THIS ROUTINE SETS UP THE TU CONTROL BLOCK AND STARTS THE
          28 # ALL TRACKS COPY SEQUENCE

0015622 03 000370 120126 -----      30      CR      R5,R6
0015623 03 000371 054632 ----- 0015455      31      BC      TTYOUTNG
          32 TAPUTL OW      0(372)      # 12809
-001- 33      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000372 *****

0015624 03 000372 003401 004001      36      LI      RO,1*(S(TRCK))+1 # STARTING TRK AND BLK
0015626      37      EOW          # 12809
-001- 38      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000373 *****
          *

0015626 03 000374 044001 -----      42      ST      RO,N(MBKNO)(RAO)
0015627 03 000375 044003 -----      43      ST      RO,N(CBKNO)(RAO)
0015630 03 000376 003421 000526 MASACS      44      LI      R1,BLKMAX-1
0015632 03 000400 044030 -----      45      ST      R1,N(LASBLK)(RAO)
0015633 03 000401 003003 -----      46      LN      RO,3 # TOTAL TRACKS TO COPY
0015634 03 000402 044011 -----      47      ST      RO,N(AUX2)(RAO)
0015635      48 PRINTIP
0015635 03 000403 103011 -----      49      LN      RO,COPYFN

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 42

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY TTY INPUT MESSAGE PROCESSING ROUTINES

CNRUTL W77D

0015636	03	000404	044000	-----		01	ST	RO,N(UTCTL)(RAO)	
0015637						02	RETURN	TTY_IP	
0015637	03	000405	056465	-----	TTYTBL	-001-	03	BTSAN	TTY_IP

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 43

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY TTY INPUT MESSAGE PROCESSING ROUTINES

CNRUTL W77D

```

0015640                                01 COPYFILE
02 # COPY:FILE dd! INPUT MESSAGE HANDLING ROUTINE.
03 # THIS INPUT MESSAGE HAS A FORMAT THAT WILL ALLOW COPYING
04 # ANY FILE ON TAPE FROM ONE TAPE UNIT TO THE OTHER (EXCEPT
05 # THE TAPE DIRECTORY FILE).
06
0015640                                07 # THIS SECTION OF CODE WITH THE AID OF SUBROUTINE FSTCHK
08 # CHECKS THE TAPE UTILITY PROGRAM FOR BEING ACTIVE AND NOT
09 # BUSY. IF THE CHECK IS SUCCESSFUL CONTROL DATA FROM THE TTY
10 # ALONG WITH ALL OTHER NECESSARY DATA GENERATED BY THIS CODE
11 # IS STORED IN THE TAPE UTILITY CONTROL BLOCK (TUCOPYCTL).
12
0015640                                13 # NOTE! TUCOPYCTL HAS THE SAME TEMPORARY STORE ADDRESS AS TUUTCTL.

0015640                                15 BEGIN      ( )
0015640                                16 CALL       FSTCHK
0015640 03 000406 137020 020102 0020102 -001- 17 BSA       FSTCHK
0015642 03 000410 155612 ----- 0015454   18 BNC      TTYOUT
                                           19 TAPUTL  OW    0(411) # 12649
-001- 20 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000411 *****

                                           23 # CLIENT NUMBER, EXPLICIT BIT, AND WORD COUNT
0015643 03 000411 003401 011003           24 LI       RO, TAPUCLNT*E(11)+E(9)+3
0015645                                25 TAKEOUT  3
0015645 03 000413 006000 ----- -001- 26 LR      0,0
0015646 03 000414 006000 ----- -001- 27 LR      0,0
0015647 03 000415 006000 ----- -001- 28 LR      0,0
0015650                                29 EOW
-001- 30 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000415 *****

0015650 03 000416 044144 -----           33 ST      R6,4(RA0) # REGISTERS 4,5,6 AND 7 HOLDS FILE NAME
0015651 03 000417 044165 -----           34 ST      R7,5(RA0)
                                           35 TAPUTL  OW    0(420) # 12649
-001- 36 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000420 *****

                                           39 TAPUTL  BGNP  0(3161) # 12649
0015652 03 000420 037000 020413 0020413 -001- 40 BL      XXX553
-001- 41 NOTE TAPUTL 'CSECT'
-001- 42 NOTE ***** PATCH AREA BEGINS AT 003161 *****

0020413                                -001- 45 XXX553 PATCHAREA
0020413 03 003161 114210 -----           46 TZ      R8 # CHAR IN R8 ?
0020414 03 003162 055002 ----- 0020416   47 BNC     TZR9
0020415 03 003163 004017 -----           48 SN      RO,1 # SUBTRACT 1 FROM WORD COUNT
0020416                                49 TZR9

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 44

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY TTY INPUT MESSAGE PROCESSING ROUTINES

CNRUTL W77D

```

0020416 03 003164 114231 ----- 01      TZ      R9          # CHAR IN R9 ?
0020417 03 003165 055002 ----- 0020421 02      BNC      STCOU
0020420 03 003166 004017 ----- 03      SN      RO,1       # SUBTRACT 1 FROM WORD COUNT
0020421 04      STCOU
0020421 03 003167 144003 ----- 05      ST      RO,3(RAO)
0020422 03 003170 044206 ----- 06      ST      R8,6(RAO)
0020423 03 003171 044227 ----- 07      ST      R9,7(RAO)
0020424 08      ENDP      # 12649
0020424 03 003172 037000 015654 0015654 -001- 09      BL      XXX555
-001- 10      NOTE ***** LAST PATCH ADDRESS USED IS 003173 *****
-001- 11      NOTE ***** NUMBER OF PATCH WORDS USED IS 11 (DECIMAL) *****

0015654 -001- 14 XXX555 OWCONTINUE
0015654 03 000422 103010 ----- 15      LN      RO,COPYFILEFN
0015655 16      EOW      # 12649
-001- 17      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000422 *****

0015655 03 000423 044000 ----- 20      ST      RO,N(UTCTL)(RAO) # STORE FUNCTION CODE
0015656 21      RETURN  TTY_IP
0015656 03 000424 056465 ----- TTYTBL -001- 22      BTSAN  TTY_IP

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 45

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY TTY INPUT MESSAGE PROCESSING ROUTINES

CNRUTL W77D

```

0015657                                01 LODOMAS
      02 # LOD:OMAS;TAPE a!
      03 # LOD:OMAS;TAPE a:ffff!
      04 # LOD:OMAS;BOOT!
      05 # LOD:OMAS;BOOT:FULL!
0015657                                06
      07 # INPUT MESSAGE HANDLING ROUTINE FOR OFFLINE MAS LOAD.
      08 # TWO VARIATIONS EXISTS TO LOAD OMAS FROM TAPE.
      09 # TAPE - ALLOWS INPUTTING THE GENERIC AND/OR TRNSLN FILES (NO PATCHES).
      10 # BOOT - PERFORMS AN ACTUAL BOOTSTRAP VIA THE OFFLINE CC. WHEN COMPLETED,
      11 #       THE OMAS WILL BE LOADED WITH THE DATA CONTAINED IN THE GENERIC,
      12 #       TRANSLATION, AND PATCH FILES. ACTIVE OVERWRITES ARE LOADED.
      13 # R6 = TAPE/BOOT
      14 # R7 = a (0 OR 1)
      15 # R10 = ffff (GENERIC OR TRNSLN)
      16 # R10 = FULL (FULL MEMORY RELOAD)

0015657                                18 BEGIN ()
0015657                                19 CALL FSTCHK
0015657 03 000425 137020 020102 0020102 -001- 20 BSA FSTCHK
0015661 03 000427 155573 ----- 0015454 21 BNC TTYOUT
0015662 03 000430 003040 ----- 22 ZR R2
      23 TAPUTL OW 0(431) # 12447
      -001- 24 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000431 *****

0015663 03 000431 003605 001016 TTYTBL -001- 27 SPELL RB,(B,0,0,T),OP=CI
0015665                                28 CI RB,BX00T
      29 EOW # 12447
      -001- 30 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000432 *****

0015665                                33 IF CF = 1 THEN RGBEGIN
0015665 03 000433 055011 ----- 0015676 -001- 34 BNC IFS573
      35 TAPUTL OW 0(434) # 13053
      -001- 36 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000434 *****

0015666 03 000434 003665 000313 TTYTBL -001- 40 SPELL R11,(F,U,L,L),OP=CI
0015670                                41 CI R11,FXULL
      42 EOW # 13053
      -001- 43 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000435 *****

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 46

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY TTY INPUT MESSAGE PROCESSING ROUTINES

CNRUTL W77D

```

                                01 TAPUTL   OW   0(436)      # 3E790151
                                -001- 02   NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000436
                                           *****

0015670 03 000436 037000 121352 0000114 -001- 06 CPATCH7  BGNP   0(114)      # 3E790151
                                           -001- 07   BL     XXX583
                                           -001- 08   NOTE   CPATCH7 'CSECT'
                                           -001- 09   NOTE ***** PATCH AREA BEGINS AT 000114 *****
                                           *

0121352                                -001- 13 XXX583   PATCHAREA
0121352 14 000114 126042 -----          14   SBN     R2,2           # CONTROLS CALL TO 'SETRCBP' SUBROUTINE
0121353 14 000115 030043 -----          15   ICF     R2,3
0121354 14 000116 050000 015672 0000440   16   BCL     FULONLY
0121356 14 000120 003000 -----          17   ZR      RD
0121357 14 000121 044010 -----          18   ST      RD,N(AUX1)(RAO)
0121360 14 000122 044011 -----          19   ST      RD,N(AUX2)(RAO)
0121361 14 000123 003665 000112 TTYTBL -001- 20   SPELL  R11,(E,R,A,S,E),OP=CI
0121363 14 000125 030044 -----          21   CI      R11,EXRASE
0121364 14 000126 030043 -----          22   ICF     R2,4
0121365                                23   ICF     R2,3
0121365                                24   ENDP
0121365 14 000127 037000 015672 0000440 -001- 25   BL     XXX588           # 3E790151
                                           -001- 26   NOTE ***** LAST PATCH ADDRESS USED IS 000130 *****
                                           *
                                           -001- 28   NOTE ***** NUMBER OF PATCH WORDS USED IS 13 (DECIMAL) *****

0015672                                -001- 31 XXX588   OWCONTINUE
0015672                                32   FULONLY
0015672 03 000440 144043 -----          33   ST      R2,N(LENO)(RAO)
0015673                                34   EOW
                                           -001- 35   NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000440 *****
                                           *****

0015673 03 000441 003033 -----          39   LN      R1,LOMASBTFN
0015674 03 000442 044020 -----          40   ST      R1,N(UTCTL)(RAO)
0015675                                41   RETURN  TTY_IP
0015675 03 000443 056465 ----- TTYTBL -001- 42   BTSAN  TTY_IP
0015676                                43   RGEN
0015676                                -001- 44 IFS573
                                           45 TAPUTL OW   0(444)      # 12447
                                           -001- 46   NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000444 *****
                                           *****

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COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 47

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY TTY INPUT MESSAGE PROCESSING ROUTINES

CNRUTL W77D

0015676	03	000444	103605	000242	TTYTBL	-001-	01	SPELL	R8,(T,A,P,E),OP=CI
0015700							02	CI	R8,TXAPE
							03	EOW	# 12447
						-001-	04	NOTE	***** THE LAST ADDRESS OVERWRITTEN IS 000445 *****
									*
0015700							08	IF	CF = 1 THEN RGBEGIN
0015700	03	000446	055033	-----	0015733	-001-	09	BNC	IFS601
							10	OW	O(447) # 12447
						-001-	11	TAPUTL	NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000447 *****
0015701	03	000447	014231	-----			15	TZ	R9 # WAS 0 OR 1 TYPED
0015702							16	EOW	# 12447
						-001-	17	NOTE	***** THE LAST ADDRESS OVERWRITTEN IS 000447 *****
0015702	03	000450	054553	-----	0015455		21	BC	TTYOUTNG
							22	OW	O(451) # 12447
						-001-	23	TAPUTL	NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000451 *****
0015703	03	000451	006011	-----			27	LR	RO,R9
0015704							28	EOW	# 12447
						-001-	29	NOTE	***** THE LAST ADDRESS OVERWRITTEN IS 000451 *****
0015704							33	CALL	BCDXBIN
0015704	03	000452	073030	-----		-001-	34	BSAI	BXCDBIN # SUBROUTINE BCDXBIN IS IN PROGRAM CSYSUB
0015705	03	000453	144006	-----			35	ST	RO,N(TPNO)(RAO) # SAVE TAPE NO.
0015706	03	000454	003402	177776			36	NI	RO,-MSK(1)
0015710	03	000456	055545	-----	0015455		37	BNC	TTYOUTNG # TAPE NO. TOO BIG
							38	OW	O(457) # 13053
						-001-	39	TAPUTL	NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000457 *****
0015711	03	000457	003665	001445	TTYTBL	-001-	43	SPELL	R11,(G,E,N,E,R,I,C),OP=CI
0015713							44	CI	R11,GXENERIC
							45	EOW	# 13053
						-001-	46	NOTE	***** THE LAST ADDRESS OVERWRITTEN IS 000460 *****

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 48

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY TTY INPUT MESSAGE PROCESSING ROUTINES

CNRUTL W770

0015713 03 000461 030040 -----	01	ICF	R2,0
	02 TAPUTL	OW	0(462) # 13053
-001- 03		NOTE	***** THE FIRST ADDRESS OVERWRITTEN IS 000462 *****
0015714 03 000462 003665 000260 TTYTBL	07	SPELL	R11,(T,R,N,S,L,N),OP=CI
0015716	-001- 08	CI	R11,TXRNSLN
	09	EOW	# 13053
-001- 10		NOTE	***** THE LAST ADDRESS OVERWRITTEN IS 000463 *****
0015716 03 000464 030041 -----	14	ICF	R2,1
	15 TAPUTL	OW	0(465) # 13591
-001- 16		NOTE	***** THE FIRST ADDRESS OVERWRITTEN IS 000465 *****
0015717 03 000465 037000 120744 0001750	20 TFAPCH2	BGNP	0(1750) # 13591
-001- 21		BL	XXX627
-001- 22		NOTE	TFAPCH2 'CSECT'
-001- 23		NOTE	***** PATCH AREA BEGINS AT 001750 *****
0120744	-001- 27 XXX627	PATCHAREA	
	28 TFAPCH2	OW	0(1750) #3E790260
-001- 29		NOTE	***** THE FIRST ADDRESS OVERWRITTEN IS 001750 *****
0120744 15 001750 103665 001215 TTYTBL	33	SPELL	R11,(P,A,T,C,H),OP=CI
0120746	-001- 34	CI	R11,PATCH
	35	EOW	#3E790260
-001- 36		NOTE	***** THE LAST ADDRESS OVERWRITTEN IS 001751 *****
0120746 15 001752 030043 -----	40	ICF	R2,3
	41 DINSERT	NOTE	' IF R11 = 0 LN R2,11
0120747 15 001753 014273 -----	42 DDELETE	NOTE	2
0120750 15 001754 050400 015722 0000470	43	TZ	R11
0120752	44	BNCL	IFS494
0120752 15 001756 037000 015721 0000467	45	ENDP	# 13591
-001- 46		BL	XXX636
-001- 47		NOTE	***** LAST PATCH ADDRESS USED IS 001757 *****
			*
-001- 49		NOTE	***** NUMBER OF PATCH WORDS USED IS 8 (DECIMAL) *****

COMMON NONRESIDENT UTILITIES

PR-1C954-50.

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 49

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY TTY INPUT MESSAGE PROCESSING ROUTINES

CNRUTL W77D

```

0015721      -001- 03  XXX636      OMCONTINUE
0015721 03 000467 103053 -----      04      LN      R2,11
0015722      05      EOW      # 13591
      -001- 06      NOTE      ***** THE LAST ADDRESS OVERWRITTEN IS 000467
      *****

      10 DDELETE      NOTE      1
      11 IFS494
0015722      12      TBN      R2,1
0015723 03 000470 124041 -----      13      ICF      R2,2      # CONTROLS CALL TO SETRCBAP SUBROUTINE
0015724 03 000471 030042 -----      14      ST      R2,N(LENO)(RAO)
0015725 03 000472 044043 -----      15      IF      R2 = 0 THEN RETURN TTY_NG # INVALID FILE NAME TYPED
0015725      16      TZ      R2
0015726 03 000473 014042 -----      -002- 16
0015726 03 000474 055002 -----      -001- 17      BNC      IFS640
0015727 03 000475 056467 -----      TTYTBL -002- 18      BTSAN      TTY_NG
0015730      -001- 19      IFS640
0015730 03 000476 103C32 -----      20      LN      R1,LOMASFN
0015731 03 000477 044020 -----      21      ST      R1,N(UTCTL)(RAO)
0015732      22      RETURN      TTY_IP
0015732 03 000500 056465 -----      TTYTBL -001- 23      BTSAN      TTY_IP
0015733      24      RGEND
0015733      -001- 25      IFS601
0015733      26      RETURN      TTY_NG      # NEITHER 'BOOT' NOR 'TAPE' WAS TYPED
0015733 03 000501 156467 -----      TTYTBL -001- 27      BTSAN      TTY_NG

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COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 50

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY TTY INPUT MESSAGE PROCESSING ROUTINES

CNRUTL W77D

0015734

01 STOPTAP

02 # STOP:TapeUTIL! INPUT MESSAGE HANDLING ROUTINE.

03 # STOPS THE CURRENT TAPE UTILITY ROUTINE AND TERMINATES THE MULTISCAN FUNCTION.

0015734				05	BEGIN	()	
0015734	03	000502	130400	043177	CTSD	06	LL RO,OFLUCTL
0015736	03	000504	003405	000002		07	CI RO,TUUTIL
0015740	03	000506	055515	-----	0015455	08	BNC TTYOUTNG
0015741	03	000507	003000	-----		09	ZR RO
0015742	03	000510	026007	-----	BLMMA	10	SBN RO,OFLUTIL
0015743						11	CALL MSFABT
0015743	03	000511	073050	-----		-001- 12	BSAI MXSFABT
0015744						13	RETURN TTY_PF
0015744	03	000512	156463	-----	TTYTBL	-001- 14	BTSAN TTY_PF

IS TAPE UTILITY ACTIVE

ABORT TAPE UTILITY
SUBROUTINE MSFABT IS IN PROGRAM CBLM

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 51

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

01 # EACH TAPE UTILITY FUNCTION IS DRIVEN BY A MAJOR STATE TASK
 02 # DISPENSER. THE TASK DISPENSER FOR A GIVEN FUNCTION IS HEADED BY A LABEL
 03 # ENDING WITH 'MON' (FOR MONITOR). THE TASK DISPENSERS CONTAIN SUBSTATES
 04 # TO DRIVE THE PROCESSING ROUTINES WHICH ACCOMPLISH THE PARTICULAR TASK.
 05 # IN GENERAL, THE SUBSTATES EXECUTE SEQUENTIALLY FROM TOP TO BOTTOM WITH
 06 # APPROPRIATE FEEDBACK LOOPS.

0015745

10 DMPMON
 11 # MONITOR FOR CONTROLLING DUMPING OF TU BLOCKS ON TTY.
 12 # RAD POINTS TO TU CONTROL STORAGE AND R1 CONTAINS STATE FLAGS.

0015745	03	000513	156001	-----		14		BPAK	R1	
0015746	03	000514	153005	-----	0015753	15		B	SEZTU	
0015747	03	000515	153013	-----	0015762	16		B	RD1MON	
0015750	03	000516	153203	-----	0016153	17		B	IDLSTATE_	
0015751	03	000517	153021	-----	0015772	18		B	STOUT	# BEGIN LINKED DUMP
0015752	03	000520	153044	-----	0016016	19		B	CONOUT	# CONTINUE OUTPUT

0015753

23 SEZTU
 24 # SUBSTATE RESPONSIBLE FOR GAINING CONTROL OF TAPE UNIT.

0015753	03	000521	140006	-----		26		L	RD,N(TPNO)(RAD)	
0015754	03	000522	040021	-----		27		L	R1,N(BKNO)(RAD)	# PREPARE FOR SEIZURE OF TAPE UNIT
0015755	03	000523	037020	126205	CTAPH	-002-	28	SEIZE	TAPUCLNT	# GET CONTROL OF TAPE UNIT.
0015757	03	000525	010030	-----		-001-	29	BSA	OPENTCB	
0015760	03	000526	155175	-----	0016155	30		VFD	5,TAPUCLNT 1,0 1,0 2,0 3,1 1,1	
0015761	03	000527	053170	-----	0016151	31		BNC	ABORTTU_	
						32		B	NEXSTAT_	# GO TO NEXT SUBSTATE

0015762

36 RD1MON
 37 # SUBSTATE INVOLVED WITH INITIATING READ OF CLIENT BLOCK

0015762	03	000530	173047	-----		-002-	39	RD1BLK	TAPUCLNT,STALST	
0015763	03	000531	010400	015771	0015771	-001-	40	BSAI	RXEQR	# SUBROUTINE REQR IS IN PROGRAM CTAPH
0015765	03	000533	156000	-----			41	ADDR	STALST,TAPUCLNT*(E(7))+RD1BLK*(E(3))	
0015766	03	000534	153163	-----	0016151		42	BPAK	RD	
0015767	03	000535	153166	-----	0016155		43	B	NEXSTAT_	# READ WAS ACCEPTED
0015770							44	B	ABORTTU_	# ABORT
0015770	03	000536	156462	-----		-001-	45	RETURN	2	# WAIT SEIZURE NOT COMPLETED
0015771							46	BTSAN	2	
0015771							47	STALST		
0015771							48	RETURN	0	# SIGNAL FINAL RETURN
0015771	03	000537	156460	-----		-001-	49	BTSAN	0	

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 52

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY MONITOR ROUTINES

CNRUTL W770

0015772

04 STOUT
05 # SUBSTATE FOR PRINTING OUT TAPE DUMP TTY HEADER.

```
0015772 03 000540 140001 ----- 07 L RD,N(BKNO)(RAD) # GET BLOCK NUMBER.
0015773 03 000541 003402 003777 08 NI RD,MSK(11) # CLEAR TRACK NUMBER.
0015775 03 000543 006200 ----- 09 LR R8,RO
0015776 10 CALL BINXBCD
0015776 03 000544 037020 110023 CSYSUB -001- 11 BSA BINXBCD
0016000 03 000546 106161 ----- 12 LR R7,R1
0016001 13 PRINT PRIOR=3,PACTION=M,FMT=(WRD(D,M,P),WRD(T,A,P,E),WRD(B,L,K),BCD,L_X
),LINK=YES
```

-001- 16 # MESSAGE PROTOTYPE

```
-001- 17 # M mm DMP TAPE BLK mmmn xxxx
-002- 18 BSAI PXMRY # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
0016001 03 000547 073053 -----
0016002 03 000550 102270 ----- -002- 19 VFD 1,1 2,0 1,0 3,2 1,0 1,1 1,0 2,3 1,1 3,0
0016003 03 000551 023200 ----- -002- 20 VFD 4,TTYO_4,TTYO_L_X 4,TTYO_BCD 4,TTYO_WRD
0016004 03 000552 021042 ----- -002- 21 VFD 4,TTYO_4,TTYO_4,TTYO_4,TTYO_4
0016005 03 000553 014016 ----- TTYTBL -002- 22 VFD 5,3 11,DXMP
0016006 03 000554 000242 ----- TTYTBL -002- 23 VFD 5, 11,TXAPE
0016007 03 000555 000272 ----- TTYTBL -002- 24 VFD 5, 11,BXLK
-001- 25 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS R7,R8,
```

-001- 27 NOTE

```
THIS IS THE FIRST SEGMENT OF A LINKED MESSAGE
0016010 03 000556 144004 ----- 28 ST RD,N(LNKS)(RAO) # STORE LINK NUMBER AWAY.
0016011 03 000557 037040 010054 0010054 29 A1S TUUTCTL+N(SUBST) # GO TO NEXT SUBSTATE
0016013 03 000561 003065 ----- 30 LN R3,5
0016014 03 000562 044071 ----- 31 ST R3,N(AUX2)(RAO)
0016015 32 RETURN 2
0016015 03 000563 056462 ----- -001- 33 BTSAN 2
```

0016016

37 CONOUT

```
38 # PRINTOUT ROUTINE FOR BODY OF TAPE BLOCK.
0016016 03 000564 140004 ----- 39 L RD,N(LNKS)(RAO) # GET LINK NUMBER.
0016017 40 CALL LINKRDY # CHECK IF LAST SEGMENT PRINTED OUT.
0016017 03 000565 037021 125021 TTYAPP -001- 41 BSA LINKRDY
0016021 03 000567 156000 ----- 42 BPAX RO
0016022 03 000570 153105 ----- 0016127 43 B TAPUTLCOM
0016023 44 RETURN 2 # WAIT
0016023 03 000571 156462 ----- -001- 45 BTSAN 2
0016024 03 000572 140145 ----- 46 L R6,N(SGNO)(RAD) # GET IOBUFFER INDEX,
0016025 03 000573 003561 001500 MASACS 47 LI R7,BKSIZE
0016027 03 000575 040000 ----- 48 L RD,N(UTCTL)(RAO)
49 TAPUTL OW 0(576) # 12650
```

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-001- 01      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000576 *****

0016030
0016030 03 000576 006000 -----          04      TAKEOUT 9
0016031 03 000577 006000 -----          -001- 05      LR      0,0
0016032 03 000600 006000 -----          -001- 06      LR      0,0
0016033 03 000601 006000 -----          -001- 07      LR      0,0
0016034 03 000602 006000 -----          -001- 08      LR      0,0
0016035 03 000603 006000 -----          -001- 09      LR      0,0
0016036 03 000604 006000 -----          -001- 10      LR      0,0
0016037 03 000605 006000 -----          -001- 11      LR      0,0
0016040 03 000606 006000 -----          -001- 12      LR      0,0
0016041
-001- 13      LR      0,0
-001- 14      EOW
-001- 15      NOTE ***** # 12650
                        ***** THE LAST ADDRESS OVERWRITTEN IS 000606 *****

                                18 DDELETE NOTE 1
0016041
0016041 03 000607 106006 -----          19      TF      R6 >= R7 THEN B COMPO
0016042 03 000610 005007 -----          -003- 20      LR      R0,R6
0016043 03 000611 054052 ----- 0016115 -003- 21      SR      R0,R7
-001- 22      BC      COMPO
                                23 TAPUTL OW 0(612) # 12281
-001- 24      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000612 *****

0016044 03 000612 040071 -----          27      L      R3,N(AUX2)(RA0)
0016045
-001- 28      EOW # 12281
-001- 29      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000612 *****
                        *

0016045 03 000613 004077 -----          33      SN      R3,1
0016046 03 000614 014063 -----          34      TZ      R3
0016047 03 000615 054027 ----- 0016076 35      BC      PAUSE
0016050 03 000616 044071 -----          36      ST      R3,N(AUX2)(RA0)
0016051 03 000617 031420 045266 LAYOUT 37      LAL     R1,I OBUF,RA1
-001- 38      TAPUTL OW 0(621) # 12281
-001- 39      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000621 *****

0016053 03 000621 043426 -----          42      LAX     R1,R6(RA1)
0016054 03 000622 004550 -----          43      AN      R6,8
0016055 03 000623 044145 -----          44      ST      R6,N(SGNO)(RA0)
0016056
-001- 45      EOW # 12281
-001- 46      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000623 *****
                        *

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0016056 03 000624 040540 ----- 01 L R6,0(RA1) # LOAD REGISTERS FOR OUTPUT.
0016057 03 000625 040561 ----- 02 L R7,1(RA1)
0016060 03 000626 040602 ----- 03 L R8,2(RA1)
0016061 03 000627 040623 ----- 04 L R9,3(RA1)
0016062 03 000630 040644 ----- 05 L R10,4(RA1)
0016063 03 000631 040665 ----- 06 L R11,5(RA1)
0016064 03 000632 040004 ----- 07 L RO,N(LNKS)(RAO)
0016065 03 000633 040706 ----- 08 L R12,6(RA1)
0016066 03 000634 040727 ----- 09 L R13,7(RA1)
0016067 ----- 10 LPRINT PRIOR=3,FMT=(WRD(CR,LF),WRD(SP,SP),L_X,L_X,L_X,L_X,L_X,L_X,L_X,L_X,L_X,L_X),LINK=YES,ZSPRS=NO

-001- 13 # MESSAGE PROTOTYPE
-001- 14 # CRLF SPSP xxxx xxxx xxxx xxxx xxxx xxxx xxxx
0016067 03 000635 073054 ----- -002- 15 BSAI LXPMPY # SUBROUTINE LPMRY IS IN PROGRAM TTYAPP
0016070 03 000636 110270 ----- -002- 16 VFD 1,1 2,0 1,1 3,0 1,0 1,1 1,0 2,3 1,1 3,0
0016071 03 000637 063146 ----- -002- 17 VFD 4,TTYO_L_X 4,TTYO_L_X 4,TTYO_L_X 4,TTYO_L_X
0016072 03 000640 063146 ----- -002- 18 VFD 4,TTYO_L_X 4,TTYO_L_X 4,TTYO_L_X 4,TTYO_L_X
0016073 03 000641 010000 ----- TTYTBL -002- 19 VFD 5,2 11,qt
0016074 03 000642 001402 ----- TTYTBL -002- 20 VFD 5, 11,zz
-001- 21 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS R6,R7,R8,R9,R10,R11,R12,R13,
-001- 23 NOTE THIS IS A SEGMENT OF A LINKED MESSAGE
0016075 ----- 24 RETURN 2
0016075 03 000643 156462 ----- -001- 25 BTSAN 2

.0016076 29 PAUSE
30 # THIS ROUTINE BRAKES THE TTY LINK AFTER THE PRINTING OF
31 # 4 LINES AND PREPARE FOR THE PRINTING OF 4 MORE.

0016076 03 000644 140004 ----- 33 L RO,N(LNKS)(RAO)
0016077 ----- 34 LPRINT PRIOR=3,FMT=(WRD(CR,LF),WRD(CR,LF)),LINK=NO

-001- 36 # MESSAGE PROTOTYPE
-001- 37 # CRLF CRLF
0016077 03 000645 073054 ----- -002- 38 BSAI LXPMPY # SUBROUTINE LPMRY IS IN PROGRAM TTYAPP
0016100 03 000646 100260 ----- -002- 39 VFD 1,1 2,0 1,0 3,0 1,0 1,1 1,0 2,3 1,0 3,0
0016101 03 000647 021042 ----- -002- 40 VFD 4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_
0016102 03 000650 021042 ----- -002- 41 VFD 4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_
0016103 03 000651 010000 ----- TTYTBL -002- 42 VFD 5,2 11,qt
0016104 03 000652 000000 ----- TTYTBL -002- 43 VFD 5, 11,qt
-001- 44 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS
-001- 46 NOTE THIS IS THE LAST SEGMENT OF A LINKED MESSAGE
0016105 03 000653 140000 ----- 47 L RO,N(UTCTL)(RAO)
0016106 03 000654 003043 ----- 48 LN R2,3
49 TAPUTL OW 0(655),0(660) # 12650

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-001- 01      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000655 *****

0016107
0016107 03 000655 003405 000004
0016111 03 000657 055002 ----- 0016113
0016112 03 000660 003044 -----
0016113
0016113
-001- 04      IF      RO = DMPSFN THEN LN R2,4
-002- 05      CI      RO,DMPSFN
-001- 06      BNC     IFS718
-001- 07      LN      R2,4          #
-001- 08 IFS718
-001- 09      EOW     # 12650
-001- 10      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000660 *****
                    *

0016113 03 000661 144042 -----
0016114
0016114 03 000662 056462 -----
-001- 14      ST      R2,N(SUBST)(RAD) # SET UP FOR NEXT 4 LINES
-001- 15      RETURN 2
-001- 16      BTSAN  2

0016115
0016115 03 000663 140010 -----
0016116 03 000664 014000 -----
0016117 03 000665 055111 ----- 0016230
0016120
0016120 03 000666 140004 -----
0016121
-001- 20      COMPO
-001- 21      L      RO,N(AUX1)(RAD)
-001- 22      TZ      RO          # ZERO=BLKDMP NONZERO=SEGDMF
-001- 23      BNC     LSGBLK      # LAST BLOCK IN SEGMENT?
-001- 24      COMPO1
-001- 25      L      RO,N(LNKS)(RAD)
-001- 26      LPRINT PRIOR=3,FMT=(WRD(CR,LF),WRD(CR,LF)),LINK=NO

-001- 28 # MESSAGE PROTOTYPE
-001- 29 # CRLF CRLF
0016121 03 000667 073054 -----
0016122 03 000670 100260 -----
0016123 03 000671 021042 -----
0016124 03 000672 021042 -----
0016125 03 000673 010000 ----- TTYTBL
0016126 03 000674 000000 ----- TTYTBL
-002- 30      BSAI   LXPMPY      # SUBROUTINE LPMRY IS IN PROGRAM TTYAPP
-002- 31      VFD   1,1 2,0 1,0 3,0 1,0 1,1 1,0 2,3 1,0 3,0
-002- 32      VFD   4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_
-002- 33      VFD   4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_
-002- 34      VFD   5,2 11,qt
-002- 35      VFD   5, 11,qt
-001- 36      NOTE   THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
                    CONTAINED IN GENERAL REGISTERS
-001- 38      NOTE   THIS IS THE LAST SEGMENT OF A LINKED MESSAGE

0016127
-002- 42      TAPUTLCOM
-002- 43      CLOSE  TAPUCLNT
0016127 03 000675 173047 -----
0016130 03 000676 011300 -----
-001- 44      BSAI   RXEQR      # SUBROUTINE REQR IS IN PROGRAM CTAPH
0016131 03 000677 156000 -----
-001- 45      VFD   5,TAPUCLNT 4,CLOSE 1,1 1,0 5,0
0016132 03 000700 153003 ----- 0016135
0016133 03 000701 153022 ----- 0016155
0016134 03 000702 153021 ----- 0016155
-001- 46      BPAX   RO
-001- 47      B      PRNTCOMP
-001- 48      B      ABORTTU_
-001- 49      B      ABORTTU_      # SHOULD NEVER GET HERE

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0016135 01 PRNTCOMP
0016135 02 PRINT PACTION=A,FMT(WRD(T,A,P,E,U,T,I,L),WRD(C,O,M,P,L))

-001- 04 # MESSAGE PROTOTYPE
-001- 05 # A mm TAPEUTIL COMPL
0016135 03 000703 173053 ----- -002- 06 BSAI PXMRY # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
0016136 03 000704 101200 ----- -002- 07 VFD 1,1 2,0 1,0 3,1 1,0 1,1 1,0 2,0 1,0 3,0
0016137 03 000705 021042 ----- -002- 08 VFD 4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_
0016140 03 000706 021042 ----- -002- 09 VFD 4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_
0016141 03 000707 010246 ----- TTYTBL -002- 10 VFD 5,2 11,tapeUtil
0016142 03 000710 000302 ----- TTYTBL -002- 11 VFD 5, 11,CXOMPL
-001- 12 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS

0016143 03 000711 103000 ----- 15 ZR R0
0016144 03 000712 003026 ----- 16 LN R1,6
0016145 17 CLEAR
18 # CLEAR CONTROL BUFFER
0016145 03 000713 146001 ----- 19 STX R0,R1(RA0)
0016146 03 000714 036020 016145 0016145 20 BX R1,CLEAR
0016150 21 RETURN 2
0016150 03 000716 056462 ----- -001- 22 BTSAN 2

28 # TRANSFER VECTORS
0016151 29 NEXSTAT
0016151 03 000717 137000 017523 0017523 30 BL NEXSTAT
0016153 31 IDLSTATE
0016153 03 000721 137000 016703 0016703 32 BL IDLSTATE
0016155 33 ABORTTU
0016155 03 000723 137000 020215 0020215 34 BL ABORTTU

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0016157      01 DMPSPON
0016157      02 # TASK DISPENSER INVOLVED WITH THE DUMPING OF A SEGMENT OF DATA FROM TAPE
0016157      03 # OUT TO TTY. RAO POINTS TO TU CONTROL BLOCK RD HOLDS THE SUBSTATE NO.

-001- 05 TAPUTL OW      0(725)          # 12650
06          NOTE      ***** THE FIRST ADDRESS OVERWRITTEN IS 000725 *****

0016157 03 000725 156001 -----
0016160      09          BPAX      R1
0016160      10          EOW          # 12650
-001- 11          NOTE      ***** THE LAST ADDRESS OVERWRITTEN IS 000725 *****
*

0016160 03 000726 153006 ----- 0016166      15          B          OPENPM          # OPEN PAGMON
0016161 03 000727 153772 ----- 0016153      16          B          IDLSTATE_
0016162 03 000730 153600 ----- 0015762      17          B          RD1MON
0016163 03 000731 153770 ----- 0016153      18          B          IDLSTATE_
0016164 03 000732 153015 ----- 0016201      19          B          SEGHDR          # SEGMENT HEADER
0016165 03 000733 153631 ----- 0016016      20          B          CONOUT

0016166      23 OPENPM
0016166      24 # THIS SUBSTATE OPENS THE PAGE MONITOR

0016166 03 000734 140021 -----
0016167 03 000735 040006 -----
0016167      26          L          R1,N(BKNO)(RAO)
0016167      27          L          RO,N(TPNO)(RAO)
-001- 28 TAPUTL OW      0(736),0(740)          # 12650
29          NOTE      ***** THE FIRST ADDRESS OVERWRITTEN IS 000736 *****

0016170 03 000736 037020 126205 CTAPH -002- 32          OPENE      TAPUCLNT,(P,A,G,E,M,O,N)
0016172 03 000740 011123 ----- -001- 33          BSA          OPENTCB
0016173 03 000741 050101 ----- -001- 34          VFD          5,TAPUCLNT 1,0 1,1 2,0 3,((7+1)/2)+1 1,0 3,((7+1)/2)-1
0016174 03 000742 043705 ----- -001- 35          VFD          8,ASC_P 8,ASC_A
0016175 03 000743 046717 ----- -001- 36          VFD          8,ASC_G 8,ASC_E
0016176 03 000744 047000 ----- -001- 37          VFD          8,ASC_M 8,ASC_O
0016177      38          VFD          8,ASC_N 8,ASC_
0016177      39          EOW          # 12650
-001- 40          NOTE      ***** THE LAST ADDRESS OVERWRITTEN IS 000744 *****
*

0016177 03 000745 155756 ----- 0016155      44          BNC          ABORTTU_
0016200 03 000746 053751 ----- 0016151      45          B          NEXSTAT_

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0016201                                01 SEGHDR
0016201 03 000747 140170 -----      02 # THIS SUBSTATE DUMPS THE SEGMENT HEADER OUT TO TTY

0016201 03 000747 140170 -----      04 L R7,N(AUX1)(RAO) # SEGMENT NUMBER
0016202 03 000750 003601 001402 TTYTBL -001- 05 SPELL R8,(SP,SP)
0016202 03 000750 003601 001402 TTYTBL -001- 06 LI R8,ZZ
0016202 03 000750 003601 001402 TTYTBL -001- 07 TAPUTL OW 0(752) # 12650
0016202 03 000750 003601 001402 TTYTBL -001- 08 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000752 *****

0016204                                11 TAKEOUT 1
0016204 03 000752 006000 -----      -001- 12 LR 0,0
0016204 03 000752 006000 -----      -001- 13 CPATCH BGNP 0(356) # 12650
0016205 03 000753 037000 112010 0000356 -001- 14 BL XXX762
0016205 03 000753 037000 112010 0000356 -001- 15 NOTE CPATCH 'CSECT'
0016205 03 000753 037000 112010 0000356 -001- 16 NOTE ***** PATCH AREA BEGINS AT 000356 *****

0112010                                -001- 19 XXX762 PATCHAREA
0112010 10 000356 130400 045266 LAYOUT 20 LL RO,I OBUF # GET BLK ADR
0112012 10 000360 003402 003777 21 NI RO,M(BLKADR) # KEEP BLK ADR ONLY
0112014 22 ENDP # 12650
0112014 10 000362 037000 016207 0000755 -001- 23 BL XXX764
0112014 10 000362 037000 016207 0000755 -001- 24 NOTE ***** LAST PATCH ADDRESS USED IS 000363 *****
0112014 10 000362 037000 016207 0000755 -001- 25 NOTE ***** NUMBER OF PATCH WORDS USED IS 6 (DECIMAL) *****

0016207                                -001- 28 XXX764 OWCONTINUE
0016207 03 000755 106240 -----      29 LR R10,RO # BLK NUMBER IN OCTAL
0016210 30 EOW # 12650
0016210 31 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000755 *****
*

0016210                                35 CALL BINXBCD
0016210 03 000756 037020 110023 CSYSUB -001- 36 BSA BINXBCD
0016212 03 000760 106221 -----      37 LR R9,R1 # BLOCK NUMBER IN BCD
0016213 38 PRINT PRIOR=3,PACTION=M,FMT(WRD(D,M,P),WRD(T,A,P,E),WRD(S,E,G),BCD,WRD
,BCD,L_X),LINK=YES

-001- 41 # MESSAGE PROTOTYPE
-001- 42 # M mm DMP TAPE SEG nnnn WRD nnnn xxxx
0016213 03 000761 073053 -----      -002- 43 BSAI PXMRY # SUBROUTINE PHRY IS IN PROGRAM TTYAPP
0016214 03 000762 102270 -----      -002- 44 VFD 1,1 2,0 1,0 3,2 1,0 1,1 1,0 2,3 1,1 3,0
0016215 03 000763 100200 -----      -002- 45 VFD 4,TTYO_BCD 4,TTYO_WRD 4,TTYO_BCD 4,TTYO_WRD
0016216 03 000764 021046 -----      -002- 46 VFD 4,TTYO_4,TTYO_4,TTYO_4,TTYO_L_X
0016217 03 000765 014016 ----- TTYTBL -002- 47 VFD 5,3 11,DZMP
0016220 03 000766 000242 ----- TTYTBL -002- 48 VFD 5, 11,IXAPE
0016221 03 000767 001246 ----- TTYTBL -002- 49 VFD 5, 11,SXEG

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-001- 01      NOTE      THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
                        CONTAINED IN GENERAL REGISTERS R7,R8,R9,R10,
0016222 03 000770 144004 -----
-001- 03      NOTE      THIS IS THE FIRST SEGMENT OF A LINKED MESSAGE
0016223 03 000771 037040 010054 0010054 04      ST      RD,N(LNKS)(RAO)      # STORE TTY LINK NUMBER AWAY
0016225 03 000773 003065 ----- 05      A1S     TUUTCTL+N(SUBST)      # GO TO NEXT SUBSTATE
0016226 03 000774 044071 ----- 06      LN      R3,5                # LINE COUNT
0016227 08      ST      R3,N(AUX2)(RAO)
0016227 03 000775 056462 ----- 07      RETURN 2
-001- 09      BTSAN    2

0016230      13 LSGBLK
0016230 G3 000776 131400 045266 LAYOUT 14      LAL      RO,I_OBUF,RA1
0016232 03 001000 024015 ----- 15      TBN      RO,S(EOF)                # WAS LAST BLOCK READ?
0016233 03 001001 054665 ----- 16      BC      COMP01
0016234 03 001002 003000 ----- 17      ZR      RO
0016235 03 001003 044005 ----- 18      ST      RO,N(SGNO)(RAD)      # START AT FIRST WORD
19 TAPUTL OW 0(1004)                # 12650
-001- 20      NOTE      ***** THE FIRST ADDRESS OVERWRITTEN IS 001004 *****

0016236      23      TAKEOUT 1
0016236 03 001004 006000 ----- -001- 24      LR      0,0
0016237 03 001005 037000 111741 0000307 -001- 25 CPATCH BGNP 0(307)                # 12650
-001- 26      BL      XXX786
-001- 27      NOTE      CPATCH 'CSECT'
-001- 28      NOTE      ***** PATCH AREA BEGINS AT 000307 *****

0111741      -001- 31 XXX786 PATCHAREA
0111741 10 000307 103002 ----- 32      LN      RO,2
0111742 10 000310 044002 ----- 33      ST      RO,N(SUBST)(RAO)
0111743 10 000311 037040 010053 0000026 34      A1S     TUUTCTL+N(BKNO)
0111745      35      RETURN 2
0111745 10 000313 056462 ----- -001- 36      BTSAN    2
0111746      37      ENDP    NR                # 12650
-001- 38      NOTE      ***** LAST PATCH ADDRESS USED IS 000313 *****
-001- 39      NOTE      ***** NUMBER OF PATCH WORDS USED IS 5 (DECIMAL) *****

0016241      42      EOW      # 12650
-001- 43      NOTE      ***** THE LAST ADDRESS OVERWRITTEN IS 001006 *****
                        *

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0016241          01 DMPDMON
02 # THIS IS THE TASK DISPENSER FOR THE DUMP TAPE DIRECTRY TO TTY.
03 # RAD POINTS TO TU CONTROL BLOCK AND R1 CONTAINS SUBSTATE NUMBER
0016241 03 001007 156001 -----
04          BPAX      R1
0016242 03 001010 153511 ----- 0015753
05          B         SEZTU
0016243 03 001011 153517 ----- 0015762
06          B         RD1MON
0016244 03 001012 153707 ----- 0016153
07          B         IDLSTATE_
0016245 03 001013 153003 ----- 0016250
08          B         WRTDH          # WRITE DIRECTRY HEADER
0016246 03 001014 153025 ----- 0016273
09          B         WRTDCON       # CONTINUE WRITE
0016247 03 001015 153063 ----- 0016332
10          B         WRTDCONL     # CONTINUE WRITE LINKED

0016250          14 WRTDH
15 # THIS SUBSTATE PUTS THE DIRECTRY FILE HEADER OUT TO TTY

0016250 03 001016 140166 -----
17          L         R7,N(TPNO)(RAD) # GET TAPE NUMBER
0016251          18          PRINT   PRIOR=3,PACTION=M,FMT=(WRD(D,M,P),WRD(T,A,P,E),WRD(D,I,R,E,C,T,R
,Y),DEC),LINK=YES

-001- 21 # MESSAGE PROTOTYPE
-001- 22 #          M mm          DMP TAPE DIRECTRY dddd
0016251 03 001017 073053 -----
-002- 23          BSAI      PXMRY          # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
0016252 03 001020 102270 -----
-002- 24          VFD      1,1 2,0 1,0 3,2 1,0 1,1 1,0 2,3 1,1 3,0
0016253 03 001021 021100 -----
-002- 25          VFD      4,TTYO_ 4,TTYO_ 4,TTYO_DEC 4,TTYO_WRD
0016254 03 001022 021042 -----
-002- 26          VFD      4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_
0016255 03 001023 014016 ----- TTYTBL
-002- 27          VFD      5,3 11,DXMP
0016256 03 001024 000242 ----- TTYTBL
-002- 28          VFD      5, 11,TXAPE
0016257 03 001025 001054 ----- TTYTBL
-002- 29          VFD      5, 11,direcTry
-001- 30          NOTE      THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS R7,
THIS IS THE FIRST SEGMENT OF A LINKED MESSAGE

-001- 32          NOTE      THIS IS THE FIRST SEGMENT OF A LINKED MESSAGE
0016260 03 001026 103022 -----
33          LN          R1,2
0016261 03 001027 044025 -----
34          ST          R1,N(SGNO)(RAO) # TO START WRITE WITH 3RD WORD OF I_OBUF
0016262 03 001030 031420 045267 LAYOUT
35          LAL         R1,I_OBUF+1,RA1 # GET ENTRY COUNT
0016264 03 001032 003422 000377
36          NI          R1,MSK(8) # KEEP ENTRY COUNT ONLY
0016266 03 001034 044030 -----
37          ST          R1,N(AUX1)(RAO) # STORE ENTRY COUNT
0016267 03 001035 037040 010054 0010054
38          A1S        TUUTCTL+N(SUBST) # GO TO NEXT STATE
0016271 03 001037 044004 -----
39          ST          RD,N(LNKS)(RAO) # STORE TTY LINK NUMBER
0016272          40          RETURN 2
0016272 03 001040 056462 -----
-001- 41          BTSAN  2

0016273          45 WRTDCON
46 # THIS SUBSTATE PUTS THE FILE NAMES IN ASCI OUT TO TTY

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0016273 03 001041 140004 ----- 01 L RO,N(LNKS)(RA0) # GET TTY LINK NUMBER
0016274 02 CALL LINKRDY # CHECK IF LAST SEGMENT PRINTED
0016274 03 001042 037021 125021 TTYAPP -001- 03 BSA LINKRDY
0016276 03 001044 156000 ----- 04 BPAX RO # RO WILL = 0, 1, OR 2
0016277 03 001045 153630 ----- 0016127 05 B TAPUTLCOM
0016300 06 RETURN 2
0016300 03 001046 156462 ----- -001- 07 BTSAN 2
0016301 03 001047 140030 ----- 08 L R1,N(AUX1)(RAD) # GET WORD COUNT
0016302 03 001050 014021 ----- 09 TZ R1
0016303 03 001051 054615 ----- 0016120 10 BC COMP01
0016304 03 001052 004037 ----- 11 SN R1,1
0016305 03 001053 044030 ----- 12 ST R1,N(AUX1)(RAD) # STORE NEW WORD COUNT
0016306 03 001054 040005 ----- 13 L RO,N(SGNO)(RAD) # GET I_OBUF INDEX
0016307 03 001055 031420 045266 LAYOUT 14 LAL R1,I_OBUF,RA1 # SET RA1 TO START I_OBUF LOCATION
0016311 03 001057 043420 ----- 15 LAX R1,RO(RA1) # SET UP ADDRESS REG FOR 1ST WORD TO PRINT
0016312 03 001060 004404 ----- 16 AN RO,4 # UPDATE INDEX COUNTER
0016313 03 001061 044005 ----- 17 ST RO,N(SGNO)(RAD) # STORE NEW COUNT
0016314 03 001062 040540 ----- 18 L R6,0(RA1)
0016315 03 001063 040561 ----- 19 L R7,1(RA1)
0016316 03 001064 040602 ----- 20 L R8,2(RA1)
0016317 03 001065 040623 ----- 21 L R9,3(RA1)
-001- 22 TAPUTL OW 0(1066) # 12281
-001- 23 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 001066 *****

26 # ***** STUFF BLANKS *****
0016320 27 ASCII R2,(SP,SP) # BLANK
0016320 03 001066 003441 120240 -001- 28 LI R2,PACK(8,X(A0) 8,X(A0))
0016322 03 001070 016471 000377 29 LRM R3,R9,MSK(8)
0016324 03 001072 014063 ----- 30 TZ R3
0016325 03 001073 037000 112057 0000425 -001- 31 CPATCH BGNP 0(425) # 12281
-001- 32 BL XXX812
-001- 33 NOTE CPATCH 'CSECT'
-001- 34 NOTE ***** PATCH AREA BEGINS AT 000425 *****

0112057 -001- 37 XXX812 PATCHAREA
0112057 10 000425 155025 ----- 0112104 38 BNC BAKGO
0112060 10 000426 016222 000377 39 IRM R9,R2,MSK(8)
0112062 10 000430 016471 177400 40 LRM R3,R9,MSK(8,8)
0112064 10 000432 014063 ----- 41 TZ R3
0112065 10 000433 055017 ----- 0112104 42 BNC BAKGO
0112066 10 000434 016222 177400 43 IRM R9,R2,MSK(8,8)
0112070 10 000436 016470 000377 44 LRM R3,R8,MSK(8)
0112072 10 000440 014063 ----- 45 TZ R3
0112073 10 000441 055011 ----- 0112104 46 BNC BAKGO
0112074 10 000442 016202 000377 47 IRM R8,R2,MSK(8)
0112076 10 000444 016470 177400 48 LRM R3,R8,MSK(8,8)
0112100 10 000446 014063 ----- 49 TZ R3

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0112101 10 000447 055003 ----- 0112104    01      BNC      BAKGO
0112102 10 000450 016202 177400             02      IRM      R8,R2,MSK(8,8)
0112104                    03 BAKGO
                    04      SPELL   R10,(SP,SP)
0112104 10 000452 103641 001402 TTYTBL -001- 05      LI      R10,zz
                    06      SPELL   R11,(S,T,A,R,T)
0112106 10 000454 003661 000344 TTYTBL -001- 07      LI      R11,SXTART
0112110 10 000456 040004 -----             08      L      RD,N(LNKS)(RAO) # GET LINK
0112111                    09      LPRINT  PRIOR=3,FMT=(WRD(CR,LF),WRD(SP,SP),ASC,ASC,ASC,ASC,WRD,WRD),LINK
                    =YES

-001- 12 # MESSAGE PROTOTYPE
-001- 13 # CRLF SPSP aaaaaaaaaWRD WRD
0112111 10 000457 073054 ----- -002- 14      BSAI    LXPMRY # SUBROUTINE LPMRY IS IN PROGRAM TTYAPP
0112112 10 000460 100270 ----- -002- 15      VFD    1,1 2,0 1,0 3,0 1,0 1,1 1,0 2,3 1,1 3,0
0112113 10 000461 031463 ----- -002- 16      VFD    4,TTYO_ASC 4,TTYO_ASC 4,TTYO_ASC 4,TTYO_ASC
0112114 10 000462 021000 ----- -002- 17      VFD    4,TTYO_ 4,TTYO_ 4,TTYO_WRD 4,TTYO_WRD
0112115 10 000463 010000 ----- TTYTBL -002- 18      VFD    5,2 11,qt
0112116 10 000464 001402 137000 TTYTBL -002- 19      VFD    5, 11,zz
-001- 20      NOTE    THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
                    CONTAINED IN GENERAL REGISTERS R6,R7,R8,R9,R10,R11,
-001- 22      NOTE    THIS IS A SEGMENT OF A LINKED MESSAGE
0112117                    23      ENDP    # 12281
0112117 10 000465 137000 016327 0001075 -001- 24      BL     %X%830
-001- 25      NOTE    ***** LAST PATCH ADDRESS USED IS 000466 *****
-001- 26      NOTE    ***** NUMBER OF PATCH WORDS USED IS 34 (DECIMAL) *****

0016327                    -001- 29 %X%830 OWCONTINUE
0016327                    30      EOH    # 12281
-001- 31      NOTE    ***** THE LAST ADDRESS OVERWRITTEN IS 001074 *****
                    *

0016327 03 001075 137040 010054 0010054    35      A1S    TUUTCTL+N(SUBST)
0016331                    36      RETURN  2
0016331 03 001077 056462 ----- -001- 37      BTSAN  2

0016332                    41 WRTDCONL
                    42 # THIS SUBSTATE PUTS THE TRACKS, BLOCK ADDRESSES, LENGTH
                    43 # OF FILES, AND MISC. OUT TO TTY

0016332 03 001100 140004 -----    45      L      RD,N(LNKS)(RAO) # GET TTY LINK NUMBER
0016333                    46      CALL   LINKRDY # CECK IF LAST SEGMENT PRINTED
0016333 03 001101 037021 125021 TTYAPP -001- 47      BSA    LINKRDY
0016335 03 001103 156000 -----    48      BPAX   RD # RD WILL= 0,1 OR 2
0016336 03 001104 153571 ----- 0016127    49      B      TAPUTLCOM

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0016337 03 001105 156462 -----
0016337 03 001105 156462 ----- -001- 01 RETURN 2
0016340 03 001106 140005 ----- -001- 02 BTSAN 2
0016341 03 001107 031420 045266 LAYOUT 03 L RD,N(SGNO)(RAO) # GET I_OBUF INDEX
0016343 03 001111 043420 ----- 04 LAL R1,I_OBUF,RA1 # SET RA1 TO I_OBUF
0016344 03 001112 004402 ----- 05 LAX R1,R0(RA1) # SET UP FOR MORE WORDS TO PRINT
0016345 03 001113 044005 ----- 06 AN R0,2
0016346 03 001114 040541 ----- 07 ST RD,N(SGNO)(RAO) # NEW COUNT
0016347 03 001115 006166 ----- 08 L R6,1(RA1) # BEGINNING TRACK AND BLOCK NUMBER
0016350 03 001116 003542 014000 09 LR R7,R6 # SAVE R7
0016352 03 001120 010553 ----- 10 NI R6,M(TRCK) # KEEP TRACK ONLY
0016353 03 001121 004541 ----- 11 RRN R6,S(TRCK)
0016354 03 001122 003562 003777 12 AN R6,1 # FOR CORRECT PRINTOUT OF TRACK
13 NI R7,M(BLKADR) # KEEP BLOCK ADDRESS ONLY
14 TAPUTL OW 0(1124) # 12281
-001- 15 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 001124 *****

0016356 03 001124 003601 001054 18 LI R8,EXND
0016360 03 001126 040620 ----- 19 L R9,D(RA1) # END ADR
0016361 03 001127 006251 ----- 20 LR R10,R9 # SAVE R10
0016362 03 001130 003622 014000 21 NI R9,M(TRACK) # KEEP TRK NO.
0016364 03 001132 010633 ----- 22 RRN R9,S(TRACK)
0016365 03 001133 004621 ----- 23 AN R9,1 # TRK CORRECTED
0016366 03 001134 003642 003777 24 NI R10,M(BLKADR) # KEEP BLK ADR
0016370 03 001136 006272 ----- 25 LR R11,R10 # KEEP R11
26 # ***** FIX UP LENGTH ON WRAP-AROUND *****
0016371 03 001137 017151 000003 27 CRM R6,R9,MSK(W(TRACK))
0016373 03 001141 054003 ----- 0016376 28 BC CONHERE
0016374 03 001142 003660 000526 MASACS 29 AI R11,BLKMAX-1
0016376 03 001144 105267 ----- 30 CONHERE
0016377 03 001145 004661 ----- 31 SR R11,R7 # R11=LENGTH
0016400 03 001146 003100 ----- 32 AN R11,1 # CORRECT LENGTH
0016401 03 001147 003120 ----- 33 ZR R4
0016402 03 001150 040004 ----- 34 ZR R5
0016403 35 L RD,N(LNKS)(RAO) # GET LINK
36 LPRINT PRIOR=3,FMT=(WRD,WRD,DEC5,DEC5,WRD,DEC5,DEC5,DEC5),LINK=YES

-001- 38 # MESSAGE PROTOTYPE
-001- 39 #
-002- 40 BSAI LXPMRY # SUBROUTINE LXPMRY IS IN PROGRAM TTYAPP
0016403 03 001151 073054 ----- -002- 41 VFD 1,0 2,0 1,0 3,0 1,0 1,1 1,0 2,3 1,1 3,0
0016404 03 001152 000270 ----- -002- 42 VFD 4,TTYO_DEC5 4,TTYO_WRD 4,TTYO_DEC5 4,TTYO_DEC5
0016405 03 001153 110231 ----- -002- 43 VFD 4,TTYO_4,TTYO_4,TTYO_DEC5 4,TTYO_DEC5
0016406 03 001154 021231 ----- -001- 44 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS R4,R5,R6,R7,R8,R9,R10,R11,
0016407 -001- 46 NOTE THIS IS A SEGMENT OF A LINKED MESSAGE
0016407 03 001155 106000 ----- 47 TAKEOUT 2
0016410 03 001156 006000 ----- -001- 48 LR 0,0
-001- 49 LR 0,0

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0016411		01	DDELETE	NOTE	1	
		02	EOW			# 12281
	-001-	03	NOTE			***** THE LAST ADDRESS OVERWRITTEN IS 001156 *****
						*
0016411	03	001157	103004	-----	07	LN RD,4
0016412	03	001160	044002	-----	08	ST RD,N(SUBST)(RAD)
0016413					09	RETURN 2
0016413	03	001161	056462	-----	-001- 10	BTSAN 2

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0016414

01 DMPLMON
 02 # TASK DISPENSER FOR THE DUMPING OF THE LABEL FILE OUT TO TTY
 03 # RAO POINTS TO THE TU CONTROL BLOCK AND R1 CONTAINS SUBSTATE NUMBER

0016414 03 001162 156001 -----
 0016415 03 001163 153011 ----- 0016426
 0016416 03 001164 153265 ----- 0016703
 0016417 03 001165 153005 ----- 0016424
 0016420 03 001166 153263 ----- 0016703
 0016421 03 001167 153021 ----- 0016442
 0016422 03 001170 153035 ----- 0016457

05 BPAX R1
 06 B OPENLF
 07 B IDLSTATE
 08 B RD1MON
 09 B IDLSTATE
 10 B WRTLH
 11 B WRTLCON
 12 TAPUTL OW O(1171) # 12436
 -001- 13 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 001171 *****

0016423 03 001171 153155 ----- 0016600
 0016424

16 DPATCH NOTE ! REMOVE ' ' FROM NXTIM
 17 B NXTIM_
 18 EOW # 12436
 -001- 19 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 001171 *****
 *

0016424
 0016424 03 001172 137000 015762 0015762

23 RD1MON
 24 BL RD1MON

0016426

28 OPENLF
 29 # THIS SUBSTATE DOES AN OPEN OF THE LABEL FILE

0016426 03 001174 140006 -----
 0016427 03 001175 003020 -----
 0016430 03 001176 037020 126205 CTAPH -002- 34
 0016432 03 001200 011102 ----- -001- 35
 0016433 03 001201 146101 ----- -001- 36
 0016434 03 001202 041305 ----- -001- 37
 0016435 03 001203 146000 ----- -001- 38
 0016436 03 001204 155517 ----- 0016155
 0016437 03 001205 037040 010054 0010054
 0016441
 0016441 03 001207 056462 ----- -001- 42

31 L RO,N(TPNO)(RAO)
 32 ZR R1
 33 OPENE TAPUCLNT,(L,A,B,E,L) # POSITIONS TAPE AT LABEL FILE
 34 BSA OPENTCB
 35 VFD 5,TAPUCLNT 1,0 1,1 2,0 3,((5+1)/2)+1 1,0 3,((5+1)/2)-1
 36 VFD 8,ASC_L 8,ASC_A
 37 VFD 8,ASC_B 8,ASC_E
 38 VFD 8,ASC_L 8,ASC_
 39 BNC ABORTTU
 40 A1S TUUTCTL+N(SUBST) # GO TO NEXT STATE
 41 RETURN 2
 42 BTSAN 2

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0016442      01 WRTLH
02 # THIS SUBSTATE PUTS THE LABEL FILE HEADER OUT TO TTY

0016442 03 001210 140206 -----
0016443      04      L      RB,N(TPNO)(RAO)      # GET TAPE NUMBER
0016443      05      PRINT  PRIOR=3,PACTION=M,FMT=(WRD(D,M,P),WRD(T,A,P,E),WRD(L,A,B,E,L),WRD
                        D(F,I,L,E),DEC),LINK=YES

-001- 08 # MESSAGE PROTOTYPE
-001- 09 #      M mm      DMP TAPE LABEL FILE ddddd
0016443 03 001211 073053 -----
0016444 03 001212 102270 -----
0016445 03 001213 022000 -----
0016446 03 001214 021042 -----
0016447 03 001215 020016 ----- TTYTBL
0016450 03 001216 000242 ----- TTYTBL
0016451 03 001217 001467 ----- TTYTBL
0016452 03 001220 000122 ----- TTYTBL

-002- 10      BSAI      PXMRY      # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
-002- 11      VFD      1,1 2,0 1,0 3,2 1,0 1,1 1,0 2,3 1,1 3,0
-002- 12      VFD      4,TTYO_ 4,TTYO_DEC 4,TTYO_WRD 4,TTYO_WRD
-002- 13      VFD      4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_
-002- 14      VFD      5,4 11,DAMP
-002- 15      VFD      5, 11,TXAPE
-002- 16      VFD      5, 11,LXABEL
-002- 17      VFD      5, 11,FXILE
-001- 18      NOTE      THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
                        CONTAINED IN GENERAL REGISTERS RB,
-001- 20      NOTE      THIS IS THE FIRST SEGMENT OF A LINKED MESSAGE
0016453 03 001221 144004 -----
0016454 03 001222 037040 010054 0010054
0016456      21      ST      RD,N(LNKS)(RAO)      # STORE TTYLINK
0016456      22      A1S      TUUTCTL+N(SUBST)
0016456      23      RETURN  2
-001- 24      BTSAN  2

-001- 28 TAPUTL OW      0(1225)      # 12436
-001- 29      NOTE      ***** THE FIRST ADDRESS OVERWRITTEN IS 001225 *****

0016457      32 WRTLCON
33 # THIS SUBSTATE CONTINUES THE PRINTING OF THE LABEL FILE.
34 # THE DATA TO BE PRINTED IS PUT INTO REG'S 6 THRU 13.
0016457 03 001225 103041 -----
0016460      35      LN      R2,1
0016460 03 001226 103020 -----
0016461 03 001227 031500 045266 LAYOUT
0016463 03 001231 043502 -----
0016464      36 WRTLCON2
0016464      37      ZR      R1
0016464      38      LAL      R4,I OBUF,RA1
0016464      39      LAX      R4,R2(RA1)
0016464      40 ONCEAGN
0016464 03 001232 140004 -----
0016464      41      L      RD,N(LNKS)(RAO)
-001- 43      42 TAPUTL OW      0(1233)      #3E790257
                        NOTE      ***** THE FIRST ADDRESS OVERWRITTEN IS 001233 *****

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0016465 03 001233 037000 121340 0000102 -001- 01 CPATCH7 BGNP 0(102) #3E790257
-001- 02 BL XXX875
-001- 03 NOTE CPATCH7 'CSECT'
-001- 04 NOTE ***** PATCH AREA BEGINS AT 000102 *****

0121340
0121340 14 000102 106061 ----- -001- 07 XXX875 PATCHAREA
0121341 08 LR R3,R1 # SAVE R1
0121341 09 CALL LINKRDY
0121341 14 000103 037021 125021 TTYAPP -001- 10 BSA LINKRDY
0121343 11 ENDP #3E790257
0121343 14 000105 137000 016467 0001235 -001- 12 BL XXX878
-001- 13 NOTE ***** LAST PATCH ADDRESS USED IS 000106 *****
-001- 14 NOTE ***** NUMBER OF PATCH WORDS USED IS 5 (DECIMAL) *****

0016467 -001- 17 XXX878 OHCONTINUE
0016467 18 EOW #3E790257
-001- 19 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 001234 *****
*

0016467 03 001235 156000 ----- 23 BPAX R0
0016470 03 001236 153465 ----- 0016155 24 B ABORTTU__
0016471 25 RETURN 2
0016471 03 001237 156462 ----- -001- 26 BTSAN 2
0016472 03 001240 144045 ----- 27 ST R2,N(SGNO)(RAO)
-001- 28 TAPUTL OW 0(1241) #3E790257
-001- 29 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 001241 *****

0016473 03 001241 037000 121345 0000107 -001- 32 CPATCH7 BGNP 0(107) #3E790257
-001- 33 BL XXX885
-001- 34 NOTE CPATCH7 'CSECT'
-001- 35 NOTE ***** PATCH AREA BEGINS AT 000107 *****

0121345
0121345 14 000107 106023 ----- -001- 38 XXX885 PATCHAREA
0121346 14 000110 003060 ----- 39 LR R1,R3 # RESTORE R1
0121347 14 000111 003120 ----- 40 ZR R3
0121350 41 ZR R5
0121350 42 ENDP #3E790257
0121350 14 000112 037000 016475 0001243 -001- 43 BL XXX887
-001- 44 NOTE ***** LAST PATCH ADDRESS USED IS 000113 *****
-001- 45 NOTE ***** NUMBER OF PATCH WORDS USED IS 5 (DECIMAL) *****

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0016475  '
0016475      -001- 01  XXX887  OWCONTINUE
0016475      02      EOW                               #3E790257
-001- 03      NOTE  ***** THE LAST ADDRESS OVERWRITTEN IS 001242 *****
*

0016475 03 001243 114104 -----
0016476 03 001244 054422 ----- 0016120
0016477
0016477 03 001245 110537 -----
0016500 03 001246 156005 -----
0016501 03 001247 141541 -----
0016502 03 001250 053016 ----- 0016520
0016503 03 001251 141561 -----
0016504 03 001252 053014 ----- 0016520
0016505 03 001253 141601 -----
0016506 03 001254 053012 ----- 0016520
0016507 03 001255 141621 -----
0016510 03 001256 053010 ----- 0016520
0016511 03 001257 141641 -----
0016512 03 001260 053006 ----- 0016520
0016513 03 001261 141661 -----
0016514 03 001262 053004 ----- 0016520
0016515 03 001263 141701 -----
0016516 03 001264 053002 ----- 0016520
0016517 03 001265 141721 -----
0016520
0016520 03 001266 110521 -----
0016521 03 001267 004461 -----
0016522 03 001270 004422 -----
0016523 03 001271 004521 -----
0016524
0016524 03 001272 006001 -----
0016525 03 001273 005004 -----
0016526 03 001274 054004 ----- 0016532
0016527
0016527 03 001275 003465 000010
0016531 03 001277 055746 ----- 0016477
0016532
0016532 03 001300 103525 000010
0016534 03 001302 054027 ----- 0016563
0016535
0016535 03 001303 110537 -----
0016536 03 001304 056005 -----
0016537 03 001305 103140 -----
0016540 03 001306 053016 ----- 0016556
0016541 03 001307 103160 -----
0016542 03 001310 053014 ----- 0016556
0016543 03 001311 103200 -----

07      TZ      R4
08      BC      COMP01
09      LDRGS
10      RLN     R5,1
11      BPAX    R5
12      LA      R6,1(RA1)
13      B       INCR
14      LA      R7,1(RA1)
15      B       INCR
16      LA      R8,1(RA1)
17      B       INCR
18      LA      R9,1(RA1)
19      B       INCR
20      LA      R10,1(RA1)
21      B       INCR
22      LA      R11,1(RA1)
23      B       INCR
24      LA      R12,1(RA1)
25      B       INCR
26      LA      R13,1(RA1)
27      INCR
28      RRN     R5,1
29      AN      R3,1
30      AN      R1,2
31      AN      R5,1
32      IF      R1 >= R4 THEN B PRGS
33      LR      R0,R1
34      SR      R0,R4
35      BC      PRGS
36      IF      R3 = 8 THEN B LDRGS
37      CI      R3,8
38      BNC     LDRGS
39      PRGS
40      CI      R5,8
41      BC      DUMPIT
42      PRGS1
43      RLN     R5,1
44      BPAX    R5
45      ZR      R6
46      B       ZEROIT
47      ZR      R7
48      B       ZEROIT
49      ZR      R8

# LINE COUNT
# GEN'ED CHAR. COUNT
# BPAX POINTER

# HAS 8 REG'S BEEN FILLED ?
# IF YES PRINT DATA

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

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0016544 03 001312 053012 ----- 0016556 01 B ZEROIT
0016545 03 001313 103220 ----- 02 ZR R9
0016546 03 001314 053010 ----- 0016556 03 B ZEROIT
0016547 03 001315 103240 ----- 04 ZR R10
0016550 03 001316 053006 ----- 0016556 05 B ZEROIT
0016551 03 001317 103260 ----- 06 ZR R11
0016552 03 001320 053004 ----- 0016556 07 B ZEROIT
0016553 03 001321 103300 ----- 08 ZR R12
0016554 03 001322 053002 ----- 0016556 09 B ZEROIT
0016555 03 001323 103320 ----- 10 ZR R13
0016556 11 ZEROIT
0016556 03 001324 110521 ----- 12 RRN R5,1
0016557 03 001325 004521 ----- 13 AN R5,1
0016560 03 001326 003525 000010 14 CI R5,8
0016562 03 001330 055753 ----- 0016535 15 BNC PRGS1 # HAS 8 REG'S BEEN FILLED
0016563 16 DUMPIT
0016563 03 001331 131400 010052 0010052 17 LAL R0,TUUTCTL,RA1 # SET RA1 TO TAPUTIL CONTROL BLK
0016565 03 001333 044503 ----- 18 ST R4,N(LENO)(RA1) # CHAR COUNT FROM IOBUF
0016566 03 001334 044430 ----- 19 ST R1,N(AUX1)(RA1) # GEN'ED CHAR COUNT
0016567 03 001335 040442 ----- 20 L R2,N(SUBST)(RA1)
0016570 03 001336 003445 000006 21 CI R2,6 # IS THIS THE FIRST STRING FROM IOBUF ?
22 DPATCH NOTE ! CHANGE BNCL TO BNC
0016572 03 001340 050400 020344 0020344 23 BNCL RPRNT # IF YES DO A CR,LF
0016574 03 001342 040451 ----- 24 L R2,N(AUX2)(RA1)
0016575 03 001343 014042 ----- 25 TZ R2 # 0 = CR,LF SP,SP 1 = NO CR,LF AND SP,SP
# 12436
0016576 03 001344 037000 020340 0020340 -001- 26 TAPUTL BGNP 0(3106)
-001- 27 BL %XX896
-001- 28 NOTE TAPUTL 'CSECT'
-001- 29 NOTE ***** PATCH AREA BEGINS AT 003106 *****

0020340 -001- 32 %XX896 PATCHAREA
0020340 03 003106 154004 ----- 0020344 33 BC RPRNT
0020341 03 003107 003100 ----- 34 ZR R4
0020342 03 003110 003120 ----- 35 ZR R5
0020343 03 003111 053005 ----- 0020350 36 B RPRNTIT
0020344 37 RPRNT
0020344 03 003112 103501 000000 TTYTBL -001- 38 SPELL R4,(CR,LF)
39 LI R4,qt
40 SPELL R5,(SP,SP)
0020346 03 003114 003521 001402 TTYTBL -001- 41 LI R5,zz
0020350 42 RPRNTIT
0020350 03 003116 140404 ----- 43 L R0,N(LNKS)(RA1) # GET TTY LINK
0020351 03 003117 040445 ----- 44 L R2,N(SGNO)(RA1) # OLD IOBUF POINTER
0020352 03 003120 001443 ----- 45 AR R2,R3
0020353 03 003121 044445 ----- 46 ST R2,N(SGNO)(RA1) # NEW IOBUF POINTER
47 DDELETE NOTE 5
W0020354 03 003122 037021 124576 TTYAPP 48 BSA LPMRY
0020356 03 003124 010270 ----- 49 DATA 0(10270)

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COMMON NONRESIDENT UTILITIES

PR-1C954-50

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TAPE UTILITY MULTISCAN FUNCTION

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TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

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0020357 03 003125 031463 ----- 01      DATA 0(31463)
0020360 03 003126 031463 ----- 02      DATA 0(31463)
                                03 DINSERT NOTE ' LLPRINT PRIOR=3,FMT=(WRD,WRD,ASC,ASC,ASC,ASC,ASC,ASC,ASC,ASC),
                                LIN
0020361 03 003127 140522 ----- 05      L      R5,N(SUBST)(RA1)
0020362 03 003130 003525 000006 06      CI      R5,6
0020364 03 003132 054003 ----- 07      BC      OUTOUT # RETURN AT SUBSTATE NXTIM
0020365 03 003133 037040 010054 0010054 08      A1S     TUUTCTL+N(SUBST) # GO TO SUBSTATE NXTIM
0020367 09      OUTOUT
0020367 10      RETURN 2
0020367 03 003135 156462 ----- -001- 11     BTSAN 2
0020370 12     NXTIM
0020370 03 003136 140103 ----- 13      L      R4,N(LENO)(RA0)
0020371 03 003137 040030 ----- 14      L      R1,N(AUX1)(RA0)
0020372 15      IF      R1 >= R4 THEN B WHTNXT
0020372 03 003140 006001 ----- -003- 16     LR      RO,R1
0020373 03 003141 005004 ----- -003- 17     SR      RO,R4
0020374 03 003142 054011 ----- 0020405 -001- 18     BC      WHTNXT
0020375 03 003143 040045 ----- 19      L      R2,N(S6NO)(RA0) # IOBUF INDEX POINTER
0020376 03 003144 003061 ----- 20     LN      R3,1 # NO LINE FEED OR SPACE
0020377 03 003145 044071 ----- 21     ST      R3,N(AUX2)(RA0)
0020400 03 003146 031460 045266 LAYOUT 22     LAL     R3,I OBUF,RA1
0020402 03 003150 043462 ----- 23     LAX     R3,R2(RA1) # POSITION RA1 TO GET MORE CHAR'S.
                                24 DPATCH NOTE ! CHANGE BL TO B IN NEXT LINE
0020403 03 003151 037000 016464 0016464 25     BL      ONCEAGN
0020405 26     WHTNXT # GET NEXT STRING OF CHAR'S.
0020405 03 003153 140045 ----- 27      L      R2,N(S6NO)(RA0)
0020406 03 003154 004441 ----- 28     AN      R2,1 # CORRECT IOBUF POINTER
0020407 03 003155 003060 ----- 29     ZR      R3 # LINE FEED AND SPACE
0020410 03 003156 044071 ----- 30     ST      R3,N(AUX2)(RA0)
                                31 DPATCH NOTE ! CHANGE BL TO B IN NEXT LINE
0020411 03 003157 037000 016460 0016460 32     BL      WRTLCON2
0020413 33     ENDP   NR # 12436
                                -001- 34     NOTE ***** LAST PATCH ADDRESS USED IS 003160 *****
                                -001- 35     NOTE ***** NUMBER OF PATCH WORDS USED IS 43 (DECIMAL) *****

                                38 DDELETE NOTE 2
                                39 NXTIM_
0016600 40     BL      NXTIM
0016600 03 001346 137000 020370 0020370 41     EOW
0016602 -001- 42     NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 001347 *****
                                *

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COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

0016602

01 INNON
 02 # MONITOR FOR INPUTTING A TAPE BLOCK.

0016602 03 001350 156001 -----
 0016603 03 001351 153004 ----- 0016607
 0016604 03 001352 153620 ----- 0016424
 0016605 03 001353 153076 ----- 0016703
 0016606 03 001354 153003 ----- 0016611

04 BPAX R1
 05 B SEZTU # GET CONTROL OF TAPE UNIT
 06 B RD1MON # READ TAPE
 07 B IDLSTATE
 08 B TAPUTLCOM_

0016607

14 # TRANSFER VECTORS

0016607 03 001355 137000 015753 0015753
 0016611
 0016611 03 001357 137000 016127 0016127

15 SEZTU_
 16 BL SEZTU
 17 TAPUTLCOM_
 18 BL TAPUTLCOM

COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

0016613

01 OPMON
 02 # UTILITY MONITOR FOR HANDLING THE WRITING OF A TAPE BLK.

0016613 03 001361 156001 -----
 0016614 03 001362 153773 ----- 0016607
 0016615 03 001363 153003 ----- 0016620
 0016616 03 001364 153065 ----- 0016703
 0016617 03 001365 153772 ----- 0016611

04 BPAX R1
 05 B SEZTU # SIEZE TAPE UNIT CONTROL
 06 B BGNWRIT
 07 B IDLSTATE
 08 B TAPUTLCOM_

0016620

12 BGNWRIT
 13 # SUBSTATE USED TO INITIATE WRITE OF I/O BUFFER TO TAPE

0016620 03 001366 130400 045266 LAYOUT
 0016622 03 001370 010415 -----

0016623 03 001371 073047 -----
 0016624 03 001372 010700 -----
 0016625 03 001373 156000 -----
 0016626 03 001374 153052 ----- 0016700
 0016627 03 001375 153264 ----- 0017113
 0016630
 0016630 03 001376 156462 -----

15 LL RO,I OBUF
 16 RRN RO,S(EOF) # POSITION FOR WRITE
 17 WRITE TAPUCLNT # START WRITE OF BUFFER
 -002- 18 BSAI RREQR # SUBROUTINE REQR IS IN PROGRAM CTAPH
 -001- 19 VFD 5,TAPUCLNT 4,WRITE 1,1 1,0 5,0
 20 BPAX RO
 21 B ADRETN
 22 B ABORTTU_
 23 RETURN 2
 -001- 24 BTSAN 2

COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY MONITOR ROUTINES

CNRUTL

W77D

0016631

01 AUDITMON

02 # THIS IS THE TASK DISPENSER FOR THE TAPE TO TAPE AUDIT PROGRAM

0016631	03	001377	131460	043317	CTSD	04	LAL	R3,TCBADR,RA1
0016633	03	001401	040026	-----		05	L	R1,N(TPNO)(RAD)
0016634	03	001402	040042	-----		06	L	R2,N(SUBST)(RAD)
0016635	03	001403	056002	-----		07	BPAX	R2
0016636	03	001404	153017	-----	0016655	08	B	CMPSTCK
0016637	03	001405	153044	-----	0016703	09	B	IDLSTATE
0016640	03	001406	153051	-----	0016711	10	B	POS Compr
0016641	03	001407	153042	-----	0016703	11	B	IDLSTATE
0016642	03	001410	153111	-----	0016753	12	B	SAVECRC
0016643	03	001411	153040	-----	0016703	13	B	IDLSTATE
0016644	03	001412	153046	-----	0016712	14	B	POSREQ
0016645	03	001413	153036	-----	0016703	15	B	IDLSTATE
0016646	03	001414	153076	-----	0016744	16	B	REDCOMR
0016647	03	001415	153034	-----	0016703	17	B	IDLSTATE
0016650	03	001416	153105	-----	0016755	18	B	READOTHER
0016651	03	001417	153032	-----	0016703	19	B	IDLSTATE
0016652	03	001420	153205	-----	0017057	20	B	WRTITAB
0016653	03	001421	153030	-----	0016703	21	B	IDLSTATE
0016654	03	001422	153135	-----	0017011	22	B	REDMORE

0016655

26 CMPSTCK

27 # THIS SUBSTATE WILL ANALYZE WHAT TYPE OF REQUEST WAS MADE
 28 # AND IF SYSTEM DEFENSES SHOULD BE OVERCOME.

0016655	03	001423	131400	043337	CTSD	30	LAL	RO,TUSTAT,RA1	# PREPARE TO SAVE TU STATUS BITS
0016657	03	001425	016401	000003		31	LRM	RO,R1,M(TAPNO)	# RO WILL CONTAIN STD TAPE
0016661	03	001427	010422	-----		32	RRM	R1,W(TAPNO)	# R2 WILL CONTAIN THE COMPARED TAPE
0016662	03	001430	016441	000003		33	LRM	R2,R1,M(TAPNO)	
0016664	03	001432	042460	-----		34	LX	R3,RO(RA1)	# R3 AND R4 WILL CONTAIN THE STATUS
0016665	03	001433	042502	-----		35	LX	R4,R2(RA1)	# INFORMATION FOR THE TWO UNITS INVOLVED.
0016666	03	001434	010473	-----		36	RRM	R3,S(TSTATE)	# R3 CONTAIN STD. TAPE STATUS IN LOW BITS
0016667	03	001435	016064	144000		37	IRM	R3,R4,M(TSTATE)+M(REDON)+M(SEQERR)	# COMP TAPE IN HIGH BITS
0016671	03	001437	044063	-----		38	ST	R3,N(LENO)(RAD)	# SAVE FOR AFTER COMPARE
0016672	03	001440	040021	-----		39	L	R1,N(BKNO)(RAD)	# SET UP TRACK AND BLOCK NUMBER,
0016673	03	001441	046402	-----		40	STX	RO,R2(RA1)	# FORCE UNIT INTO SERVICE.

0016674

42 NOOVERRIDE

43 # RO AND R1 MUST BE SET UP TO TAPE AND BLOCK NUMBER FOR SEIZE

0016674	03	001442	137020	126205	CTAPH	-002-	44	SEIZE	TAPUCLNT	
0016676	03	001444	010030	-----		-001-	45	BSA	OPENTCB	
0016677	03	001445	155214	-----	0017113		46	VFD	5,TAPUCLNT 1,0 1,0 2,0 3,1 1,1	
0016700							47	BNC	ABORTTU_	# SYSTEM WILL NOT ALLOW TAPE ACCESS.
0016700	03	001446	137040	010054	0010054		48	ADRETN		
							49	A1S	TUUTCTL+N(SUBST)	

COMMON NONRESIDENT UTILITIES

PR-1C9 4-50

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0:32:20 2/06/81 ****

TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

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0016702
0016702 03 001450 056462 ----- -001- 01 RETURN 2
                                         02 BTSAN 2

0016703
06 IDLSTATE
07 # THIS SUB-STATE WILL WAIT FOR THE TAPE SYSTEM TO COMPLETE ITS PRESENT
08 # TASK. THE NEXT STATE WILL BE TRIGGERED UPON THE TASK COMPLETION.

0016703 03 001451 173047 ----- -002- 10 STATST TAPUCLNT
0016704 03 001452 012300 ----- -001- 11 BSAI RXEQR # SUBROUTINE REQR IS IN PROGRAM CTAPH
0016705 12 VFD 5,TAPUCLNT 4,STATST 1,1 1,0 5,0
0016705 13 ACPTCK
0016705 03 001453 156000 ----- 14 BPAX RO
0016706 03 001454 153772 ----- 0016700 15 B ADRETN
0016707 03 001455 153204 ----- 0017113 16 B ABORTTU_
0016710 17 RETURN 2
0016710 03 001456 156462 ----- -001- 18 BTSAN 2

0016711
22 POSCOMPR
23 # THIS SUBSTATE WILL POSITION THE COMPARED UNIT TO NEXT BLOCK.

0016711 03 001457 110422 ----- 25 RRN R1,W(TAPNO)
0016712 26 POSREQ
0016712 03 001460 103422 000003 27 NI R1,M(TAPNO) # PREPARE FOR INDEX
0016714 03 001462 002430 000003 28 STM R1,N(TAPNO)(RA1),M(TAPNO) # SWITCH TAPE NUMBER IN TCB.
0016716 03 001464 031000 043337 CTSD 29 LAL RO,TUSTAT,RAO
0016720 03 001466 042041 ----- 30 LX R2,R1(RAO) # GET PRESENT TAPE POSITION.
0016721 03 001467 031000 010052 0010052 31 LAL RO,TUUTCTL,RAO
0016723 32 BLKPOSRST
0016723 03 001471 140021 ----- 33 L R1,N(BKNO)(RAO) # GET BLOCK NUMBER TO BE COMPARED
0016724 03 001472 034420 043463 CTSD 34 STL R1,MSFPROG
0016726 03 001474 024055 ----- 35 TBN R2,S(POSOK)
0016727 03 001475 055006 ----- 0016735 36 BNC POSITI
0016730 03 001476 024055 ----- 37 TBN R2,S(POSOK) # IS POSITION VERIFIED?
0016731 03 001477 055004 ----- 0016735 38 BNC POSITI
0016732 03 001500 017022 003777 39 CRM R1,R2,M(LOGBLK) # IS POSITION REQUIRED?
0016734 03 001502 054744 ----- 0016700 40 BC ADRETN # NO
0016735 41 POSITI
0016735 03 001503 173047 ----- -002- 42 POSITION TAPUCLNT
0016736 03 001504 011100 ----- -001- 43 BSAI RXEQR # SUBROUTINE REQR IS IN PROGRAM CTAPH
0016737 03 001505 156000 ----- 44 VFD 5,TAPUCLNT 4,POSITION 1,1 1,0 5,0
0016740 03 001506 153740 ----- 0016700 45 BPAX RO
0016741 03 001507 153152 ----- 0017113 46 B ADRETN
0016742 47 B ABORTTU_
0016742 03 001510 173025 ----- -001- 48 CALL WAIT
                                         49 BSAI WXAIT # SUBROUTINE WAIT IS IN PROGRAM CBLM

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COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

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TAPE UTILITY MONITOR ROUTINES

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0016743 03 001511 153760 ----- 0016723      01      B      BLKPCRST

0016744                                         05 REDCOMR
06 # THIS SUBSTATE WILL SAVE CRC OF BLOCK JUST READ IN AND READ MATE UNIT.

0016744 03 001512 130400 046765 MASACS      08      LL      RO,I OBUF+BLKSIZE-1
0016746 03 001514 044004 -----              09      ST      RO,N(LNKS)(RAO) # SAVE CRC OF BLK JUST READ FOR COMPARE.
0016747                                         10 REDITI
0016747 03 001515 102430 000003              11      STM      R1,N(TAPNO)(RA1),M(TAPNO) # TAPE NUMBER TO BE USED IN READ.
0016751 03 001517 037000 015762 0015762      12      BL      RD1MON

0016753                                         16 SAVECRC
0016753 03 001521 110422 -----              17      RRN      R1,2 # READ FIRST UNIT. SAVE CRC AFTER READ .
0016754 03 001522 053773 ----- 0016747      18      B      REDITI

0016755                                         22 READOTHER
23 # THIS SUBSTATE WILL RECOVER THE COMPARED TAPE BLOCK'S CRC AND CHECK
24 # IT AGAINST THE STANDARD UNITS CRC.

0016755 03 001523 130400 046765 MASACS      26      LL      RO,I OBUF+BLKSIZE-1 # GET CRC.
0016757 03 001525 040044 -----              27      L      R2,N(LNKS)(RAO) # GET STD. CRC FOR COMPARISON.
0016760 03 001526 020002 -----              28      CR      RO,R2
0016761 03 001527 054030 ----- 0017011      29      BC      REDMORE # CRC'S ARE THE SAME - CONTINUE.
0016762 03 001530 040105 -----              30      L      R4,N(SGNO)(RAO)
0016763 03 001531 024105 ----- TTYTBL      31      TBN      R4,S(DETL) # IS A DETAILED REPORT REQUESTED?
0016764 03 001532 055013 ----- 0016777      32      BNC      CORRCHK
0016765 03 001533 040146 -----              33      L      R6,N(TPNO)(RAD) # PREPARE FOR MESSAGE.
0016766 03 001534 003561 000272 TTYTBL -001- 34      SPELL     R7,(B,L,K)
0016770 03 001536 040201 -----              35      LI      R7,BXK
0016771                                         36      L      R8,N(BKNO)(RAD) # BLOCK NUMBER
0016771                                         37      PRINT     PACTION=A,FMT=(WRD(A,U,D,I,T),WRD(T,A,P,E),BCD,WRD,L_X)

-001- 39 # MESSAGE PROTOTYPE
-001- 40 # A mm AUDIT TAPE nnnn WRD xxxx
-002- 41 BSAI PXMRY # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
0016771 03 001537 073053 -----              1,1 2,0 1,0 3,1 1,0 1,1 1,0 2,0 1,0 3,0
0016772 03 001540 101200 -----              4,TTYO_ 4,TTYO_L X 4,TTYO_WRD 4,TTYO_BCD
0016773 03 001541 023010 -----              4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_
0016774 03 001542 021042 -----              5,2 11,AXUDIT
0016775 03 001543 010007 ----- TTYTBL      5, 11, TXAPE
0016776 03 001544 000242 ----- TTYTBL      -001- 47 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
                                         CONTAINED IN GENERAL REGISTERS R6,R7,R8,

0016777                                         49 CORRCHK

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COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

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TAPE UTILITY MONITOR ROUTINES

CNRUTL W770

0016777	03	001545	124110	-----	TTTTBL	01	TBN	R4,S(CORR)	# IS AUTO-CORRECTION REQUIRED?
0017000	03	001546	055007	-----	0017007	02	BNC	ADCNT1	
0017001	03	001547	040026	-----		03	L	R1,N(TPNO)(RAD)	
0017002	03	001550	040041	-----		04	L	R2,N(BKNO)(RAD)	
0017003	03	001551	003442	-----	014000	05	NI	R2,M(TRACK)	# IS TRACK ZERO IN ERROR.
0017005	03	001553	054106	-----	0017113	06	BC	ABORTTU_	# CANNOT CORRECT TRACK ZERO. ABORT FATAL ERROR.
0017006	03	001554	053703	-----	0016711	08	B	POSCOMPR	# POSITION UNIT FOR CORRECTION.
0017007	03	001555	137040	010061	0010061	09	ADCNT1		
0017011	03	001557	140021	-----		10	A1S	TUUTCTL+N(ERCT)	# ADD TO ERROR COUNT.
0017012	03	001560	004421	-----		11	REDMORE		
0017013	03	001561	044021	-----		12	L	R1,N(BKNO)(RAD)	
0017014	03	001562	016461	003777		13	AN	R1,1	# PREPARE TO READ NEXT BLOCK.
0017016	03	001564	003465	000526	MASACS	14	ST	R1,N(BKNO)(RAD)	
0017020	03	001566	055013	-----	0017033	15	LRM	R3,R1,M(BLKADR)	
0017021	03	001567	003420	004000		16	CI	R3,BLKMAX-1	# HAS LOGICAL END OF TAPE BEEN REACHED.
0017023	03	001571	024035	-----		17	BNC	NXB	
0017024	03	001572	054036	-----	0017062	18	AI	R1,ES(TRCK)	
0017025	03	001573	003061	-----		19	TBN	R1,S(EOF)	# HAVE ALL TRACKS BEEN AUDITED
0017026	03	001574	016023	003777		20	BC	DONPO	
0017030	03	001576	002426	014000		21	LN	R3,1	# POSITION TO NEXT TRACK, BLK 1.
0017032	03	001600	044021	-----		22	IRM	R1,R3,M(BLKADR)	
0017033	03	001601	102425	017777		23	STM	R1,N(TRACK)(RA1),M(TRACK)	# SET UP TRACK BITS TO NEXT TRACK
0017035	03	001603	003000	-----		24	ST	R1,N(BKNO)(RAD)	
0017036	03	001604	044002	-----		25	NXB		
0017037	03	001605	040026	-----		26	STM	R1,N(LOGBLK)(RA1),M(LOGBLK)+M(VERTRK)	
0017040	03	001606	031400	043337	CTSD	27	ZR	RO	
0017042	03	001610	016461	000003		28	ST	RO,N(SUBST)(RAD)	
0017044	03	001612	042443	-----		29	L	R1,N(TPNO)(RAD)	
0017045	03	001613	040061	-----		30	LAL	RO,TUSTAT,RA1	
0017046	03	001614	031400	043317	CTSD	31	LRM	R3,R1,M(TAPNO)	
0017050	03	001616	017043	003777		32	LX	R2,R3(RA1)	# GET PTP OF MASTER TAPE
0017052	03	001620	055640	-----	0016712	33	L	R3,N(BKNO)(RAD)	
0017053	03	001621	003004	-----		34	LAL	RO,TCBADR,RA1	
0017054	03	001622	044002	-----		35	CRM	R2,R3,M(BLKADR)	# IS POSITION REQUIRED.
0017055	03	001623	037000	015262	0015262	36	BNC	POSREQ	
						37	LN	RO,4	
						38	ST	RO,N(SUBST)(RAD)	
						39	BL	NOCLR	# JUST CONTINUE
0017057						43	WRTITAB		
0017057	03	001625	173047	-----		44	WRTAB	TAPUCLNT	# WRITE BUFFER AS IS OUT ON CMPR.
0017060	03	001626	010740	-----		45	BSAI	RXEQR	# SUBROUTINE REQR IS IN PROGRAM CTAPH
0017061	03	001627	153624	-----	0016705	46	VFD	5,TAPUCLNT 4,WRTAB 1,1 1,1 5,0	
						47	B	ACEPTCK	

COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

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TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

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0017062
0017062 03 001630 131400 043337 CTSD          01 DONPO
0017064 03 001632 040026 -----            02 LAL RO,TUSTAT,RA1
0017065 03 001633 010422 -----            03 L R1,N(TPNO)(RAO)
0017066 03 001634 003422 000003            04 RRN R1,W(TAPNO)
0017070 03 001636 043561 -----            05 NI R1,M(TAPNO) # SET UP ACCESS TO COMPARED TU STATUS.
0017071 03 001637 040167 -----            06 LAX R7,R1(RA1)
0017072 03 001640 014167 -----            07 L R7,N(ERCT)(RAO)
0017073 03 001641 055010 ----- 0017103    08 TZ R7
0017074 03 001642 040023 -----            09 BNC PUTOOS # ERRORS EXIST INDICATE BY PRINTOUT
0017075 03 001643 026034 -----            10 L R1,N(LENO)(RAO)
0017076 03 001644 002420 054000            11 SBN R1,S(COMPROK) # SET COMPARE PASSED BIT
                                           12 STM R1,O(RA1),M(TSTATE)+M(COMPROK)+M(REDON) #SET STATUS BACK.
                                           13 TAPUTL OW 0(1646) #3E800224
-001- 14 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 001646 *****

0017100 03 001646 037000 121611 0000353 -001- 17 CPATCH7 BGNP 0(353) #3E800224
                                           18 BL XXX941
-001- 19 NOTE CPATCH7 'CSECT'
-001- 20 NOTE ***** PATCH AREA BEGINS AT 000353 *****

0121611
0121611 14 000353 103140 ----- -001- 23 XXX941 PATCHAREA
0121612 14 000354 044140 -----            24 ZR R6
                                           25 ST R6,N(UTCTL)(RAO) # ZERO OUT AUDIT CONTROL NUMBER
                                           26 SPELL R6,(M,A,T,C,H)
0121613 14 000355 003541 000153 TTYTBL -001- 27 LI R6,MATCH
0121615
0121615 14 000357 037000 017102 0001650 -001- 28 ENDP #3E800224
                                           29 BL XXX946
-001- 30 NOTE ***** LAST PATCH ADDRESS USED IS 000360 *****
-001- 31 NOTE ***** NUMBER OF PATCH WORDS USED IS 6 (DECIMAL) *****

0017102
0017102 03 001650 153003 ----- 0017105 -001- 34 XXX946 OWCONTINUE
0017103
                                           35 B OKINS
                                           36 EOW #3E800224
-001- 37 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 001650 *****
                                           *

0017103
                                           41 PUTOOS
                                           42 TAPUTL OW 0(1651) #3E800008
-001- 43 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 001651 *****

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COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MONITOR ROUTINES

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0017103 03 001651 137000 121326 0000070 -001- 01 CPATCH7 BGNP 0(70) #3E800008
-001- 02 BL XXX952
-001- 03 NOTE CPATCH7 'CSECT'
-001- 04 NOTE ***** PATCH AREA BEGINS AT 000070 *****

0121326 -001- 07 XXX952 PATCHAREA
08 SPELL R6,(R,E,P,T)
0121326 14 000070 103541 000033 TTYTBL -001- 09 LI R6,RXEPT
0121330 10 PRINT PACTION=**,FMT=(WRD(A,U,D,I,T),WRD(T,A,P,E),WRD,DEC)

-001- 12 # MESSAGE PROTOTYPE
-001- 13 # ** mm AUDIT TAPE WRD ddddd
0121330 14 000072 073053 ----- -002- 14 BSAI PXMRY # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
0121331 14 000073 104200 ----- -002- 15 VFD 1,1 2,0 1,0 3,4 1,0 1,1 1,0 2,0 1,0 3,0
0121332 14 000074 021100 ----- -002- 16 VFD 4,TTYO_ 4,TTYO_ 4,TTYO_DEC 4,TTYO_WRD
0121333 14 000075 021042 ----- -002- 17 VFD 4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_
0121334 14 000076 010007 ----- TTYTBL -002- 18 VFD 5,2 11,AXUDIT
0121335 14 000077 000242 137000 TTYTBL -002- 19 VFD 5, 11,TXAPE
-001- 20 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS R6,R7,
0121336 14 000100 137000 020215 0002763 -001- 22 NOTE *****THIS MESSAGE WILL RESULT IN A MAJOR ALARM*****
0121340 23 BL ABORTTU
24 ENDP NR #3E800008
-001- 25 NOTE ***** LAST PATCH ADDRESS USED IS 000101 *****
-001- 26 NOTE ***** NUMBER OF PATCH WORDS USED IS 10 (DECIMAL) *****

0017105 29 EOW #3E800008
-001- 30 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 001652 *****
*

0017105 34 OKINS
0017105 35 PRINT PACTION=A,FMT=(WRD(A,U,D,I,T),WRD(T,A,P,E),WRD,DEC)

-001- 37 # MESSAGE PROTOTYPE
-001- 38 # A mm AUDIT TAPE WRD ddddd
0017105 03 001653 173053 ----- -002- 39 BSAI PXMRY # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
0017106 03 001654 101200 ----- -002- 40 VFD 1,1 2,0 1,0 3,1 1,0 1,1 1,0 2,0 1,0 3,0
0017107 03 001655 021100 ----- -002- 41 VFD 4,TTYO_ 4,TTYO_ 4,TTYO_DEC 4,TTYO_WRD
0017110 03 001656 021042 ----- -002- 42 VFD 4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_
0017111 03 001657 010007 ----- TTYTBL -002- 43 VFD 5,2 11,AXUDIT
0017112 03 001660 000242 137000 TTYTBL -002- 44 VFD 5, 11,TXAPE
-001- 45 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS R6,R7,
0017113 47 ABORTTU
0017113 03 001661 137000 020215 0020215 48 BL ABORTTU

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COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

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TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

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0017115      01 LOMASHON
      02 # THIS IS THE TASK DISPENSER FOR THE OFF-LINE GENERIC AND XLATION RELOAD
      03 # PROGRAM.

0017115      05      BEGIN      ( )
0017115 03 001663 156001 -----      06      BPAX      R1
0017116 03 001664 153007 ----- 0017125      07      B      OPENLOK
0017117 03 001665 153564 ----- 0016703      08      B      IDLSTATE
0017120 03 001666 153173 ----- 0017313      09      B      RD1MON
0017121 03 001667 153562 ----- 0016703      10      B      IDLSTATE
0017122 03 001670 153041 ----- 0017163      11      B      DISECT
0017123 03 001671 153054 ----- 0017177      12      B      MOVEOVER
0017124 03 001672 153125 ----- 0017251      13      B      FINECH

0017125      17 OPENLOK
      18 # THIS STATE WILL BE USED TO OPEN THE APPROPRIATE FILE IN PREPARATION
      19 # TO READ IT INTO THE OFF-LINE.
0017125      20      CALL      STOPPSAU      # STOP MAS AUDIT
0017125 03 001673 137020 003674 CBLM -001- 21      BSA      STOPPSAU
0017127      22      CALL      INITOST      # TEAR DOWN WRITE-PROTECT
0017127 03 001675 137020 110443 CSYSUB -001- 23      BSA      INITOST
0017131 03 001677 151003 -----      24      TBS      N(LENO)(RAD),0      # WAS 'GENERIC' REQUESTED ?
0017132      25      IF      CF = 1 THEN RGBEGIN
0017132 03 001700 055014 ----- 0017146 -001- 26      BNC      IFS988
0017133 03 001701 040006 -----      27      L      R0,N(TPNO)(RAD) # TAPE NO.
0017134 03 001702 003020 -----      28      ZR      R1
      29      OPENE      TAPUCLNT,(G,E,N,E,R,I,C)
0017135 03 001703 037020 126205 CTAPH -002- 30      BSA      OPENTCB
0017137 03 001705 011123 ----- -001- 31      VFD      5,TAPUCLNT 1,0 1,1 2,0 3,((7+1)/2)+1 1,0 3,((7+1)/2)-1
0017140 03 001706 043705 ----- -001- 32      VFD      8,ASC_G 8,ASC_E
0017141 03 001707 047305 ----- -001- 33      VFD      8,ASC_N 8,ASC_E
0017142 03 001710 151311 ----- -001- 34      VFD      8,ASC_R 8,ASC_I
0017143 03 001711 141400 ----- -001- 35      VFD      8,ASC_C 8,ASC_
      36 # OPEN FAILURE DETECTED BY 'IDLSTATE'
0017144 03 001712 162003 -----      37      ZBS      N(LENO)(RAD),0 # TURN OFF REQUEST FLAG
0017145 03 001713 053150 ----- 0017315      38      B      ADVSUBST_
0017146      39      RGEND
0017146 -001- 40 IFS988
0017146 03 001714 151023 -----      41      TBS      N(LENO)(RAD),1      # WAS 'TRNSLN' REQUESTED ?
      42 TAPUTL OW      0(1715)      # 13591
-001- 43      NOTE      ***** THE FIRST ADDRESS OVERWRITTEN IS 001715 *****

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COMMON NONRESIDENT UTILITIES

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0017147 03 001715 037000 120763 0001767 -001- 01 TFAPCH2 BGNP 0(1767) # 13591
-001- 02 BL XXX994
-001- 03 NOTE TFAPCH2 'CSECT'
-001- 04 NOTE ***** PATCH AREA BEGINS AT 001767 *****

0120753 -001- 07 XXX994 PATCHAREA
0120763 15 001767 150400 120772 0120772 08 BNCL IFS712
0120765 15 001771 040006 ----- 09 L RO,N(TPNO)(RAD)
0120766 10 ENDP # 13591
0120766 15 001772 037000 017151 0001717 -001- 11 BL XXX996
-001- 12 NOTE ***** LAST PATCH ADDRESS USED IS 001773 *****
-001- 13 NOTE ***** NUMBER OF PATCH WORDS USED IS 5 (DECIMAL) *****

0017151 -001- 16 XXX996 OMCONTINUE
0017151 03 001717 103020 ----- 17 ZR R1
0017152 18 EOW # 13591
-001- 19 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 001717 *****
*

0017152 03 001720 037020 126205 CTAPH 23 OPENE TAPUCLNT,(T,R,N,S,L,N)
-002- 24 BSA OPENTCB
0017154 03 001722 011102 ----- -001- 25 VFD 5,TAPUCLNT 1,0 1,1 2,0 3,((6+1)/2)+1 1,0 3,((6+1)/2)-1
0017155 03 001723 152322 ----- -001- 26 VFD 8,ASC_T 8,ASC_R
0017156 03 001724 047123 ----- -001- 27 VFD 8,ASC_N 8,ASC_S
0017157 03 001725 146116 ----- -001- 28 VFD 8,ASC_L 8,ASC_N
29 # OPEN FAILURE DETECTED BY 'IDLSTATE'
0017160 03 001726 162023 ----- 30 ZBS N(LENO)(RAD),1 # TURN OFF REQUEST FLAG
31 TAPUTL OW 0(1727) # 13591
-001- 32 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 001727 *****

0017161 03 001727 037000 120770 0001774 -001- 35 TFAPCH2 BGNP 0(1774) # 13591
-001- 36 BL XXX1004
-001- 37 NOTE TFAPCH2 'CSECT'
-001- 38 NOTE ***** PATCH AREA BEGINS AT 001774 *****

0120770 -001- 41 XXX1004 PATCHAREA
0120770 15 001774 137000 017315 0002063 42 BL ADVSUBST_
0120772 43 IFS712
0120772 15 001776 151063 ----- 44 TBS N(LENO)(RAD),3
0120773 15 001777 050400 017275 0002043 45 BNCL LOMASCOMPL
0120775 46 OPN_PACH
0120775 15 002001 103020 ----- 47 ZR R1
0120776 15 002002 040006 ----- 48 L RO,N(TPNO)(RAD) # TAPE UNIT NO. FOR EXPLICIT OPEN
49 OPENE TAPUCLNT,(P,A,T,C,H)

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COMMON NONRESIDENT UTILITIES

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CNRUTL W77D

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0120777 15 002003 037020 126205 CTAPH -002- 01 BSA OPENTCB
0121001 15 002005 011102 ----- -001- 02 VFD 5,TAPUCLNT 1,0 1,1 2,0 3,((5+1)/2)+1 1,0 3,((5+1)/2)-1
0121002 15 002006 050101 ----- -001- 03 VFD 8,ASC_P 8,ASC_A
0121003 15 002007 152303 ----- -001- 04 VFD 8,ASC_T 8,ASC_C
0121004 15 002010 044000 ----- -001- 05 VFD 8,ASC_H 8,ASC_
0121005 15 002011 155106 ----- 0121113 06 BNC ABORTTU1
0121006 15 002012 062063 ----- 07 ZBS N(LENO)(RAO),3
0121007 15 002013 061103 ----- 08 SBS N(LENO)(RAO),4
0121010 15 002014 037040 010054 0000027 09 A1S TUUTCTL+N(SUBST)
0121012 10 RETURN 2
0121012 15 002016 056462 ----- -001- 11 BTSAN 2
0121013 12 LOD_CON
13 # CONTINUE WITH OW (OW CROSSED BLK BOUNDARY).
0121013 15 002017 103067 ----- 14 LN R3,7 # SETUP FOR TEST
0121014 15 002020 003260 ----- 15 ZR IOBNDX
0121015 15 002021 031000 045267 CTAPH 16 LAL RO,I_OBUF+I_OBUFD,RAO
0121017 15 002023 053033 ----- 0121052 17 B RDNXTBLK_
0121020 18 OWF_END
0121020 15 002024 103060 ----- 19 # ***** END OF FILE CHECK *****
0121021 15 002025 053004 ----- 0121025 20 ZR R3 # SETUP FOR TEST
21 B IS_EOWF
22 # ENTRY POINT FOR FIRST OW.
0121022 23 1ST_OW
0121022 15 002026 103060 ----- 24 ZR R3 # SETUP FOR TEST
0121023 15 002027 003661 000014 25 LI IOBNDX,12
0121025 26 IS_EOWF
0121025 15 002031 131000 045267 CTAPH 27 LAL RO,I_OBUF+I_OBUFD,RAO
0121027 15 002033 042253 ----- 28 LX OW_LEN,IOBNDX(RAO)
0121030 15 002034 006172 ----- 29 LR R7,OW_LEN
0121031 15 002035 004172 ----- 30 SN R7,6
0121032 15 002036 006233 ----- 31 LR R9,IOBNDX
0121033 15 002037 004625 ----- 32 AN R9,5
0121034 15 002040 042011 ----- 33 LX RO,R9(RAO)
0121035 15 002041 024000 ----- 34 TBN RO,0
0121036 15 002042 030176 ----- 35 ICF R7,14
0121037 15 002043 024001 ----- 36 TBN RO,1
0121040 15 002044 030177 ----- 37 ICF R7,15
0121041 15 002045 034560 010055 0000030 38 STL R7,TUUTCTL+N(LENO)
39 # IF OW_LEN=EOWF BRANCH TO LD_COMP, IF NOT PROCESS NEXT PATCH
0121043 15 002047 003645 177777 40 CI OW_LEN,EOWF
41 TFAPCH2 OW 0(2051) #3E800077
-001- 42 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002051 *****

0121045 15 002051 037000 121513 0121513 -001- 45 CPATCH7 BGNP 0(255) #3E800077
-001- 46 BL XXX1011
-001- 47 NOTE CPATCH7 'CSECT'
-001- 48 NOTE ***** PATCH AREA BEGINS AT 000255 *****

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COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

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0121513
0121513 14 000255 155005 ----- 0121520 -001- 01 XXX1011 PATCHAREA
0121514 14 000256 031000 010052 0000025 02 BNC DO MORE
0121516 14 000260 037000 017275 0002043 03 LAL RO,TUUTCTL,RAO # POINT TO CONTROL BLOCK (RAO)
0121520 04 BL LOMASCOMPL
0121520 05 DO_MORE
0121520 06 ENDP #3E800077
0121520 14 000262 137000 121047 0121047 -001- 07 BL XXX1013
-001- 08 NOTE ***** LAST PATCH ADDRESS USED IS 000263 *****
-001- 09 NOTE ***** NUMBER OF PATCH WORDS USED IS 7 (DECIMAL) *****

0121047 -001- 12 XXX1013 OMCONTINUE
0121047 13 EOW #3E800077
-001- 14 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002052 *****
*

0121047 15 002053 103140 ----- 18 ZR OWBNDX
0121050 15 002054 031000 045275 CTAPH 19 LAL RO,I_OBUF+I_OBUFD+6,RAO
0121052 20 RDNXTBLK_
0121052 15 002056 143013 ----- 21 LAX RO,IOBNDX(RAO)
0121053 15 002057 031400 010056 0000031 22 LAL RO,BUFPATCH,RA1
0121055 15 002061 043406 ----- 23 LAX RO,OWBNDX(RA1)
0121056 24
0121056 15 002062 003421 001474 MASACS 25 # R1 = OBUFLEN - IOBNDX
0121060 15 002064 005033 ----- 26 LI R1, OBUFLEN
0121061 27 SR R1, IOBNDX
28
0121061 15 002065 006001 ----- 29 # IF OW_LEN IS LESS THAN R1... LOD OW_LEN INTO R1
0121062 15 002066 005012 ----- 30 LR RO,R1
0121063 15 002067 055002 ----- 31 SR RO,OW_LEN
0121064 15 002070 006032 ----- 32 BNC LARGER
0121065 33 LR R1,OW_LEN
0121065 34 LARGER
0121065 35
0121065 15 002071 106001 ----- 36 # RO=R1...OW_LEN=OW_LEN-RO...IOBNDX=IOBNDX+RO
0121066 15 002072 005240 ----- 37 LR RO,R1
0121067 15 002073 001660 ----- 38 SR OW_LEN,RO
0121070 15 002074 014063 ----- 39 AR IOBNDX,RO
0121071 15 002075 055002 ----- 40 TZ R3 # FIRST DATA TO BE MOVED?
0121072 15 002076 004012 ----- 41 BNC MOV_ST
0121073 42 SN RO,6 # DONT DO FIRST 6 WRDS
0121073 43 MOV_ST
0121073 15 002077 106140 ----- 44 LR OWBNDX,RO
45 # MOVE OW DATA FROM THE I/OBUFFER TO THE PATCH BUFFER.
46 # XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
47 DINSERT NOTE ' CALL MOVST
48 DDELETE NOTE 2
49 BSA MOVST

W0121074 15 002100 037020 110772 CSYSUB

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COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION.

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TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

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0121076 15 002102 114252 -----
0121077 15 002103 054033 ----- 0121132
0121100
0121100
0121104 15 002104 173047 -----
0121101 15 002105 010400 015771 0000537
0121103
0121103 15 002107 106000 -----
0121104

0121104 15 002110 056000 -----
0121105 15 002111 153010 ----- 0121115
0121106 15 002112 153005 ----- 0121113

W0121107 15 002113 137020 002422 CBLM
0121111 15 002115 122002 -----
0121112 15 002116 053766 ----- 0121100
0121113
0121113 15 002117 137000 020215 0002763.
0121115

W0121115 15 002121 137020 126350 CTAPH
0121117 15 002123 012300 -----
0121120 15 002124 156000 -----
0121121 15 002125 153006 ----- 0121127
0121122 15 002126 153771 ----- 0121113

W0121123 15 002127 137020 002422 CBLM
0121125 15 002131 122002 -----
0121126 15 002132 053767 ----- 0121115
0121127
0121127 15 002133 114252 -----
0121130 15 002134 054017 ----- 0121147
0121131 15 002135 053662 ----- 0121013
0121132

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```

01 # XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX
02 # IF OW_LEN = 0...BRANCH TO NXT_OWNO
03      TZ      OW_LEN
04      BC      NXT_OWNO
05
06 A_READ
07 TFAPCH2 OW      0(2104)          #3E790479
-001- 08      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002104 *****

11      RD1BLK  TAPUCLNT,STALST
-002- 12      BSAI  RZEQR          # SUBROUTINE REQR IS IN PROGRAM CTAPH
-001- 13      ADDR  STALST,TAPUCLNT*(7)+RD1BLK*(E(3))
14      TAKEOUT  1
-001- 15      LR    0,0
16      EOW
-001- 17      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002107 *****
*

21      BPAX    RO
22      B      A_WAIT
23      B      ABORTTU1
24 DINSERT NOTE ' CALL WAIT
25 DDELETE NOTE 2
26      BSA    WAIT
27      ZBN   RO,2
28      B      A_READ
29 ABORTTU1
30      BL     ABORTTU
31 A_WAIT
32 DINSERT NOTE ' STATST TAPUCLNT
33 DELETE NOTE 3
34      BSA    REQR
35      DATA  0(12300)
36      BPAX   RO
37      B      CHOOSE
38      B      ABORTTU1
39 DINSERT NOTE ' CALL WAIT
40 DDELETE NOTE 2
41      BSA    WAIT
42      ZBN   RO,2
43      B      A_WAIT
44 CHOOSE
45      TZ     OW_LEN
46      BC     LD_OMAS
47      B      LOD_CON
48
49 # IF IOBNDX IS GREATER THAN OBUFLN...BRANCH TO NEWBLK

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COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

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TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

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0121132'
0121132 15 002136 106013 -----
0121133 15 002137 003400 176304 MASACS
0121135 15 002141 054006 ----- 0121143
0121136 15 002142 031000 045267 CTAPH
0121140 15 002144 042033 -----
0121141

0121141 15 002145 014021 -----
0121142 15 002146 055003 ----- 0121145
0121143
0121143
0121143 15 002147 103260 -----
0121144 15 002150 053734 ----- 0121100
0121145

W0121145 15 002151 137020 002422 CBLM
0121147
0121147

0121147 15 002153 103140 -----
0121150 15 002154 031400 010056 0000031
0121152 15 002156 031100 010055 0000030
0121154 15 002160 024117 -----
0121155 15 002161 054056 ----- 0121233
0121156 15 002162 024116 -----
0121157 15 002163 055054 ----- 0121233
0121160 15 002164 003502 037777
0121162 15 002166 053015 ----- 0121177
0121163

0121163 15 002167 131400 010056 0000031
0121165 15 002171 031100 010055 0000030
0121167 15 002173 003502 037777
0121171 15 002175 042526 -----
0121172 15 002176 006005 -----
0121173 15 002177 010417 -----
0121174 15 002200 001405 -----
0121175 15 002201 004403 -----
0121176 15 002202 001540 -----
0121177

0121177 15 002203 143526 -----
0121200 15 002204 004137 -----
0121201

0121201 15 002205 006006 -----

01 NXT_OWNO
02 LR RO,I0BNDX
03 SI RO,0BUFLN
04 BC NEWBLK
05 LAL RO,I_0BUF+I_0BUFD,RA0
06 LX R1,I0BNDX(RA0)
07
08 # IF R1=0 THEN DO NEWBLK
09 TZ R1
10 BNC NXT_OW
11
12 NEWBLK
13 ZR I0BNDX
14 B A_READ
15 NXT_OW
16 DINSERT NOTE ' CALL WAIT
17 DDELETE NOTE 2
18 BSA WAIT
19
20 LD_OMAS
21 # START OF ROUTINE TO MOVE DATA FROM THE PATCH BUFFER
22 # TO THE OMAS LOCATION TO BE OVERRITTEN.
23 ZR 0WBNDX
24 LAL RO,BUFPATCH,RA1
25 LAL R4,TUUTCTL+N(LENO),RA0
26 TBN R4,15 # RMV BIT
27 BC WRCOMP
28 TBN R4,14 # ACT BIT
29 BNC WRCOMP
30 NI R4,0(37777)
31 B FST_PASS
32 NXTORGBLK
33 # PROCESS THE NEXT ORG BLK IN TURN.
34 LAL RO,BUFPATCH,RA1
35 LAL R4,TUUTCTL+N(LENO),RA0
36 NI R4,0(37777)
37 LX LENOB,0WBNDX(RA1)
38 LR RO,LENOB
39 RLN RO,1
40 AR RO,LENOB
41 AN RO,3
42 AR 0WBNDX,RO
43 FST_PASS
44 # BEGIN PROCESS OF THE 1ST ORG BLK OF THE OWRITE.
45 LAX LENOB,0WBNDX(RA1)
46 SN LENOB,1 # BX NO. OF LOOPS MINUS 1
47
48 # IF 0WBPTR IS GREATER THAN R4...BRANCH TO WRCOMP
49 LR RO,0WBNDX

```

COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

0121202	15	002206	005004	-----		01	SR	RD,R4	
0121203	15	002207	054030	-----	0121233	02	BC	WRC	
0121204						03			
						04	#	IF NON-RES TRY NXTORGBLK	
0121204	15	002210	040701	-----		05	L	RA0,N(OBLKADR)(RA1)	
0121205	15	002211	040722	-----		06	L	RA0+1,N(OBLKADR)+1(RA1)	
0121206	15	002212	040401	-----		07	L	RD,N(OBLKSEG)(RA1)	
0121207	15	002213	003402	177760		08	NI	RD,M(OBLKSEG)	
0121211	15	002215	055752	-----	0121163	09	BNC	NXTORGBLK	
0121212						10	LD_OS_LP		
						11	#	LOAD OMAS LOOP	
0121212	15	002216	171420	-----		12	HA		
0121213	15	002217	007316	-----		13	EXR	RA0,RA1	
0121214	15	002220	007337	-----		14	EXR	RA0+1,RA1+1	
0121215	15	002221	040004	-----		15	L	RD,N(NEWDH)(RA0)	
0121216	15	002222	040023	-----		16	L	R1,N(NEWDL)(RA0)	
0121217						17	CALL	WOPS	# WRITE DATA TO OMAS
0121217	15	002223	037021	014361	MASACS	-001-	18	BSA	WOPS
0121221						19	CALL	STOPPSAU	# STOP MAS AUDIT SO CHANGES WONT BE CORRECTED
0121221	15	002225	137020	003674	CBLM	-001-	21	BSA	STOPPSAU
0121223	15	002227	171400	-----		22	GA		
0121224	15	002230	041001	-----		23	LA	RD,1(RA0)	
0121225	15	002231	041403	-----		24	LA	RD,3(RA1)	
0121226	15	002232	036120	121212	0121212	25	BX	LENOB,LD_OS_LP	
						26	DINSERT NOTE	' CALL WAIT	
						27	DDELETE NOTE	2	
W0121230	15	002234	037020	002422	CBLM		28	BSA	WAIT
0121232	15	002236	153731	-----	0121163	29	B	NXTORGBLK	
0121233						30	WRCOMP		
						31	DINSERT NOTE	' CALL WAIT	
						32	DDELETE NOTE	2	
W0121233	15	002237	137020	002422	CBLM		33	BSA	WAIT
0121235	15	002241	153563	-----	0121020	34	B	OWF_END	
0121235						35			
0121235						36			
0121235						37	ENDP	NR	# 13591
						-001-	38	NOTE	***** LAST PATCH ADDRESS USED IS 002241 *****
						-001-	39	NOTE	***** NUMBER OF PATCH WORDS USED IS 166 (DECIMAL) *****
0017163						42	EOW		# 13591
						-001-	43	NOTE	***** THE LAST ADDRESS OVERWRITTEN IS 001730 *****

COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

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TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

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04 TAPUTL OW 0(1731) # 13591
-001- 05 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 001731 *****

0017163
08 DISECT
0017163 03 001731 137000 120754 0001760 -001- 09 TFAPCH2 BGNP 0(1760) # 13591
-001- 10 BL XXX1032
-001- 11 NOTE TFAPCH2 'CSECT'
-001- 12 NOTE ***** PATCH AREA BEGINS AT 001760 *****

0120754
-001- 15 XXX1032 PATCHAREA
16 DDELETE NOTE 1
17 # A BLOCK HAS BEEN BROUGHT INTO THE I/O BUFFER AND MAY REQUIRE UNPACKING
18 # DEPENDING UPON THE APPLICATION STORE WIDTH. A SPECIAL APPLICATION ROUTINE
19 # IS USED TO UNPACK THE BLOCK RIGHT IN THE I/O BUFFER IN PREPARATION FOR
20 # STORAGE IN THE OFF-LINE MACHINE.
0120754 15 001760 151103 ----- 21 TBS N(LENO)(RAD),4 # PATCH FILE ?
0120755 15 001761 050000 121022 0121022 22 BCL 1ST OW
0120757 15 001763 031400 045271 LAYOUT 23 LAL RO,I_OBUF+3,RA1
0120761 15 001765 037000 017165 0001733 -001- 24 ENDP # 13591
-001- 25 BL XXX1034
-001- 26 NOTE ***** LAST PATCH ADDRESS USED IS 001766 *****
-001- 27 NOTE ***** NUMBER OF PATCH WORDS USED IS 7 (DECIMAL) *****

0017165
-001- 30 XXX1034 OWCONTINUE
0017165 03 001733 131000 045271 LAYOUT 31 LAL RO,I_OBUF+3,RAO
0017167 32 EOW # 13591
-001- 33 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 001734 *****
*

0017167 03 001735 030400 045267 LAYOUT 37 LL RO,I_OBUF+1
0017171 03 001737 003402 177760 38 NI RO,-MSK(4)
0017173 03 001741 010404 ----- 39 RRN RO,4 # PREPARE LOGICAL LENGTH FOR UNPACK ROUTINE.
0017174 40 CALL UNPKWRDS
0017174 03 001742 037021 014333 MASACS -001- 41 BSA UNPKWRDS
0017176 03 001744 153502 ----- 0016700 42 B ADRETN

```

COMMON NONRESIDENT UTILITIES:

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TAPE UTILITY MULTISCAN FUNCTION

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TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

```

0017177 '
01 MOVEOVER
02 # THE BLOCK HAS BEEN UNPACKED. NEXT THE DATA MUST BE MOVED TO THE OTHER
03 # PROCESSOR. A MAXIMUM OF 297 WORDS WILL BE MOVED AT ONE TIME. RE-ENTRY
04 # TO THIS ROUTINE IS REQUIRED UNTIL ALL OF THE DATA IS MOVED.
0017177 03 001745 131400 045267 LAYOUT 05 LAL RO,I OBUF+1,RA1
0017201 03 001747 003441 000451 06 LI R2,297 # PREPARE FOR MOVE AND CALCULATION OF
REMAINING WORDS.
0017203 03 001751 003402 177760 08 NI RO,-MSK(4)
0017205 03 001753 010404 ----- 09 RRRN RO,4
0017206 03 001754 006060 ----- 10 LR R3,RO
0017207 03 001755 005002 ----- 11 SR RO,R2 # CHECK IF MORE THAN 297 WORDS LEFT.
0017210 03 001756 054003 ----- 0017213 12 BC MOR297
0017211 03 001757 006043 ----- 13 LR R2,R3
0017212 03 001760 003000 ----- 14 ZR RO
0017213 15 MOR297
0017213 03 001761 106060 ----- 16 LR R3,RO
0017214 03 001762 040700 ----- 17 L RAO,0(RA1) # SET UP RAD FOR MOVE
0017215 03 001763 040721 ----- 18 L RAO+1,1(RA1)
0017216 03 001764 041401 ----- 19 LA RO,1(RA1) # SET UP SOURCE ADDRESS FOR MOVE.

21 # RA1 CONTAINS SOURCE OF MOVE AND RAO CONTAINS DESTINATION
0017217 22 SNL RAO,1
0017217 03 001765 004337 ----- -001- 23 SN RAO+1,1
0017220 03 001766 054002 ----- 0017222 -001- 24 BC IFS1039
0017221 03 001767 004317 ----- -001- 25 SN RAO,1
0017222 03 001770 153011 ----- 0017233 26 B SUB1
0017223 27 DOTHM
0017223 28 SBIN # PREVENT INTERRUPT INTERFERENCE WITH SDR1
(IF USED)
0017223 03 001771 113002 ----- -001- 30 MIS 2
0017224 03 001772 105722 ----- -001- 31 DATA 35794
0017225 03 001773 041401 ----- 32 LA RO,1(RA1)
0017226 33 STOS 1(RAO) # DO OFF-LINE STORE
E0017226 03 001774 000401 ----- -001- 34 MSTF 1(RAO)
0017227 03 001775 136100 037000 -001- 35 DATA B(1011110001000000)
36 TAPUTL OW 0(1776) # 12447
-001- 37 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 001776 *****

0017230 03 001776 037000 020323 0020323 -001- 40 TAPUTL BGNP 0(3071) # 12447
-001- 41 BL XXX1044
-001- 42 NOTE TAPUTL 'CSECT'
-001- 43 NOTE ***** PATCH AREA BEGINS AT 003071 *****

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COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

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TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

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0020323          -001- 01 XXX1044 PATCHAREA
0020323          02          ZBIN
0020323 03 003071 113002 ----- -001- 03          MIS          2
0020324 03 003072 107322 ----- -001- 04          DATA      36562
0020325 03 003073 004721 -----          05          AN          R13,1          # INCREMENT ADDRESS
0020326 03 003074 055002 ----- 0020330 06          BNC          SUB1 TC
0020327 03 003075 004701 -----          07          AN          R12,1
0020330          08 SUB1_TC
0020330          09          ENDP          # 12447
0020330 03 003076 137000 017232 0017232 -001- 10          BL          XXX1047
-001- 11          NOTE ***** LAST PATCH ADDRESS USED IS 003077 *****
-001- 12          NOTE ***** NUMBER OF PATCH WORDS USED IS 7 (DECIMAL) *****

0017232          -001- 15 XXX1047 ONCONTINUE
0017232          16          TAKEOUT 1
0017232 03 002000 106000 ----- -001- 17          LR          0,0
0017233          18          EOW          # 12447
-001- 19          NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002000 *****
*

0017233          23 SUB1
0017233 03 002001 136040 017223 0017223 24          BX          R2,DOthem
0017235          25          CALL          WAIT          # TAKE REAL TIME BREAK SINCE MOVE IS TIME
          # CONSUMING
          # SUBROUTINE WAIT IS IN PROGRAM CBLM
0017235 03 002003 073025 ----- -001- 27          BSAI          WXAIt
0017236 03 002004 114063 -----          28          TZ          R3
0017237 03 002005 054441 ----- 0016700 29          BC          ADRETN          # NEXT SUBSTATE
0017240 03 002006 003441 000451          30          LI          R2,297
0017242 03 002010 006003 -----          31          LR          R0,R3
0017243 03 002011 005002 -----          32          SR          R0,R2
0017244 03 002012 054003 ----- 0017247 33          BC          MORAGN
0017245 03 002013 006043 -----          34          LR          R2,R3
0017246 03 002014 003000 -----          35          ZR          R0
0017247          36 MORAGN
0017247 03 002015 106060 -----          37          LR          R3,R0
0017250 03 002016 053763 ----- 0017233 38          B          SUB1

0017251          42 FINECH
0017251 03 002017 130400 045266 LAYOUT 43 # CHECK IF THIS FILE IS DONE. MUST CHECK THE BLOCK ADDRESS AGAINST
0017253 03 002021 030420 043326 CTSD 44 # THE DIRECTORY INFORMATION STORED IN THE TCB.
0017255 03 002023 017001 017777          45          LL          R0,I_OBUF
0017257 03 002025 054004 ----- 0017263 46          LL          R1,TCBADR+N(LASTBLK)
0017260 03 002026 003001 -----          47          CRM          R0,R1,M(BLKADR)+M(TRCK) # HAS EOF BEEN REACHED
          48          BC          NEXTFILE          # YES
          49          LN          R0,1

```

COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

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0017261 '03 002027 044002 -----          01      ST      RD,N(SUBST)<RAD>  # SET UP TO READ NEXT BLOCK
0017262                                     02      RETURN  2
0017262 03 002030 056462 -----          -001- 03      BTSAN   2

0017263                                     07 NEXTFILE
0017263 03 002031 173047 -----          -002- 09      CLOSE  TAPUCLNT
0017264 03 002032 011300 -----          -001- 10      BSAI   RXEQR          # SUBROUTINE REQR IS IN PROGRAM CTAPH
0017265 03 002033 156000 -----          11      VFD    5,TAPUCLNT 4,CLOSE 1,1 1,0 5,0
0017266 03 002034 153004 -----          12      BPAX   RO
0017267 03 002035 153624 -----          13      B      CCONT
0017270                                     14      B      ABORTTU_      # ABORT CODE
0017270 03 002036 173025 -----          -001- 15      CALL  WAIT
0017271 03 002037 153772 -----          16      BSAI   WXAIT          # SUBROUTINE WAIT IS IN PROGRAM CBLM
0017272                                     17      B      NEXTFILE
0017272                                     18      CCONT
0017272 03 002040 137000 121455 0000217 -001- 19      TAPUTL OW  0(2040)          #3E790260
0017272                                     -001- 19      NOTE  ***** THE FIRST ADDRESS OVERWRITTEN IS 002040 *****

0017272 03 002040 137000 121455 0000217 -001- 22      CPATCH7 BGNP 0(217)          #3E790260
0017272                                     -001- 23      BL     XXX1059
0017272                                     -001- 24      NOTE  CPATCH7 'CSECT'
0017272                                     -001- 25      NOTE  ***** PATCH AREA BEGINS AT 000217 *****

0121455                                     -001- 28      XXX1059 PATCHAREA
0121455 14 000217 103000 -----          29      ZR     RO
0121456 14 000220 044002 -----          30      ST     RD,N(SUBST)<RAD>  # START OVER FOR THE NEW FILE
0121457                                     31      CALL  TEMPINH_
0121457 14 000221 037020 147320 BLMMA -001- 32      BSA   TEMPINH_
0121461                                     33      ENDP   #3E790260
0121461 14 000223 137000 017274 0002042 -001- 34      BL     XXX1062
0121461                                     -001- 35      NOTE  ***** LAST PATCH ADDRESS USED IS 000224 *****
0121461                                     -001- 36      NOTE  ***** NUMBER OF PATCH WORDS USED IS 6 (DECIMAL) *****

0017274                                     -001- 39      XXX1062 OWCONTINUE
0017274                                     40      EOW   #3E790260
0017274                                     -001- 41      NOTE  ***** THE LAST ADDRESS OVERWRITTEN IS 002041 *****
0017274                                     *

0017274                                     45      RETURN 2
0017274 03 002042 156462 -----          -001- 46      BTSAN  2
    
```

COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

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TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

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0017275          01 LOMASCOMPL
0017275 03 002043 103000 ----- 02      IR      RO
0017276 03 002044 044000 ----- 03      ST      RO,N(UTCTL)(RAD) # FOR ABORTTU BRANCH
0017277          04      PRINT  PACTION=A,FMT=(WRD(L,O,D),WRD(O,M,A,S),WRD(C,O,M,P,L))

-001- 06 # MESSAGE PROTOTYPE
-001- 07 # A mn LOD OMAS COMPL
0017277 03 002045 073053 ----- -002- 08 BSAI PXMRY # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
0017300 03 002046 101200 ----- -002- 09 VFD 1,1 2,0 1,0 3,1 1,0 1,1 1,0 2,0 1,0 3,0
0017301 03 002047 021040 ----- -002- 10 VFD 4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_WRD
0017302 03 002050 021042 ----- -002- 11 VFD 4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_
0017303 03 002051 014024 ----- TTYTBL -002- 12 VFD 5,3 11,LXOD
0017304 03 002052 000177 ----- TTYTBL -002- 13 VFD 5, 11,OXMAS
0017305 03 002053 000302 ----- TTYTBL -002- 14 VFD 5, 11,CXOMPL
-001- 15 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS
0017306 03 002054 151043 ----- 17 TBS N(LENO)(RAD),2 # WAS TRNSLN LOADED?
0017307          18 IF CF THEN CALL SETRCBAP
0017307 03 002055 055003 ----- 0017312 -002- 19 BNC IFS1081
0017310 03 002056 037021 016233 MASACS -003- 20 BSA SETRCBAP
0017312          -002- 21 IFS1081
0017312 03 002060 153601 ----- 0017113 22 B ABORTTU_

0017313          24 RD1MON_
0017313 03 002061 137000 015762 0015762 25 _BL RD1MON
0017315          26 ADVSUBST
0017315 03 002063 137000 020077 0020077 27 BL ADVSUBST

```

COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

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TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

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0017317 .                                01 COPYMON
                                           02 # THIS IS THE TASK DISPENSER FOR THE TAPE TO TAPE TRACK COPY ROUTINE

0017317 03 002065 131400 043317 CTSD      04      LAL      RO,TCBADR,RA1
0017321 03 002067 056001 -----          05      BPAX     R1
0017322 03 002070 153013 -----          06      B        COPYSZ
0017323 03 002071 153131 -----          07      B        IDLSTATE__
                                           08 TAPUTL OW      0(2072)          # 12437
-001- 09      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002072 *****

0017324 03 002072 153054 -----          12      B        READSTD
0017325 03 002073 153127 -----          13      B        IDLSTATE__
0017326 03 002074 153015 -----          14      B        CLOTPU
0017327 03 002075 153021 -----          15      B        POSCOPY
0017330 03 002076 153124 -----          16      B        IDLSTATE__
0017331 03 002077 153054 -----          17      B        WRITCOPY
0017332 03 002100 153122 -----          18      B        IDLSTATE__
0017333 03 002101 153010 -----          19      B        CLOTPU
0017334 03 002102 153057 -----          20      B        LSTCOPYCK
0017335                                     21      EOW          # 12437
-001- 22      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002102 *****
                                           *
```

```

0017335                                     29 COPYSZ
                                           30 # THIS SUBSTATE WILL SET UP THE CONDITIONS REQUIRED TO SEIZE CONTROL OF
                                           31 # THE TAPE SYSTEM.

0017335 03 002103 140006 -----          33      L        RO,N(TPNO)(RAO)
0017336 03 002104 003402 000003          34      NI       RO,M(TAPNO)
0017340 03 002106 040021 -----          35      L        R1,N(MBKNO)(RAO) # SET UP THE BLOCK AND TAPE NUMBER FOR
                                           SEIZURE.
0017341 03 002107 037000 016674 0016674 37      BL       NOOVERRIDE
```

```

0017343                                     41 POSSTD
                                           42 # THIS SUBSTATE POSITIONS STANDARD TAPE FOR NEXT READ

-001- 44 TAPUTL OW      0(2111)          # 12437
45      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002111 *****
```

COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

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TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

```

0017343 01 CLOTPU
0017343 03 002111 137040 010054 0010054 02 # THIS SUBSTATE CLOSES THE TAPE CLIENT
0017345 03 002113 053215 ----- 0017562 03 A1S TUCOPYCTL+N(SUBST)
0017346 04 B CTAPEU
0017346 05 TAKEOUT 2
0017346 03 002114 006000 ----- -001- 06 LR 0,0
0017347 03 002115 006000 ----- -001- 07 LR 0,0
0017350 -001- 08 EOW # 12437
-001- 09 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002115 *****
*

0017350 16 POSCOPY
0017350 17 # THIS SUBSTATE WILL CHANGE THE TU NUMBER IN THE TCB AND POSITION COPY
0017350 18 # UNIT TO NEXT BLOCK TO BE WRITTEN

0017350 03 002116 140023 ----- 20 L R1,N(CBKNO)(RAO)
0017351 03 002117 040006 ----- 21 L RO,N(TPNO)(RAO)
0017352 03 002120 034420 043463 CTSD 22 STL R1,MSFPROG # R1 HAS DATA FOR DISPLAY
0017354 03 002122 010402 ----- 23 RRN RO,W(TAPNO)
0017355 24 REPOS
0017355 03 002123 103402 000003 25 NI RO,M(TAPNO)
0017357 26 CALL JAMTU
0017357 03 002125 037020 127423 CTAPH -001- 27 BSA JAMTU
-001- 28 TAPUTL OW 0(2127) # 12437
-001- 29 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002127 *****

0017361 03 002127 137000 016674 0016674 32 BL NOOVERRIDE
0017363 33 TAKEOUT 9
0017363 03 002131 006000 ----- -001- 34 LR 0,0
0017364 03 002132 006000 ----- -001- 35 LR 0,0
0017365 03 002133 006000 ----- -001- 36 LR 0,0
0017366 03 002134 006000 ----- -001- 37 LR 0,0
0017367 03 002135 006000 ----- -001- 38 LR 0,0
0017370 03 002136 006000 ----- -001- 39 LR 0,0
0017371 03 002137 006000 ----- -001- 40 LR 0,0
0017372 03 002140 006000 ----- -001- 41 LR 0,0
0017373 03 002141 006000 ----- -001- 42 LR 0,0
0017374 -001- 43 EOW # 12437
-001- 44 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002141 *****
*

```

COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

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01 TAPUTL OW 0(2142) # 12448
-001- 02 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002142 *****

0017374
0017374 03 002142 006000 -----
0017375 03 002143 006000 -----
0017376 03 002144 006000 -----
0017377 03 002145 006000 -----
0017400

05 TAKEOUT 4
-001- 06 LR 0,0
-001- 07 LR 0,0
-001- 08 LR 0,0
-001- 09 LR 0,0
-001- 10 EOW # 12448
-001- 11 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002145 *****
*
```

0017400

```

18 READSTD
19 # THIS SUBSTATE WILL READ MASTER TAPE

0017400 03 002146 140006 -----
0017401
0017401 03 002147 037020 127423 CTAPH
0017403 03 002151 137000 015762 0015762
-001- 21 L RO,N(TPNO)(RAO)
22 CALL JAMTU
23 BSA JAMTU
24 BL RD1MON
```

0017405

```

28 WRITCOPY
29 # THIS SUBSTATE WILL SET UP THE REQUIRED CONTROL TO WRITE THE MASTER
30 # TAPE BLOCK OVER TO THE COPY TAPE.

0017405 03 002153 140006 -----
0017406 03 002154 010402 -----
0017407
0017407 03 002155 037020 127423 CTAPH
0017411 03 002157 137000 016620 0016620
-001- 32 L RO,N(TPNO)(RAO)
33 RRN RO,W(TAPNO)
34 CALL JAMTU
35 BSA JAMTU
36 BL BGNWRIT
```

0017413

```

40 LSTCOPYCK
41 # THIS SUBSTATE WILL CHECK IF LAST TRACK AND BLOCK HAS BEEN COPIED.

0017413 03 002161 130420 045266 LAYOUT
0017415 03 002163 040050 -----
0017416 03 002164 017022 003777
0017420 03 002166 055015 ----- 0017435
0017421 03 002167 040011 -----
0017422 03 002170 004017 -----
0017423 03 002171 044011 -----
43 LL .R1,I_0BUF
44 L R2,N(LASBLK)(RAO)
45 CRM R1,R2,M(BLKADR) # WAS LAST BLOCK NUMBER COPIED ?
46 BNC NXBLK
47 L RO,N(AUX2)(RAO) # NUMBER OF TRACKS TO COPY
48 SN RO,1
49 ST RO,N(AUX2)(RAO)
```

COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MONITOR ROUTINES

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0017424 03 002172 014000 ----- 01      TZ      RO
0017425 03 002173 054017 ----- 0017444 02      BC      COPYCMP
0017426 03 002174 040021 ----- 03      L       R1,N(MBKNO)(RAO)
0017427 03 002175 003420 004000 04      AI      R1,ES(TRCK) # ADD 1 TO TRACK NUMBER
0017431 03 002177 003422 014000 05      NI      R1,M(TRCK) # KEEP TRACK NUMBER ONLY
0017433 03 002201 044021 ----- 06      ST      R1,N(MBKNO)(RAO) # STORE NEXT TRACK TO COPY
0017434 03 002202 044023 ----- 07      ST      R1,N(CBKNO)(RAO) # STORE NEXT TRACK TO COPY
0017435 08 NXBLK
0017435 03 002203 137040 010053 0010053 09      A1S     TUCOPYCTL+N(MBKNO) # NEXT BLOCK TO COPY
0017437 03 002205 037040 010055 0010055 10      A1S     TUCOPYCTL+N(CBKNO) # NEXT TRACK TO COPY
11 TAPUTL OM 0(2207) # 12437
-001- 12      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002207 *****

0017441 03 002207 003000 ----- 15      ZR      RO
0017442 16      EOW # 12437
-001- 17      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002207 *****
*

0017442 03 002210 044002 ----- 21      ST      RO,N(SUBST)(RAO) # NEXT TIME THROUGH TASK DISP WILL BE AT
0017443 23      RETURN 2 POSSTD
0017443 03 002211 056462 ----- -001- 24      BTSAN 2

0017444 26 COPYCMP
0017444 27      PRINT PACTION=A,FMT(WRD(C,O,P,Y),WRD(T,A,P,E),WRD(C,O,M,P,L))

-001- 29 # MESSAGE PROTOTYPE
-001- 30 # A mm COPY TAPE COMPL
-002- 31      BSAI PXMRY # SUBROUTINE PHRY IS IN PROGRAM TTYAPP
0017445 03 002213 101200 ----- -002- 32      VFD 1,1 2,0 1,0 3,1 1,0 1,1 1,0 2,0 1,0 3,0
0017446 03 002214 021040 ----- -002- 33      VFD 4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_WRD
0017447 03 002215 021042 ----- -002- 34      VFD 4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_
0017450 03 002216 014013 ----- TTYTBL -002- 35      VFD 5,3 11,CXOPY
0017451 03 002217 000242 ----- TTYTBL -002- 36      VFD 5, 11,TXAPE
0017452 03 002220 000302 ----- TTYTBL -002- 37      VFD 5, 11,CXOMPL
-001- 38      NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS
0017453 03 002221 153003 ----- 0017456 40      B      ABORTTU_

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COMMON NONRESIDENT UTILITIES

PR-1C954-50

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TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

0017454
0017454
0017454 03 002222 137000 016703 0016703
0017456
0017456 03 002224 137000 020215 0020215

01 # TRANSFER VECTORS
02
03 IDLSTATE
04 BL IDLSTATE
05 ABORTTU
06 BL ABORTTU

COMMON NONRESIDENT UTILITIES

PR-10954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 96

TAPE UTILITY MULTISCAN FUNCTION.

0:32:20 2/06/81 ****

TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

0017460

01 COPYFILEMON
02 # TASK DISPENSOR FOR THE FILE COPY ROUTINE

0017460	03	002226	156001	-----	0017500	04	BPAX	R1
0017461	03	002227	153017	-----	0017454	05	B	SEZM
0017462	03	002230	153772	-----	0017454	06	B	IDLSTATE__
0017463	03	002231	153043	-----	0017526	07	B	READFM
0017464	03	002232	153770	-----	0017454	08	B	IDLSTATE__
0017465	03	002233	153050	-----	0017535	09	B	STMADR
0017466	03	002234	153027	-----	0017515	10	B	SEZC
0017467	03	002235	153765	-----	0017454	11	B	IDLSTATE__
0017470	03	002236	153036	-----	0017526	12	B	READFC
0017471	03	002237	153763	-----	0017454	13	B	IDLSTATE__
0017472	03	002240	153055	-----	0017547	14	B	COMPADR
0017473	03	002241	153072	-----	0017565	15	B	OPENMAST
0017474	03	002242	153760	-----	0017454	16	B	IDLSTATE__
0017475	03	002243	153102	-----	0017577	17	B	COPYMAC
0017476	03	002244	153756	-----	0017454	18	B	IDLSTATE__
0017477	03	002245	153147	-----	0017646	19	B	COPFIN

0017500

23 SEZM
24 # THIS SUBSTATE WILL SEIZE THE MASTER TAPE UNIT

0017500	03	002246	103000	-----		26	ZR	RO	
0017501	03	002247	003421	004000	MASACS	27	LI	R1,DIRTRK #TRACK NUMBER OF DIRECTORY	
0017503	03	002251	003423	000017	MASACS	28	OI	R1,DIRLOC # BLOCK ADDRESS OF DIRECTORY	
0017505	03	002253	044021	-----		29	ST	R1,N(MBKNO)(RAD)	
						30	SEIZE	TAPUCLNT	
0017506	03	002254	037020	126205	CTAPH	-002-	31	BSA	OPENTCB
0017510	03	002256	010030	-----		-001-	32	VFD	5,TAPUCLNT 1,0 1,0 2,0 3,1 1,1
0017511	03	002257	155745	-----	0017456	33	BNC	ABORTTU	
0017512	03	002260	037040	010054	0010054	34	A1S	TUCOPYCTL+N(SUBST)	
0017514						35	RETURN	2	
0017514	03	002262	056462	-----		-001-	36	BTSAN	2
						38	TAPUTL	OW 0(2263) # 12649	
						-001-	39	NOTE	***** THE FIRST ADDRESS OVERWRITTEN IS 002263 *****

0017515

42 SEZC
43 # THIS SUBSTATE WILL SEIZE THE COMPARE TAPE UNIT

0017515	03	002263	103001	-----		45	LN	RO,1	
0017516						46	EOW	# 12649	
						-001-	47	NOTE	***** THE LAST ADDRESS OVERWRITTEN IS 002263 *****
								*	

COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

```

0017516 03 002264 040021 -----          01      L      R1,N(MBKNO)(RAO)
                                           02      SEIZE  TAPUCLNT
0017517 03 002265 037020 126205 CTAPH -002- 03      BSA   OPENTCB
0017521 03 002267 010030 -----          -001- 04      VFD   5,TAPUCLNT 1,0 1,0 2,0 3,1 1,1
0017522 03 002270 155734 ----- 0017456 05      BNC   ABORTTU____
0017523                                     06      NEXSTAT
0017523 03 002271 137040 010054 0010054 07      A1S   TUCOPYCTL+N(SUBST)
0017525                                     08      RETURN 2
0017525 03 002273 056462 -----          -001- 09      BTSAN 2

0017526                                     13      READFM
0017526                                     14      READFC
                                           15 # THESE SUBSTATES WILL READ THE MASTER TAPE UNIT AND
                                           16 # THE COMPARE TAPE UNIT IN TURN.

0017526 03 002274 173047 -----          18      RD1BLK TAPUCLNT,STALST
0017527 03 002275 010400 015771 0015771 -002- 19      BSAI  RZEQR # SUBROUTINE REQR IS IN PROGRAM CTAPH
0017531 03 002277 156000 -----          -001- 20      ADDR  STALST,TAPUCLNT*E(7)+RD1BLK*E(3)
                                           21      BPAX  RD
                                           22      TAPUTL OW 0(2300) # 12649
                                           -001- 23      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002300 *****

0017532 03 002300 153771 ----- 0017523 26      B      NEXSTAT
0017533 03 002301 153723 ----- 0017456 27      B      ABORTTU____
0017534                                     28      RETURN 2
0017534 03 002302 156462 -----          -001- 29      BTSAN 2
0017535                                     30      EOW   # 12649
                                           -001- 31      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002302 *****
                                           *

0017535                                     38      STMADR
                                           39 # THIS SUBSTATE STORES THE ADDRESS OF THE MASTER TDC

0017535                                     41      CALL  DIRSER # SUBROUTINE DIRECTORY SERCH
0017535 03 002303 137020 020157 0020157 -001- 42      BSA   DIRSER
0017537 03 002305 155717 ----- 0017456 43      BNC   ABORTTU # FILE NOT FOUND
0017540 03 002306 044031 -----          44      ST   R1,N(AUX2)(RAO) # STORE STARTING ADDRESS OF MASTER
0017541 03 002307 044050 -----          45      ST   R2,N(LASBLK)(RAO) # STORE ENDING ADDRESS OF MASTER
0017542 03 002310 037040 010054 0010054 46      A1S   TUCOPYCTL+N(SUBST) # NEXT SUBSTATE
                                           47      TAPUTL OW 0(2312) #3E790260
                                           -001- 48      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002312 *****

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COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

```

0017544 03 002312 037000 121463 0000225 -001- 01 CPATCH7 BGNP 0(225) #3E790260
-001- 02 BL XXX1143
-001- 03 NOTE CPATCH7 'CSECT'
-001- 04 NOTE ***** PATCH AREA BEGINS AT 000225 *****

0121463 -001- 07 XXX1143 PATCHAREA
0121463 14 000225 173047 ----- -002- 08 CLOSE TAPUCLNT
0121464 14 000226 011300 ----- -001- 09 BSAI RXEQR # SUBROUTINE REQR IS IN PROGRAM CTAPH
0121465 -001- 10 VFD 5,TAPUCLNT 4,CLOSE 1,1 1,0 5,0
0121465 14 000227 137020 147320 BLMMA -001- 11 CALL TEMPINH_
0121467 -001- 12 BSA TEMPINH_
0121467 14 000231 137000 017546 0002314 -001- 13 ENDP #3E790260
-001- 14 BL XXX1148
-001- 15 NOTE ***** LAST PATCH ADDRESS USED IS 000232 *****
-001- 16 NOTE ***** NUMBER OF PATCH WORDS USED IS 6 (DECIMAL) *****

0017546 -001- 19 XXX1148 OWCONTINUE
0017546 20 EOW #3E790260
-001- 21 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002313 *****
*

0017546 25 RETURN 2
0017546 03 002314 156462 ----- -001- 26 BTSAN 2

0017547 30 COMPADR # COMPARE ADDRESSES
31 # THIS SUBSTATE COMPARES THE ADDRESSES OF THE MASTER AND STANDARD TDCS

0017547 33 CALL DIRSER
0017547 03 002315 137020 020157 0020157 -001- 34 BSA DIRSER
0017551 03 002317 155705 ----- 0017456 35 BNC ABORTTU # FILE NOT FOUND
0017552 03 002320 040071 ----- 36 L R3,N(AUX2)(RAO) # GET STARTING ADDRESS OF MASTER
-001- 37 TAPUTL OW 0(2321) # 12649
-001- 38 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002321 *****

0017553 03 002321 040110 ----- 41 L R4,N(LASBLK)(RAO) # GET ENDING ADR OF MASTER
0017554 42 EOW # 12649
-001- 43 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002321 *****
*

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COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

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0017554 03 002322 020023 ----- 01 CR R1,R3 # COMPARE STARTING ADDRESSES
0017555 03 002323 055030 ----- 02 BNC BYBLK
0017556 03 002324 020044 ----- 03 CR R2,R4 # COMPARE ENDING BLOCK NUMBERS
0017557 03 002325 055026 ----- 04 BNC BYBLK
0017560 03 002326 037040 010054 0010054 05 A1S TUCOPYCTL+N(SUBST) # NEXT SUBSTATE
0017562 06 TAPEU
07 TAPUTL OW 0(2330) #3E790260
-001- 08 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002330 *****

0017562 03 002330 137000 121505 0000247 -001- 11 CPATCH7 BGNP 0(247) #3E790260
-001- 12 BL XXX1160
-001- 13 NOTE CPATCH7 'CSECT'
-001- 14 NOTE ***** PATCH AREA BEGINS AT 000247 *****

0121505 -001- 17 XXX1160 PATCHAREA
18 CLOSE TAPUCLNT
0121505 14 000247 173047 ----- -002- 19 BSAI RXEQR # SUBROUTINE REQR IS IN PROGRAM CTAPH
0121506 14 000250 011300 ----- -001- 20 VFD 5,TAPUCLNT 4,CLOSE 1,1 1,0 5,0
0121507 21 CALL TEMPINH_
0121507 14 000251 137020 147320 BLMMA -001- 22 BSA TEMPINH_
0121511 23 ENDP #3E790260
0121511 14 000253 137000 017564 0002332 -001- 24 BL XXX1165
-001- 25 NOTE ***** LAST PATCH ADDRESS USED IS 000254 *****
-001- 26 NOTE ***** NUMBER OF PATCH WORDS USED IS 6 (DECIMAL) *****

0017564 -001- 29 XXX1165 OWCONTINUE
0017564 30 EOW #3E790260
-001- 31 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002331 *****
*

0017564 35 RETURN 2
0017564 03 002332 156462 ----- -001- 36 BTSAN 2

0017565 40 OPENMAST
41 # RA1 MUST POINT TO THE DATA AREA HOLDING THE FILE NAME

0017565 03 002333 103000 ----- 43 ZR RO
0017566 03 002334 003020 ----- 44 ZR R1
0017567 03 002335 031440 010055 0010055 45 LAL R2,TUCOPYCTL+3,RA1
46 OPENM TAPUCLNT,RA1
-001- 47 # ASSURE RA1 POINTS TO YOUR DATA TABLE.
-002- 48 BSA OPENM
0017571 03 002337 037020 126202 CTAPH -001- 49 BNC ABORTTU___
0017573 03 002341 155663 ----- 0017456

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COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

```

0017574 03 002342 037040 010054 0010054      01      A1S      TUUTCTL+N(SUBST)
0017576      02      RETURN      2
0017576 03 002344 056462 -----      -001- 03      BTSAN      2

0017577      05 COPYMAC      # COPYFILE MACRO CALL
      06 COPY      TAPUCLNT
-002- 07      BSAI      RXEQR      # SUBROUTINE REQR IS IN PROGRAM CTAPH
0017600 03 002346 011500 -----      -001- 08      VFD      5,TAPUCLNT 4,COPY 1,1 1,0 5,0
0017601 03 002347 156000 -----      09      BPAX      R0
      10 TAPUTL OW      0(2350)      # 12649
-001- 11      NOTE      ***** THE FIRST ADDRESS OVERWRITTEN IS 002350 *****

0017602 03 002350 153721 ----- 0017523      14      B      NEXSTAT
0017603 03 002351 153653 ----- 0017456      15      B      ABORTTU___
0017604      16      RETURN      2
0017604 03 002352 156462 -----      -001- 17      BTSAN      2
0017605      18      EOW
-001- 19      NOTE      # 12649
      ***** THE LAST ADDRESS OVERWRITTEN IS 002352-*****
      *

0017605      24 BYBLK
      25 # CHECK FOR FILE WRAP-AROUND AND IF FILE LENGTHS DIFFER.

0017605 03 002353 117022 014000      27      CRM      R1,R2,H(TRACK)
0017607      28      IF      CF = 0 THEN B ABORTTU___
0017607 03 002355 055647 ----- 0017456 -001- 29      BNC      ABORTTU___
0017610 03 002356 017064 014000      30      CRM      R3,R4,H(TRACK)
0017612      31      IF      CF = 0 THEN B ABORTTU___
0017612 03 002360 055644 ----- 0017456 -001- 32      BNC      ABORTTU___
0017613 03 002361 016521 003777      33      LRM      R5,R1,H(BLKADR)      # KEEP STARTING ADDRESS ONLY
0017615 03 002363 016542 003777      34      LRM      R6,R2,H(BLKADR)      # KEEP ENDING ADDRESS ONLY
0017617 03 002365 005145 -----      35      SR      R6,R5      # R6 = LENGTH R5 = BGN ADR OF COMPARE
0017620 03 002366 016563 003777      36      LRM      R7,R3,H(BLKADR)
0017622 03 002370 016604 003777      37      LRM      R8,R4,H(BLKADR)
0017624 03 002372 005207 -----      38      SR      R8,R7      # R8 = LENGTH R7 = BGN ADR OF MASTER
0017625      39      IF      R6 = R8 THEN B ABORTTU___
0017625 03 002373 020150 -----      -002- 40      CR      R6,R8
0017626 03 002374 055630 ----- 0017456 -001- 41      BNC      ABORTTU___
      42 # SET UP CONTROL BLOCK FOR THE COPY BLOCK ROUTINE
      43 TAPUTL OW      0(2375)      # 12649
-001- 44      NOTE      ***** THE FIRST ADDRESS OVERWRITTEN IS 002375 *****

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COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY MONITOR ROUTINES

CNRUTL W770

```

0017627 03 002375 003164 ----- 01 LN R7,4
0017630 03 002376 044166 ----- 02 ST R7,N(TPNO)(RAO) # STORE TAPE NUMBERS 0&1
0017631 03 002377 003160 ----- 03 ZR R7
0017632 03 002400 044162 ----- 04 ST R7,N(SUBST)(RAO) # CLEAR SUBSTATE
0017633 03 002401 003561 000011 05 LI R7,COPYFN
0017635 03 002403 037000 020426 0020426 -001- 06 TAPUTL BGNP 0(3174) # 12649
-001- 07 BL XXX1186
-001- 08 NOTE TAPUTL 'CSECT'
-001- 09 NOTE ***** PATCH AREA BEGINS AT 003174 *****

0020426 -001- 12 XXX1186 PATCHAREA
0020426 03 003174 144160 ----- 13 ST R7,N(UTCTL)(RAO) # STORE NEW FUNCTION CODE
0020427 03 003175 003442 003777 14 NI R2,M(BLKADR)
0020431 03 003177 044050 ----- 15 ST R2,N(LASBLK)(RAO) # STORE LAST BLK TO COPY
0020432 03 003200 003161 ----- 16 LN R7,1 # COPY FROM ONE TRK ONLY
0020433 03 003201 044171 ----- 17 ST R7,N(AUX2)(RAO)
0020434 18 ENDP # 12649
0020434 03 003202 037000 017637 0017637 -001- 19 BL XXX1188
-001- 20 NOTE ***** LAST PATCH ADDRESS USED IS 003203 *****
-001- 21 NOTE ***** NUMBER OF PATCH WORDS USED IS 8 (DECIMAL) *****

0017637 -001- 24 XXX1188 OWCONTINUE
0017637 03 002405 103462 017777 25 NI R3,M(TRCK)+M(BLKADR) # TRACK AND BLK NUMBER OF MASTER
0017641 26 EOW # 12649
-001- 27 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002406 *****
*

0017641 03 002407 044061 ----- 31 ST R3,N(MBKNO)(RAO) # TRACK & BLOCK NUMBER OF MASTER
32 TAPUTL OW 0(2410) # 12649
-001- 33 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002410 *****

0017642 03 002410 003422 017777 36 NI R1,M(TRCK)+M(BLKADR) # TRACK AND BLK NUMBER OF COMPARE
0017644 37 EOW # 12649
-001- 38 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002411 *****
*

0017644 03 002412 044023 ----- 42 ST R1,N(CBKNO)(RAO) # TRACK & BLOCK NUMBER OF COMPARE
0017645 03 002413 053715 ----- 0017562 43 B CTAPEU

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COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

```

0017646 '
0017646      01 COPFIN
              02      PRINT  PACTION=A,FMT(WRD(C,O,P,Y),WRD(F,I,L,E),WRD(C,O,M,P,L))

-001- 04 # MESSAGE PROTOTYPE
-001- 05 #   A mm COPY FILE COMPL
-002- 06      BSAI  PXMRY # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
-002- 07      VFD  1,1 2,0 1,0 3,1 1,0 1,1 1,0 2,0 1,0 3,0
-002- 08      VFD  4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_WRD
-002- 09      VFD  4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_
-002- 10      VFD  5,3 11,CXOPY
-002- 11      VFD  5, 11,FXILE
-002- 12      VFD  5, 11,CXOMPL
-001- 13      NOTE  THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
                   CONTAINED IN GENERAL REGISTERS
0017655 03 002423 153340 ----- 0020215 15      B      ABORTTU

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COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

0017656

01 LOMASBTHON

02 # THIS IS THE TASK DISPENSER FOR THE OFFLINE MAIN STORE RELOAD
 03 # FUNCTION USING THE BOOTSTRAP IN THE OFFLINE CC.

```

0017656 03 002424 156001 ----- 05 BEGIN ( )
0017656 03 002425 153016 ----- 06 BPAX R1
0017657 03 002425 153016 ----- 07 B OPENBOOT # OPEN BOOTSTRAP FILE
0017660 03 002426 153032 ----- 08 B IDLESTATE
0017661 03 002427 153033 ----- 09 B RD1STBLK # READ IN OFFLINE BOOTSTRAP PARAMETERS
0017662 03 002430 153030 ----- 10 B IDLESTATE
0017663 03 002431 153033 ----- 11 B CLOSEBOOT # CLOSE BOOTSTRAP FILE
12 TAPUTL OW 0(2432) # 12447
-001- 13 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002432 *****

0017664 03 002432 106000 ----- 16 TAKEOUT 1
0017664 03 002432 106000 ----- -001- 17 LR 0,0
0017665 18 EOW # 12447
-001- 19 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002432 *****

0017665 03 002433 153034 ----- 22 B OVERWRITE1 # LOAD INITIALIZE TEST CONSTANTS INTO OTS
0017666 03 002434 153046 ----- 23 B PHASEONE # KICKOFF BOOTSTRAP
0017667 03 002435 153103 ----- 24 B CHECKHALT1 # CHECK FOR CC HALTED
0017670 03 002436 153123 ----- 25 B OVERWRITE2 # SET OFFLINE BOOT SWITCH IN OTS
0017671 03 002437 153133 ----- 26 B PHASETWO # CONTINUE BOOTSTRAP LOAD
0017672 03 002440 153140 ----- 27 B UPDSYSTIM2 # PERFORM TIMING FOR OFFLINE CC & CHECKHALT2
0017673 03 002441 153151 ----- 28 B UPDOTS # UPDATE OTS FROM ONLINE (IF NECESSARY)
0017674 03 002442 153171 ----- 29 B UPDOTSCONT # CONTINUE UPDATE

```

0017675

33 OPENBOOT

```

34 # SUBSTATE TO OPEN EXPLICIT THE OFF-LINE TAPE BOOTSTRAP FILE.
0017675 03 002443 103401 177777 35 LI RO,E(16)-1
0017677 03 002445 057437 ----- 36 TCC1
0017700 03 002446 030000 ----- 37 ICF RO,0
0017701 03 002447 015400 ----- 38 COM RO # RO =TAPE NO. OF OFFLINE CC.
39 # R1 MUST CONTAIN 0 (RELATIVE BLOCK NO. FOR POSITION)
40 OPENE TAPUCLNT,(B,O,O,T,S,T,P)
0017702 03 002450 037020 126205 CTAPH -002- 41 BSA OPENTCB
0017704 03 002452 011123 ----- -001- 42 VFD 5,TAPUCLNT 1,0 1,1 2,0 3,((7+1)/2)+1 1,0 3,((7+1)/2)-1
0017705 03 002453 041317 ----- -001- 43 VFD 8,ASC B 8,ASC O
0017706 03 002454 147724 ----- -001- 44 VFD 8,ASC O 8,ASC T
0017707 03 002455 051724 ----- -001- 45 VFD 8,ASC S 8,ASC T
0017710 03 002456 050000 ----- -001- 46 VFD 8,ASC P 8,ASC
47 # OPEN FAILURE WILL BE DETECTED BY IDLESTATE
0017711 03 002457 153166 ----- 0020077 48 B ADVSUBST # ADVANCE SUBSTATE

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COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

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TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

```

0017712                                01 IDLESTATE
0017712 03 002460 137000 016703 0016703 02 # SUBSTATE TO WAIT FOR TAPE OPERATION
                                           03      BL      IDLSTATE

0017714                                07 RD1STBLK
0017714 03 002462 137000 015762 0015762 08 # SUBSTATE TO READ IN THE FIRST BLOCK OF BOOTSTRAP FILE.
                                           09      BL      RD1MON

0017716                                13 CLOSEBOOT
                                           14 # SUBSTATE TO CLOSE THE BOOTSTRAP FILE AFTER READ-IN
0017716                                15 TAPUTL OW      0(2464)      # 3E790507
-001- 16      NOTE      ***** THE FIRST ADDRESS OVERWRITTEN IS 002464 *****

0017716 03 002464 137000 115213 0000120 -001- 19 CPATCH3 BGNP      0(120)      # 3E790507
                                           -001- 20      BL      XXX1223
                                           -001- 21      NOTE      CPATCH3 'CSECT'
                                           -001- 22      NOTE      ***** PATCH AREA BEGINS AT 000120 *****

0115213                                -001- 25 XXX1223 PATCHAREA
                                           26      CLOSE      TAPUCLNT
0115213 13 000120 173047 ----- -002- 27      BSAI      RXEQR      # SUBROUTINE REQR IS IN PROGRAM CTAPH
0115214 13 000121 011300 ----- -001- 28      VFD      5,TAPUCLNT 4,CLOSE 1,1 1,0 5,0
0115215                                29      CALL      QOFLCC      # QUARANTINE OFFLINE STORE (TURN OFF UPDATE)
0115215 13 000122 137020 001226 CBLM -001- 30      BSA      QOFLCC
0115217                                31      ENDP      # 3E790507
0115217 13 000124 137000 017720 0002466 -001- 32      BL      XXX1228
                                           -001- 33      NOTE      ***** LAST PATCH ADDRESS USED IS 000125 *****
                                           -001- 34      NOTE      ***** NUMBER OF PATCH WORDS USED IS 6 (DECIMAL) *****

0017720                                -001- 37 XXX1228 OWCONTINUE
0017720                                38      EOW      # 3E790507
                                           -001- 39      NOTE      ***** THE LAST ADDRESS OVERWRITTEN IS 002465 *****

0017720 03 002466 153157 ----- 0020077 42      B      ADVSUBST

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COMMON NONRESIDENT UTILITIES

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TAPE UTILITY MULTISCAN FUNCTION

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TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

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0017721 '
01 OVERWRITE1
02 # SUBSTATE TO TURN OFF REFRESH ON THE OMAS AND
03 # WRITE THE OFFLINE BOOT TABLE DATA INTO OTHER TEMPORARY STORE
04 TAPUTL OW 0(2467) # 3E790679
-001- 05 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002467 *****

0017721 03 002467 137000 121367 0000131
08 CPATCH7 BGNP 0(131) # 3E790679
-001- 09 BL XXX1234
-001- 10 NOTE CPATCH7 'CSECT'
-001- 11 NOTE ***** PATCH AREA BEGINS AT 000131 *****

0121367
0121367 14 000131 151103 -----
0121370 14 000132 055034 ----- 0121424
0121371 14 000133 040010 -----
0121372
0121372 14 000134 014000 -----
0121373 14 000135 055026 ----- 0121421
0121374 14 000136 040011 -----
0121375
0121375 14 000137 014000 -----
0121376 14 000140 055010 ----- 0121406
-001- 14 XXX1234 PATCHAREA
15 TBS N(LENO)(RA0),4 # ERASE OFF-LINE STORE ?
16 BNC BACKX # NO
17 L RD,N(AUX1)(RA0)
18 IF RD = 0 THEN RGBEGIN
-002- 19 TZ RD
-001- 20 BNC IFS1236
21 L RD,N(AUX2)(RA0)
22 IF RD = 0 THEN RGBEGIN
-002- 23 TZ RD
-001- 24 BNC IFS1238
25 OW 0(141) #3E800198
-001- 26 CPATCH7 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000141 *****
*****

0121377 14 000141 037000 121602 0121602
-001- 30 CPATCH7 BGNP 0(344) #3E800198
-001- 31 BL XXX1242
-001- 32 NOTE CPATCH7 'CSECT'
-001- 33 NOTE ***** PATCH AREA BEGINS AT 000344 *****
*

0121602
0121602 14 000344 131400 043017 CTSD -001- 37 XXX1242 PATCHAREA
0121604 14 000346 061501 ----- CBLM 38 LAL RD,AUMASCTL,RA1
0121605 14 000347 003641 006070 39 SBS N(PKEYM)(RA1),S(PKEYM) # SET UNCONDITIONAL UPDATE BIT
0121607 40 LI R10,REFSTOP # REFRESH STOP COMMAND
0121607 14 000351 037000 121401 0121401 -001- 41 ENDP #3E800198
-001- 42 BL XXX1244
-001- 43 NOTE ***** LAST PATCH ADDRESS USED IS 000352 *****
*
-001- 45 NOTE ***** NUMBER OF PATCH WORDS USED IS 7 (DECIMAL) *****

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0121401 -001- 01 XXX1244 OMCONTINUE
0121401 02 EOW #3E800198
-001- 03 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000142
*****

0121401 07 BGNTIM SEC=44
0121401 -001- 08 CALL TIMEOUT
0121401 14 000143 173022 ----- -002- 09 BSAI TXIMOUT # SUBROUTINE TIMEOUT IS IN PROGRAM CSYSUB
0121402 14 000144 003341 ----- -001- 10 DATA 1761 # TIMEOUT+1
0121403 14 000145 144011 ----- 11 ST RO,N(AUX2)(RAO) # KEEP TIME CONSTANT
0121404 14 000146 037020 121425 0121425 -001- 12 CALL REFRESH_
0121406 14 14 BSA REFRESH_
0121406 14 14 RGEN
0121406 -001- 15 IFS1238 L RO,N(AUX2)(RAO)
0121406 14 000150 140011 ----- 16 CHKTIM # REFRESH OFF LONG ENOUGH ?
0121407 17 CALL TIMCHK # HAS TIMEOUT OCCURRED?
0121407 -001- 18 BSAI TXIMCHK # SUBROUTINE TIMCHK IS IN PROGRAM CSYSUB
0121410 14 000151 073037 ----- -002- 19 BNC STRTREF_ # YES
0121410 14 000152 155002 ----- 0121412 20 RTN_LP
0121411 21 RETURN 2
0121411 22 BTSAN 2
0121411 14 000153 156462 ----- -001- 23 STRTREF_
0121412 24 LI R10,REFSTR # REFRESH START COMMAND
0121412 14 000154 103641 006060 25 BGNTIM SEC=1
0121414 26 CALL TIMEOUT
0121414 -001- 27 BSAI TXIMOUT # SUBROUTINE TIMEOUT IS IN PROGRAM CSYSUB
0121414 14 000156 073022 ----- -002- 28 DATA 41 # TIMEOUT+1
0121415 14 000157 000051 ----- -001- 29 ST RO,N(AUX1)(RAO)
0121416 14 000160 144010 ----- 30 CALL REFRESH_
0121417 14 000161 037020 121425 0121425 -001- 31 BSA REFRESH_
0121421 32 RGEN
0121421 -001- 33 IFS1236 L RO,N(AUX1)(RAO)
0121421 14 000163 140010 ----- 34 CHKTIM
0121422 35 CALL TIMCHK # HAS TIMEOUT OCCURRED?
0121422 -001- 36 BSAI TXIMCHK # SUBROUTINE TIMCHK IS IN PROGRAM CSYSUB
0121422 14 000164 073037 ----- -002- 37 BC RTN_LP
0121423 14 000165 154766 ----- 0121411 38 BACKX
0121424 39 B BACK1
0121424 14 000166 153023 ----- 0121447 40 REFRESH_
0121425 44 LL R3,STRLIM
0121425 14 000167 130462 021637 TDATA 45 NI R3,0(14) # KEEP HI BITS OF MAS ADR
0121427 14 000171 003462 000014 46 RRN R3,1
0121431 14 000173 010461 ----- 47 AN R3,2
0121432 14 000174 004462 ----- 48 LAL R2,MASCIOSC,RA1
0121433 14 000175 031441 016446 MASACS 49

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0121435
0121435 14 000177 104077 ----- 01 NX_ST
0121436 14 000200 042623 ----- 02 SN R3,1 # R3 = NO. OF MAS
0121437 03 000200 042623 ----- 03 LX R9,R3(RA1)
0121437 14 000201 037020 111050 CSYSUB -001- 04 CALL SENDMIO
0121441 14 000203 103465 000001 05 BSA SENDMIO
0121443 14 000205 054003 ----- 06 CI R3,1 # LAST STORE DONE
0121444 14 000206 036060 121435 0121435 07 BC RTNNOH
0121446 09 RTNNOH 08 BX R3,NX_ST
0121446 10 RETURN
0121446 14 000210 156400 ----- -001- 11 BTSA
0121447 12 BACK1
0121447 13 CALL INITOST # INITILIZE OTHER CC AND MAS
0121447 14 000211 137020 110443 CSYSUB -001- 14 BSA INITOST
0121451 14 000213 131520 045466 CIPL 15 LAL R5,0FLB00TTBL,RA1
0121453 16 ENDP # 3E790679
0121453 14 000215 037000 017723 0002471 -001- 17 BL XXX1264
-001- 18 NOTE ***** LAST PATCH ADDRESS USED IS 000216 *****
-001- 19 NOTE ***** NUMBER OF PATCH WORDS USED IS 54 (DECIMAL) *****

0017723 -001- 22 XXX1264 OWCONTINUE
0017723 23 EOW # 3E790679
-001- 24 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002470 *****
*

0017723 03 002471 153006 ----- 0017731 28 B OVERWRDEC
0017724 29 OVERWRLP
0017724 03 002472 141701 ----- 30 LA RA0,1(RA1)
0017725 03 002473 041721 ----- 31 LA RA0+1,1(RA1) # ADDRESS IN RA0
0017726 03 002474 041401 ----- 32 LA R0,1(RA1) # DATA IN R0
0017727 33 STOS D(RA0) # WRITE INTO OTS
E0017727 03 002475 000400 ----- -001- 34 MSTF O(RA0)
0017730 03 002476 136100 136120 -001- 35 DATA B(1011110001000000)
0017731 36 OVERWRDEC
0017731 03 002477 136120 017724 0017724 37 BX R5,OVERWRLP
0017733 03 002501 053144 ----- 0020077 38 B ADVSUBST

0017734 42 PHASEONE
0017734 43 # SUBSTATE TO INITIALIZE THE OFFLINE CU AND KICKOFF PHASE ONE
0017734 44 CALL SETMAINT # SET OF THE TAPES MAINTENANCE STATE TO
ALLOW DIRECT CONTROL
0017734 03 002502 137020 127432 CTAPH -001- 46 BSA SETMAINT
47 TAPUTL OW O(2504) # 13054
-001- 48 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002504 *****

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0017736 , 01 CALL QOFLCC # QUARANTINE THE OFFLINE HAS (TURN OFF
                                # UPDATE)
0017736 03 002504 137020 001226 CBLM -001- 03 BSA QOFLCC
0017740 04 CALL INITOST # INITIALIZE OTHER CC AND MAS
0017740 03 002506 137020 110443 CSYSUB -001- 05 BSA INITOST
0017742 06 EOW # 13054
0017742 -001- 07 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002507 *****
                                *

0017742 03 002510 131420 017747 0017747 11 LAL R1,MICROBOOTBL,RA1 # RA1 = MICROBOOTBL
0017744 12 CALL EXCMCH # EXECUTE TABLE ENTRIES
0017744 03 002512 037020 111216 CSYSUB -001- 13 BSA EXCMCH
0017746 03 002514 153131 ----- 0020077 14 B ADVSUBST

                                16 TAPUTL OW 0(2515) # 13536
-001- 17 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002515 *****

0017747 20 MICROBOOTBL # MICRO BOOTSTRAP TABLE
0017747 03 002515 000010 ----- 21 DATA (MICROEND-MICROBOOTBL-1)/2
0017750 22 EOW # 13536
-001- 23 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002515 *****
                                *

0017750 03 002516 006420 000000 27 ADDR O,MSTOP
0017752 03 002520 004620 000001 28 ADDR E(S(OVLOF)),LDMCHB
0017754 03 002522 000720 106631 29 ADDR MSXT*(8)IMCHB*F,LDMIRL
0017756 03 002524 004620 000040 30 ADDR E(S(HLT)),LDMCHB
0017760 03 002526 000720 107231 31 ADDR SS_RXT*(8)IMCHB*F,LDMIRL

                                35 TAPUTL OW 0(2530) # 13536
-001- 36 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002530 *****

0017762 03 002530 000720 070616 39 ADDR BRXT*(8)ISS*F,LDMIRL
0017764 03 002532 002320 001472 40 ADDR IPL,LDMAR
0017766 03 002534 006220 000000 41 ADDR O,MSTART
0017770 42 MICROEND
0017770 03 002536 000000 000000 43 ADDR O,0 # SPARE
0017772 44 EOW # 13536
-001- 45 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002537 *****
                                *

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0017772          01 CHECKHALT
0017772 03 002540 103121 ----- 02 # SUBSTATE TO MONITOR THE OFFLINE CC FOR A VALID HALT
0017773          03 LN R5,1
          04 CHKHLTMERGE
          05 TAPUTL OW 0(2541) #3E790507
-001- 06 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002541 *****

          09 CPATCH3 BGNP 0(126) #3E790507
0017773 03 002541 137000 115221 0000126 -001- 10 BL XXX1287
-001- 11 NOTE CPATCH3 'CSECT'
-001- 12 NOTE ***** PATCH AREA BEGINS AT 000126 *****

0115221          -001- 15 XXX1287 PATCHAREA
0115221          16 CALL TEMPINH_ # ALLOW FULL BASE LEVEL BREAK
0115221 13 000126 137020 147320 BLMMA -001- 17 BSA TEMPINH_
0115223 13 000130 103401 000223 18 LI RD,RTNSS
0115225          19 ENDP #3E790507
0115225 13 000132 037000 017775 0002543 -001- 20 BL XXX1290
-001- 21 NOTE ***** LAST PATCH ADDRESS USED IS 000133 *****
-001- 22 NOTE ***** NUMBER OF PATCH WORDS USED IS 6 (DECIMAL) *****

0017775          -001- 25 XXX1290 OWCONTINUE
0017775          26 EOW #3E790507
-001- 27 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002542 *****
          *

0017775          31 CALL SMCH
0017775 03 002543 137020 111077 CSYSUB -001- 32 BSA SMCH
0017777 03 002545 155102 ----- 0020101 33 BNC NOADVSBST
0020000 03 002546 012403 ----- 34 UNPK MCHD
0020001 03 002547 024065 ----- 35 TBN R3,S(HLT)
0020002 03 002550 055077 ----- 0020101 36 BNC NOADVSBST

          38 TAPUTL OW 0(2551) # 12638
-001- 39 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002551 *****

          42 # OFFLINE CC HAS HALTED - CHECK IF VALID
0020003 03 002551 031700 045467 CIPL 43 LAL RAO,OFLBOOTBL+1,RA1
0020005          44 EOW # 12638
-001- 45 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002552 *****
          *

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0020005 03 002553 040721 ----- 01 L RAO+1,1(RA1)
0020006 02 LOS O(RAO) # READ WORD 'OFLBOOTSW' IN OFFLINE MAS
0020006 03 002554 076000 ----- -001- 03 STAF O(RAO)
0020007 03 002555 136160 ----- -001- 04 DATA B(1011110001110000)
0020010 03 002556 020005 ----- 05 CR R0,R5
0020011 06 IF CF = 0 THEN B ABORTTU # IMPROPER TERMINATION OF PHASE 1
0020011 03 002557 055204 ----- 0020215 -001- 06 BNC ABORTTU
0020012 03 002560 053065 ----- 0020077 08 B ADVSUBST

12 TAPUTL OW 0(2561) # 12638
-001- 13 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002561 *****

0020013 16 OVERWRITE2
0020013 03 002561 131520 045466 CIPL 17 # SUBSTATE TO MODIFY THE OFFLINE BOOT TABLE AND WRITE INTO THE OTS
0020015 18 LAL R5,OFLBOOTTLB,RA1
19 EOW # 12638
-001- 20 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002562 *****
*

0020015 03 002563 051063 ----- 24 TBS N(LENO)(RAO),3 # CF = 1 MEANS 'FULL' RELOAD REQUEST
0020016 25 IF CF = 1 THEN SBS 3(RA1),S(ALLMAS) # SET ALL MAS FLAG
0020016 03 002564 055002 ----- 0020020 -001- 26 BNC IFS1305
0020017 03 002565 061763 ----- -001- 27 SBS 3(RA1),S(ALLMAS) # SET ALL MAS FLAG
0020020 28 IFS1305
0020020 03 002566 103120 ----- 29 ZR R5
0020021 03 002567 044526 ----- 30 ST R5,6(RA1) # ZERO INITTST1
31 TAPUTL OW 0(2570) #3E790679
-001- 32 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002570 *****

0020022 03 002570 037000 121313 0000055 35 CPATCH7 BGNP 0(55) #3E790679
-001- 36 BL XXX1308
-001- 37 NOTE CPATCH7 'CSECT'
-001- 38 NOTE ***** PATCH AREA BEGINS AT 000055 *****

0121313 -001- 41 XXX1308 PATCHAREA
0121313 14 000055 144531 ----- 42 ST R5,9(RA1) # ZERO INITTST2
0121314 14 000056 037000 121447 0121447 43 BL BACK1
0121316 44 ENDP NR #3E790679
-001- 45 NOTE ***** LAST PATCH ADDRESS USED IS 000057 *****
-001- 46 NOTE ***** NUMBER OF PATCH WORDS USED IS 3 (DECIMAL) *****

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0020024          01      EOW      #3E790679
-001- 02      NOTE      ***** THE LAST ADDRESS OVERWRITTEN IS 002571 *****
          *

          09 TAPUTL OW      0(2572)      # 12638
-001- 10      NOTE      ***** THE FIRST ADDRESS OVERWRITTEN IS 002572 *****

0020024          13 PHASETWO
0020024 03 002572 131340 045500 CIPL      14 # SUBSTATE TO START THE MAIN BOOTSTRAP PHASE IN THE OFFLINE CC
0020026          15      LAL      RA1,BOOTLOADADR,RAD
          16      EOW      # 12638
-001- 17      NOTE      ***** THE LAST ADDRESS OVERWRITTEN IS 002573 *****
          *

0020026 03 002574 040361 -----          21      L      RA1+1,1(RAD)
0020027          22      CALL     EXCOFLPG
0020027 03 002575 037020 111235 CSYSUB -001- 23      BSA      EXCOFLPG
0020031 03 002577 153046 ----- 0020077 24      B      ADVSUBST

          28 TAPUTL OW      0(2600)      # 12638
-001- 29      NOTE      ***** THE FIRST ADDRESS OVERWRITTEN IS 002600 *****

0020032          32 UPDSYSIM2
0020032 03 002600 131340 045502 CIPL      33 # SUBSTATE TO UPDATE THE OTS 'SYSYIM' WORD WITH TIMING DATA.
0020034          34 # AFTER THE UPDATE, A CHECK IS MADE FOR A VALID HALT .
          35      LAL      RA1,OFLSYSYIM,RAD
          36      EOW      # 12638
-001- 37      NOTE      ***** THE LAST ADDRESS OVERWRITTEN IS 002601 *****
          *

0020034 03 002602 040361 -----          41      L      RA1+1,1(RAD)      # RA1 = OFFLINE 'SYSYIM'
0020035 03 002603 003000 -----          42      ZR      RO
0020036          43      CALL     TIMOUTX
0020036 03 002604 037020 111373 CSYSUB -001- 44      BSA      TIMOUTX
0020040          45      STOS     O(RA1)      # WRITE OFFLINE SYSYIM FOR BOOTSTRAP TIMING
E0020040 03 002606 100420 ----- -001- 46      MSTF     O(RA1)
0020041 03 002607 136100 ----- -001- 47      DATA    B(1011110001000000)
0020042 03 002610 003122 -----          48      LN      R5,2
0020043 03 002611 053730 ----- 0017773 49      B      CHKHLTMERGE
    
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0020044          04 UPDOTS
05 # SUBSTATE TO RESET THE SYSTEM STATE AND BEGIN THE OTS UPDATE (IF REQUIRED)
06 TAPUTL OW      0(2612)          #3E790250
-001- 07          NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002612 *****

0020044 03' 002612 137000 114446 0000337 -001- 10 CPATCH2 BGNP      0(337)          #3E790250
-001- 11          BL          XXX1327
-001- 12          NOTE      CPATCH2 'CSECT'
-001- 13          NOTE      ***** PATCH AREA BEGINS AT 000337 *****

0114446          -001- 16 XXX1327 PATCHAREA
0114446 12 000337 151103 -----          17          TBS          N(LENO)(RAO),4          # WAS OFF-LINE ST ERASED ?
0114447 12 000340 055003 ----- 0114452          18          BNC          CLR_MNT          # NO
0114450          19          CALL      ZOSPWDS          # ZERO SPARE WORDS (OD) IN OFF-LINE STORE
0114450 12 000341 037021 006067 INITA -001- 20          BSA          ZOSPWDS
0114452          21          CLR_MNT
0114452          22          CALL      CLRMAINT          # CLEAR TAPE MAINTENANCE STATE
0114452 12 000343 137020 127437 CTAPH -001- 23          BSA          CLRMAINT
0114454          24          ENDP          #3E790250
0114454 12 000345 137000 020046 0002614 -001- 25          BL          XXX1331
-001- 26          NOTE      ***** LAST PATCH ADDRESS USED IS 000346 *****
-001- 27          NOTE      ***** NUMBER OF PATCH WORDS USED IS 8 (DECIMAL) *****

0020046          -001- 30 XXX1331 OWCONTINUE
0020046          31          EOW          #3E790250
-001- 32          NOTE      ***** THE LAST ADDRESS OVERWRITTEN IS 002613 *****
          *

0020046          36          CALL      UQOFLCC          # UNQUARANTINE THE OFFLINE MAS
0020046 03 002614 137020 001240 CBLM -001- 37          BSA          UQOFLCC
0020050          38          CALL      INITOST          # CLEAN UP ?
0020050 03 002616 137020 110443 CSYSUB -001- 39          BSA          INITOST
0020052          40          CALL      WPOST          # SET WRITE-PROTECT IN OFFLINE MAS
0020052 03 002620 137020 110453 CSYSUB -001- 41          BSA          WPOST
0020054          42          CALL      CK_OST
0020054 03 002622 137020 001750 CBLM -001- 43          BSA          CK_OST
0020056 03 002624 150000 017275 0017275 44          BCL          LOMASCOMPL          # SYSTEM IN MANUAL - NO UPDATE NEEDED

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TAPE UTILITY MULTISCAN FUNCTION

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CNRUTL W77D

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01 # AN OTHER TEMPORARY STORE UPDATE IS REQUIRED - SET 1STB BIT AND BEGIN.
02 # FIRST CALL TO 'OTSUPD' MUST BE MADE IMMEDIATELY AFTER CALL TO 'UQOFLCC'
03 # TO PREVENT THE SYSTEM FROM REQUESTING A FULL UPDATE.
04 LI RO,ES(1STB)
05 CALL OTSUPD
0020060 03 002426 003401 000002 -001- 06 BSA OTSUPD
0020062 03 00263D 037020 003173 CBLM -001- 07 B ADVSUBST
0020064 03 002632 153013 ----- 0020077

0020065
11 UPDOTSCONT
12 # SUBSTATE TO CONTINUE UPDATING THE OTS
13 ZR RO
0020065 03 002633 103000 ----- 14 CALL OTSUPD
0020066 03 002634 037020 003173 CBLM -001- 15 BSA OTSUPD
0020070 16 IF RO = 3 THEN B NOADVSUBST # NOT DONE
0020070 03 002636 103405 000003 -002- 17 CI RO,3
0020072 03 00264D 055007 ----- 0020101 -001- 18 BNC NOADVSUBST
19 # UPDATE DONE
20 CALL STOPPSAU # KILL MAS AUDIT BEFORE IT CAN START
0020073 03 002641 037020 003674 CBLM -001- 21 BSA STOPPSAU
0020075 03 002643 137000 017275 0017275 -001- 22 BL LOMASCOMPL # TYPE COMPL MESSAGE

26 TAPUTL OW 0(2645) #3E790260
-001- 27 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002645 *****

0020077
30 ADVSUBST
31 CPATCH7 BGNP 0(233) #3E790260
0020077 03 002645 137000 121471 0000233 -001- 32 BL XXX1346
-001- 33 NOTE CPATCH7 'CSECT'
-001- 34 NOTE ***** PATCH AREA BEGINS AT 000233 *****

0121471
-001- 37 XXX1346 PATCHAREA
0121471 14 000233 137040 010054 0000027 38 A1S TUUTCTL+N(SUBST)
0121473 39 CALL TEMPINH_
0121473 14 000235 037020 147320 BLMA -001- 40 BSA TEMPINH_
0121475 41 ENDP #3E790260
0121475 14 000237 137000 020101 0002647 -001- 42 BL XXX1349
-001- 43 NOTE ***** LAST PATCH ADDRESS USED IS 000240 *****
-001- 44 NOTE ***** NUMBER OF PATCH WORDS USED IS 6 (DECIMAL) *****

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 114

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY MONITOR ROUTINES

CNRUTL W77D

0020101
0020101

-001- 01 XXX1349 OWCONTINUE

02

EOW

#3E790260

-001- 03

NOTE

***** THE LAST ADDRESS OVERWRITTEN IS 002646 *****

*

0020101
0020101

07 NOADVSUBST

08

RETURN 2

C020101 03 002647 156462 -----

-001- 09

BTSAN 2

COMMON NONRESIDENT UTILITIES

PR-1C95A-5D

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 115

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY SUBROUTINES

CNRUTL W77D

```

0020102 01 # DISCRIPTION:
0020102 02 # CHECK IF THE TAPE UTILITY PROGRAM IS ACTIVE AND IDLE
0020102 03
0020102 04 # ENTRY POINT:
0020102 05 # FSTCHK
0020102 06
0020102 07 # ENTRY CONDITIONS:
0020102 08 # NONE
0020102 09
0020102 10 # EXIT CONDITIONS:
0020102 11 # RO = RETURN CODE
0020102 12 # 0-SUCCESS
0020102 13 # RAO = BASE ADDRESS OF THE TAPE UTILITY CONTROL BLOCK
0020102 14 # TTY_RL-FAILURE,TAPE PROGRAM BUSY
0020102 15 # TTY_NG-FAILURE,TAPE UTILITY NOT ACTIVE

0020102 18 FSTCHK
0020102 19 BEGIN ()
0020102 03 002650 130420 043177 CTSD 20 LL R1,OFLUCTL
0020104 03 002652 003425 000002 21 CI R1,TUUTIL # IS TAPE UTILITY PROGRAM ACTIVE
0020106 03 002654 003007 ----- TTYTBL 22 LN RO,TTY_NG
0020107 03 002655 055007 ----- 0020116 23 BNC RTN
0020110 03 002656 031020 010052 0010052 24 LAL R1,TUUTCTL,RAO
0020112 03 002660 003000 ----- 25 ZR RO
0020113 03 002661 014021 ----- 26 TZ R1 # IS TAPE UTILITY PROGRAM BUSY
0020114 03 002662 054002 ----- 0020116 27 BC RTN
0020115 03 002663 003006 ----- TTYTBL 28 LN RO,TTY_RL
0020116 29 RTN
0020116 30 RETURN
0020116 03 002664 156400 ----- -001- 31 BYSA

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 116

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY SUBROUTINES

CNRUTL W77D

```

0020117 01 # DISCRPTION:
0020117 02 # CHECK, CONVERT, VERIFY AND STORE TTY DATA IN CONTROL BLOCK
0020117 03
0020117 04 # ENTRY POINT:
0020117 05 # STORTBT
0020117 06
0020117 07 # ENTRY CONDITIONS:
0020117 08 # R6=TAPE NUMBER
0020117 09 # R8=TRACK NUMBER
0020117 10 # R9=BLOCK NUMBER
0020117 11 # RAO=TUUTCTL+0
0020117 12
0020117 13 # EXIT CONDITIONS:
0020117 14 # RO=RETURN CODE
0020117 15 # 0-SUCCESS
0020117 16 # BKNO--CONTAINS VALID TRACK AND BLOCK NUMBER
0020117 17 # TPNO--CONTAINS VALID TAPE NUMBER
0020117 18 # RAO--POINTS TO UTILITY CONTROL BLOCK
0020117 19 # TTY_NG-FAILED CHECKS

0020117 22 STORTBT
0020117 23 BEGIN ( )
0020117 03 002645 106006 ----- 24 LR RO,R6 # LOAD TAPE NUMBER INTO RO
0020120 03 002666 014000 ----- 25 TZ RO # WAS NUMBER TYPED AT TTY
0020121 03 002667 054035 ----- 0020156 26 BC NGBACK
0020122 27 CALL BCDXBIN # CONVERT TAPE NUMBER TO BINARY
0020122 03 002670 073030 ----- -001- 28 BSAI BXCDBIN # SUBROUTINE BCDXBIN IS IN PROGRAM CSYSUB
0020123 03 002671 130422 020006 TDATA 29 LL R1,TAPETBL # LOAD R1 WITH MAX NUMBER OF TAPES
0020125 03 002673 004037 ----- 30 SN R1,1
0020126 03 002674 005020 ----- 31 SR R1,RO # IS TAPE NUMBER WITHIN LIMITS
0020127 03 002675 055027 ----- 0020156 32 BNC NGBACK # NO
0020130 03 002676 044006 ----- 33 ST RO,N(TPNO)(RAO) # STORE TAPE NUMBER AT LOCATION TPNO
0020131 03 002677 006011 ----- 34 LR RO,R9 # LOAD RO WITH BLOCK NUMBER
0020132 03 002700 014000 ----- 35 TZ RO # WAS NUMBER TYPED AT TTY
0020133 03 002701 054023 ----- 0020156 36 BC NGBACK
0020134 37 CALL BCDXBIN
0020134 03 002702 073030 ----- -001- 38 BSAI BXCDBIN # SUBROUTINE BCDXBIN IS IN PROGRAM CSYSUB
0020135 03 002703 106220 ----- 39 LR R9,RO # SAVE BLOCK NUMBER FOR LATER USE
0020136 03 002704 003421 000527 MASACS 40 LI R1,BLKMAX # MAXIMUM BLOCK NUMBER
0020140 03 002706 005020 ----- 41 SR R1,RO # IS BLKS REQUESTED GREATER THAN MAX BLKS
0020141 03 002707 055015 ----- 0020156 42 BNC NGBACK # IF GREATER CF=0 IF LESS CF=1
0020142 03 002710 006010 ----- 43 LR RO,R8 # LOAD RO WITH TRACK NUMBER
0020143 44 CALL BCDXBIN
0020143 03 002711 073030 ----- -001- 45 BSAI BXCDBIN # SUBROUTINE BCDXBIN IS IN PROGRAM CSYSUB
0020144 03 002712 114000 ----- 46 TZ RO # IF RO=0 NONEXISTING TRACK
0020145 03 002713 054011 ----- 0020156 47 BC NGBACK
0020146 03 002714 004017 ----- 48 SN RO,1
0020147 03 002715 006020 ----- 49 LR R1,RO # CHECK TRACK LIMITS

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY SUBROUTINES

CNRUTL W77D

0020150 03 002716 004034 -----	01	SN	R1,4	# WAS NUMBER OF TRACKS GREATER THAN 4
0020151 03 002717 054005 ----- 0020156	02	BC	NGBACK	# IF GREATER CF=0 IF LESS CF=1
0020152 03 002720 010405 -----	03	RLN	RO,S(TRCK)	# POSITION TRACK NUMBER IN UPPER BITS
0020153 03 002721 014620 -----	04	OR	R9,RO	# TRACK IN UPPER BITS,BLOCK IN LOWER
0020154 03 002722 044221 -----	05	ST	R9,N(BKNO)(RAD)	# STORE TRACK AND BLOCK NUMBER AT BKNO
0020155	06	RETURN	0	
0020155 03 002723 056460 -----	-001- 07	BTSAN	0	
0020156	08	NGBACK		
0020156	09	RETURN	TTY_NG	
0020156 03 002724 156467 ----- TTYTBL	-001- 10	BTSAN	TTY_NG	

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 118

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY SUBROUTINES

CNRUTL W77D

```

0020157 01 # DISCRPTION
0020157 02 # SERCHES THE DIRECTORY FILE FOR THE NAME OF
0020157 03 # THE FILE TO BE COPIED
0020157 04
0020157 05 # ENTRY POINT
0020157 06 # DIRSER
0020157 07
0020157 08 # ENTRY CONDITIONS
0020157 09 # RAO--POINTS TO TAPE UTILITY CONTROL BLOCK
0020157 10
0020157 11 # EXIT CONDITIONS
0020157 12 # R1--CONTAINS THE STARTING TRACK AND AND BLOCK
0020157 13 # NUMBER OF FILE IF FOUND
0020157 14 # R2--WILL CONTAIN THE ENDING TRACK AND BLOCK NUMBER
0020157 15 # RO = RETURN CODE
0020157 16 # 0-SUCCESS NONZERO-FAILURE
0020157 17 # RAO--POINTS TO TAPE UTILITY CONTROL BLOCK

0020157 19 DIRSER
0020157 20 BEGIN ( )
0020157 03 002725 103001 ----- 21 LN RO,1 # WORD COUNT
0020160 03 002726 041024 ----- 22 LA R1,4(RAO) # GET FIRST TWO CHARACTERS OF FILE NAME
0020161 03 002727 031440 045270 LAYOUT 23 LAL R2,I_OBUF+2,RA1 # SET RA1 TO IOBUF AND GET 1ST TWO CHAR
0020163 24 CMPCH # COMPARE CHARACTERS
0020163 03 002731 120022 ----- 25 CR R1,R2
0020164 03 002732 055025 ----- 0020211 26 BNC TRYNX
0020165 27 RDNX # READ NEXT
0020165 03 002733 141021 ----- 28 LA R1,1(RAO) # GET NEXT TWO CHARACTERS
0020166 03 002734 041441 ----- 29 LA R2,1(RA1)
0020167 03 002735 020022 ----- 30 CR R1,R2
0020170 03 002736 055012 ----- 0020202 31 BNC STRTOV
0020171 03 002737 004401 ----- 32 AN RO,1
33 TAPUTL OW 0(2740) # 12649
-001- 34 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002740 *****

0020172 03 002740 024002 ----- 37 TBN RO,2 # HAS 8 CHAR BEEN READ ?
0020173 38 EOW # 12649
-001- 39 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002740 *****
*

0020173 03 002741 055772 ----- 0020165 43 BNC RDNX
0020174 03 002742 031100 010052 0010052 44 LAL R4,TUUTCTL,RAO # REPOSITION RAO
0020176 03 002744 041441 ----- 45 LA R2,1(RA1) # ENDING TRACK AND BLOCK
0020177 03 002745 041421 ----- 46 LA R1,1(RA1) # STARTING TRACK AND BLOCK
0020200 03 002746 003000 ----- 47 ZR RO
0020201 48 GOBAK
0020201 49 RETURN

```

COMMON NONRESIDENT UTILITICS

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 119

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY SUBROUTINES

CNRUTL W77D

```

0020201 03 002747 156400 ----- -001- 01      BTSA
                                03 TAPUTL OW      0(2750)          # 12649
-001- 04      NOTE      ***** THE FIRST ADDRESS OVERWRITTEN IS 002750 *****

0020202                                07 STRTOV          # START OVER
0020202 03 002750 131020 010056 0010056 08      LAL      R1,TUCOPYCTL+4,RA0 # REPOSITION RAO
0020204 03 002752 003126 ----- 09      LN      R5,6
0020205 03 002753 005120 ----- 10      SR      R5,RO          # NO. OF WRDS TO NEXT FILE NAME IN IOBUF
0020206 03 002754 043445 ----- 11      LAX     R2,R5(RA1)      # REPOSITION RA1 TO NEXT FILE NAME IN IOBUF
0020207 03 002755 003001 ----- 12      LN      RD,1          # START NEW WRD COUNT
0020210 03 002756 053753 ----- 0020163 13      B      CMPCH
0020211                                14      EOW     # 12649
-001- 15      NOTE      ***** THE LAST ADDRESS OVERWRITTEN IS 002756 *****
                                *

0020211                                19 TRYNX
0020211 03 002757 114042 ----- 20      TZ      R2
0020212 03 002760 054767 ----- 0020201 21      BC      GOBAK
0020213 03 002761 041446 ----- 22      LA      R2,6(RA1)      # GET 1ST TWO CHARACTERS IN NEXT FILE
0020214 03 002762 053747 ----- 0020163 23      B      CMPCH

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 120

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY ABORT FUNCTION

CNRUTL W77D

0020215

01 ABORTTU

02 # THIS SUBSECTION WILL CLEANLY TERMINATE THE TAPE UTILITY PROGRAM
 03 # REGARDLESS OF ITS CURRENT OPERATION. IF A TAPE FILE IS OPEN AND
 04 # A TAPE OPERATION IN PROGRESS, THE FILE WILL BE CLOSED AFTER THE
 05 # OPERATION HAS FINISHED. IN ALL CASES, THE ROUTINE WILL ABORT
 06 # MULTISCAN FUNCTION TRANSFERS AND OUTPUT THE 'TAPEUTIL STOPPED' MESSAGE.
 07 # IN ADDITION, OTHER FUNCTIONS ARE PERFORMED DEPENDING
 08 # UPON THE ROUTINE BEING ABORTED. IF THE TAPE AUDIT IS ABORTED,
 09 # THE AUDITED TAPE IS TAKEN BACK OUT OF SERVICE IF IT WAS ORIGINALLY
 10 # OUT OF SERVICE. IF THE OFF-LINE MAIN STORE RELOAD FROM TAPE IS ABORTED,
 11 # A REQUEST IS MADE TO UPDATE THE OMAS.

0020215				15	CALL	ALWERRCV	# ALLOW ERROR RECOVERY
0020215	03	002763	137020	127444	CTAPH	-001- 16	BSA ALWERRCV
						17	STATST TAPUCLNT
0020217	03	002765	173047	-----		-002- 18	BSAI RXEQR # SUBROUTINE REQR IS IN PROGRAM CTAPH
0020220	03	002766	012300	-----		-001- 19	VFD 5,TAPUCLNT 4,STATST 1,1 1,0 5,0
0020221	03	002767	156000	-----		20	BPAX RO
0020222	03	002770	153004	-----	0020226	21	B CONTABT
0020223	03	002771	153003	-----	0020226	22	B CONTABT
0020224						23	CALL WAIT
0020224	03	002772	173025	-----		-001- 24	BSAI WXAIT # SUBROUTINE WAIT IS IN PROGRAM CBLM
0020225	03	002773	153770	-----	0020215	25	B ABORTTU
0020226						26	CONTABT
						27	CLOSE TAPUCLNT
0020226	03	002774	173047	-----		-002- 28	BSAI RXEQR # SUBROUTINE REQR IS IN PROGRAM CTAPH
0020227	03	002775	011300	-----		-001- 29	VFD 5,TAPUCLNT 4,CLOSE 1,1 1,0 5,0
0020230	03	002776	103000	-----		30	ZR RO
0020231	03	002777	034400	043177	CTSD	31	STL RO,OFUCLT # CLEAR TAPEUTIL NRP MSF NUMBER.
						33	# TAKE CARE OF SPECIAL ABORT CASES
0020233	03	003001	031000	010052	0010052	34	LAL RO,TUUTCTL,RAO
0020235	03	003003	003405	000007		35	CI RO,AUDITFN
0020237						36	IF CF = 1 THEN RGBEGIN
0020237	03	003005	055013	-----	0020252	-001- 37	BNC IFS1388
0020240	03	003006	040023	-----		38	L R1,N(LENO)(RAO) # RESTORE TAPE STATUS
0020241	03	003007	031400	043337	CTSD	39	LAL RO,TUSTAT,RA1
0020243	03	003011	040046	-----		40	L R2,N(TPNO)(RAO)
0020244	03	003012	010442	-----		41	RRN R2,W(TAPNO)
0020245	03	003013	003442	000003		42	NI R2,M(TAPNO)
						43	TAPUTL OW 0(3015) # 13059
						-001- 44	NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 003015 *****

COMMON NONRESIDENT UTILITIES

PR-1C954-50

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY ABORT FUNCTION

CNRUTL W77D

```

0020247 03 003015 043502 ----- 01          LAX      R4,R2(RA1)
0020250 03 003016 002420 054000      02          STM      R1,O(RA1),M(TSTATE)+M(COMPROK)+M(REDON)
0020252                                03          EOW      # 13059
                                -001- 04          NOTE     ***** THE LAST ADDRESS OVERWRITTEN IS 003017
                                *****

0020252                                08          RGEND
0020252                                -001- 09 IFS1388

                                11 # ON NORMAL EXIT, UTCTL IS ZEROED BEFORE 'ABORTTU'
0020252                                12          IF      TUUTCTL+N(UTCTL) = LOMASFN THEN RGBEGIN
0020252 03 003020 130400 010052 0010052 -002- 13          LL      RO,TUUTCTL+N(UTCTL)
0020254 03 003022 003404 000012      -002- 14          XI      RO,LOMASFN
0020256 03 003024 055010 ----- 0020266 -001- 15          BNC     IFS1394

0020257                                17          CALL    WPOST
0020257 03 003025 037020 110453 CSYSUB -001- 18          BSA     WPOST
0020261                                19          CALL    CK_OST
0020261 03 003027 137020 001750 CBLM    -001- 20          BSA     CK_OST
0020263                                21          IF      CF = 0 THEN CALL UPDOMAS
0020263 03 003031 154003 ----- 0020266 -001- 22          BC      IFS1398
0020264 03 003032 037020 003332 CBLM    -002- 23          BSA     UPDOMAS
0020266                                -001- 24 IFS1398
0020266                                25          RGEND
0020266                                -001- 26 IFS1394

                                28 # ON NORMAL EXIT, UTCTL IS ZEROED BEFORE 'ABORTTU'
0020266                                29          IF      TUUTCTL+N(UTCTL) = LOMASBTFN THEN RGBEGIN
0020266 03 003034 130400 010052 0010052 -002- 30          LL      RO,TUUTCTL+N(UTCTL)
0020270 03 003036 003404 000013      -002- 31          XI      RO,LOMASBTFN
0020272 03 003040 055016 ----- 0020310 -001- 32          BNC     IFS1401
0020273                                33

                                # IN NORMAL EXIT, UTCTL IS ZEROED BEFORE
                                # 'ABORTTU'
                                35 TAPUTL  OW      0(3041)      # 13536
                                -001- 36          NOTE     ***** THE FIRST ADDRESS OVERWRITTEN IS 003041
                                *****

0020273 03 003041 037000 114205 0000076 -001- 40 CPATCH2  BGNP    0(76)      # 13536
                                -001- 41          BL      XXX1405
                                -001- 42          NOTE    CPATCH2 'CSECT'
                                -001- 43          NOTE    ***** PATCH AREA BEGINS AT 000076 *****
                                *

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 122

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY ABORT FUNCTION

CNRUTL W77D

```

0114205 -001- 01 XXX1405 PATCHAREA
0114205 02 CALL CLRMAINT
0114205 12 000076 137020 127437 CTAPH -001- 03 BSA CLRMAINT
0114207 04 CALL INITTAPE
0114207 12 000100 137020 126162 CTAPH -001- 05 BSA INITTAPE
0114211 06 ENDP # 13536
0114211 12 000102 137000 020275 0003043 -001- 07 BL XXX1409
-001- 08 NOTE ***** LAST PATCH ADDRESS USED IS 000103 *****
*
-001- 10 NOTE ***** NUMBER OF PATCH WORDS USED IS 6 (DECIMAL) *****

0020275 -001- 13 XXX1409 OWCONTINUE
0020275 14 EOW # 13536
-001- 15 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 003042
*****

0020275 19 CALL INIT_OCC # STOP BOOTSTRAP
0020275 03 003043 137020 111240 CSYSUB -001- 20 BSA INIT_OCC
0020277 21 CALL WPOST # WRITE PROTECT OMAS
0020277 03 003045 137020 110453 CSYSUB -001- 22 BSA WPOST
0020301 23 CALL UQOFLCC # RETURN OMAS TO NORMAL
0020301 03 003047 137020 001240 CBLM -001- 24 BSA UQOFLCC
0020303 25 CALL CK_OST
0020303 03 003051 137020 001750 CBLM -001- 26 BSA CK_OST
-001- 27 TAPUTL OW #3E800147
-001- 28 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 003053
*****

0020305 32 IF CF = 0 THEN CALL UPDOMAS
0020305 03 003053 154003 ----- 0020310 -001- 33 BC IFS1419
0020306 03 003054 037020 003332 CBLM -002- 34 BSA UPDOMAS
0020310 35 IFS1419
0020310 36 EOW #3E800147
-001- 37 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 003055
*****

0020310 41 RGEND
0020310 -001- 42 IFS1401

0020310 03 003056 140140 -----
44 # PRINT STOPPED MESSAGE
45 L R6,N(UTCTL)+0(RAO) # PRINT OUT ABORT MESSAGE.
46 TAPUTL OW 0(3057) # 13059
-001- 47 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 003057 *****

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY ABORT FUNCTION

CNRUTL W77D

```

0020311 03 003057 037000 113700 0001116 -001- 01 CPATCH1 BGNP 0(1116) # 13059
-001- 02 BL XXX1426
-001- 03 NOTE CPATCH1 'CSECT'
-001- 04 NOTE ***** PATCH AREA BEGINS AT 001116 *****

0113700 -001- 07 XXX1426 PATCHAREA
0113700 11 001116 103160 ----- 08 ZR R7
0113701 11 001117 044160 ----- 09 ST R7,N(UTCTL)(RAO) # ZERO OUT FUNCTION CODE
0113702 11 001120 040161 ----- 10 L R7,N(UTCTL)+1(RAO)
0113703 11 001121 040202 ----- 11 L R8,N(UTCTL)+2(RAO)
0113704 12 ENDP # 13059
0113704 11 001122 037000 020313 0003061 -001- 13 BL XXX1428
-001- 14 NOTE ***** LAST PATCH ADDRESS USED IS 001123 *****
-001- 15 NOTE ***** NUMBER OF PATCH WORDS USED IS 6 (DECIMAL) *****

0020313 -001- 18 XXX1428 OMCONTINUE
0020313 03 003061 140223 ----- 19 L R9,N(UTCTL)+3(RAO)
0020314 20 EOW # 13059
-001- 21 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 003061 *****
*

-001- 25 TAPUTL OW 0(3062) # 11845
-001- 26 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 003062 *****

0020314 29 PRINT FMT=(WRD(T,A,P,E,U,T,I,L),WRD(S,T,O,P,P,E,D),DEC,L_X,DEC,L_X)

-001- 31 # MESSAGE PROTOTYPE
-001- 32 # mm TAPEUTIL STOPPED dddd xxxx dddd xxxx
-002- 33 BSAI PXMRY # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
0020314 03 003062 073053 ----- 002- 34 VFD 1,1 2,0 1,0 3,0 1,0 1,1 1,0 2,0 1,0 3,0
0020315 03 003063 100200 ----- 002- 35 VFD 4,TTYO_L_X 4,TTYO_DEC 4,TTYO_L_X 4,TTYO_DEC
0020316 03 003064 062144 ----- 002- 36 VFD 4,TTYO_4,TTYO_4,TTYO_4,TTYO_
0020317 03 003065 021042 ----- 002- 37 VFD 5,2 11,tapeUtil
0020320 03 003066 010246 ----- TTYTBL 002- 38 VFD 5, 11,SXTOPPED
0020321 03 003067 000346 ----- TTYTBL 001- 39 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS R6,R7,R8,R9,
0020322 41 EOW # 11845
-001- 42 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 003067 *****
*
```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 124

C01

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY ABORT FUNCTION

CNRU^TL W77D

0020322
0020322 03 003070 156463 -----

01
-001- 02

RETURN 3
BTSAN 3

STOP MSF TRANSFERS

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 125

TAPE UTILITY MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TAPE UTILITY PATCH AREA

CNRUTL W77D

0020323
0020323

01	DDELETE NOTE	1
02	BSS	100
03	TUPATCH	
04	DINSERT NOTE	' DO .TUPATCH I=1,100

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 126

OFF-LINE REGISTER DUMP MULTISCAN FUNCTION

0:32:20 2/06/81 ****

CNRUTL W77D

01 # THIS UTILITY PROGRAM PRINTS THE CONTENTS OF THE OFF-LINE REGISTERS
 02 # IN THE FOLLOWING FORMAT

04 #	RO	R1	R2	R3	R4	R5	R6	R7
05 #	R8	R9	R10	R11	R12	R13	R14	R15
06 #	DI	DK	HG	IB	IM	IS	MS	SDR
07 #	SDR1	SIR	SIR1	0000	0000	0000	0000	0000
08 #	AI	AK	AR	BR				
09 #	CR	PA	RAR	SAR				

12 # THE OFF-LINE PROCESSOR IS PUT IN THE MAINTENANCE STOP MODE AND
 13 # THE REGISTERS ARE GATED TO THE MAINTENANCE CHANNEL AND TRANSMITTED TO
 14 # THE ON-LINE PROCESSOR. THEY ARE STORED IN THE 'REGBUF' SCRATCH AREA
 15 # FOR PRINTOUT. THE OFF-LINE PROCESSOR IS THEN RESTORED TO AN APPROPRIATE
 16 # STATE.

```

0022611          20 ENTRDPRG CSECT
0022611          21          BEGIN      ( )
0022611          22          IF        ABTB THEN RGBEGIN
0022611 04 000000 124000 ----- -004- 23          TBN      ABTB,S(ABTB)
0022612 04 000001 055012 ----- 0022624 -002- 24          BNC      IFS1455
0022613          25 ABORT
0022613          26          PRINT     FMT=(WRD(D,M,P),WRD(R,E,G),WRD(O,F,L),WRD(S,T,O,P,E,D)),PRI
                                OR=2,PACTION=A

-001- 29 # MESSAGE PROTOTYPE
-001- 30 # A mm          DMP REG OFL STOPPED
0022613 04 000002 173053 ----- -002- 31          BSAI     PXMRY          # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
0022614 04 000003 101240 ----- -002- 32          VFD     1,1 2,0 1,0 3,1 1,0 1,1 1,0 2,2 1,0 3,0
0022615 04 000004 021000 ----- -002- 33          VFD     4,TTYO_ 4,TTYO_ 4,TTYO_WRD 4,TTYO_WRD
0022616 04 000005 021042 ----- -002- 34          VFD     4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_
0022617 04 000006 020016 ----- TTYTBL -002- 35          VFD     5,4 11,DXMP
0022620 04 000007 000215 ----- TTYTBL -002- 36          VFD     5, 11,RXEG
0022621 04 000010 001175 ----- TTYTBL -002- 37          VFD     5, 11,OXFL
0022622 04 000011 000346 ----- TTYTBL -002- 38          VFD     5, 11,SXTOPPED
-001- 39          NOTE     THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
                                CONTAINED IN GENERAL REGISTERS

0022623          41          RETURN   3
0022623 04 000012 156463 ----- -001- 42          BTSAN   3
0022624          43          RGEND
0022624          -001- 44 IFS1455
  
```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 127

OFF-LINE REGISTER DUMP MULTISCAN FUNCTION

0:32:20 2/06/81 ****

CNRUTL W77D

```

0022624          01          IF 1STB THEN RGB:GIN
0022624 04 000013 124001 ----- -004- 02 TBN 1STB,S(1STB)
0022625 04 000014 055071 ----- 0022716 -002- 03 BNC IFS1477
0022626          04          LMCH MSTOP
0022626 04 000015 003401 000321 -001- 05 LI RO,MSTOP
0022630          04          CALL SMCH
0022630 04 000017 073027 ----- -002- 07 BSAI SXMCH # SUBROUTINE SMCH IS IN PROGRAM CSYSUB
0022631 04 000020 131000 010052 0010052 08 LAL RO,REGBUF,RAO # BUFFER TO STORE REGISTER VALUES
0022633 04 000022 031400 023001 0023001 09 LAL RO,RTNTBL16,RA1 # TABLE OF MICRO INSTRUCTIONS TO GET
# OFF-LINE 16 BIT REGISTERS

0022635 04 000024 003421 000037          11 LI INDEX,31
0022637          12          GTNXT16
0022637 04 000026 142441 -----          13 LX R2,INDEX(RA1)
0022640 04 000027 067402 -----          14 LSR MCHTR,R2 # LOAD MICROINSTRUCTION INTO MCH
0022641          15          LMCH LDMIRL # GATE REGISTER INTO OFF-LINE MCHB
0022641 -001- 16 CALL SLDMIRL
0022641 04 000030 037020 111075 CSYSUB -002- 17 BSA SLDMIRL
0022643          18          LMCH RTNMCHB # TRANSMIT TO ON-LINE
0022643 04 000032 103401 000261 -001- 19 LI RO,RTNMCHB
0022645          20          CALL SMCH
0022645 04 000034 073027 ----- -002- 21 BSAI SXMCH # SUBROUTINE SMCH IS IN PROGRAM CSYSUB
0022646 04 000035 112403 -----          22 UNPK MCHB
0022647 04 000036 046061 -----          23 STX R3,INDEX(RAO)
0022650 04 000037 036020 022637 0022637 24 BX INDEX,GTNXT16
0022652 04 000041 031000 010112 0010112 25 LAL RO,REGBUF+32,RAO
0022654 04 000043 031400 023041 0023041 26 LAL RO,RTNTBL20,RA1 # TABLE OF MICRO INSTRUCTIONS TO GET
# OFF-LINE 20 BIT REGISTERS

0022656 04 000045 003421 000007          28 LI INDEX,7
0022660          29          GTNXT20
0022660 04 000047 142441 -----          30 LX R2,INDEX(RA1)
0022661 04 000050 007402 -----          31 LSR MCHTR,R2 # LOAD MICROINSTRUCTION INTO MCH
0022662          32          LMCH LDMIRL # GATE REGISTER INTO OFF-LINE MCHB
0022662 -001- 33 CALL SLDMIRL
0022662 04 000051 037020 111075 CSYSUB -002- 34 BSA SLDMIRL
0022664          35          LMCH RTNMCHB # TRANSMIT TO ON-LINE
0022664 04 000053 103401 000261 -001- 36 LI RO,RTNMCHB
0022666          37          CALL SMCH
0022666 04 000055 073027 ----- -002- 38 BSAI SXMCH # SUBROUTINE SMCH IS IN PROGRAM CSYSUB
0022667 04 000056 112403 -----          39 UNPK MCHB
0022670 04 000057 006101 -----          40 LR R4,INDEX
0022671 04 000060 010517 -----          41 RLN R4,1 # ALLOW FOR 20 BIT ENTRIES
0022672 04 000061 046044 -----          42 STX R2,R4(RAO) # STORE UPPER 4 BITS
0022673 04 000062 004501 -----          43 AN R4,1
0022674 04 000063 046064 -----          44 STX R3,R4(RAO) # STORE LOW 16 BITS
0022675 04 000064 036020 022660 0022660 45 BX INDEX,GTNXT20
0022677          46          CALL INIT_OCC # PUT OFF-LINE CC BACK IN THE HALT LOOP
0022677 04 000066 037020 111240 CSYSUB -001- 47 BSA INIT_OCC

```

COMMON NONRESIDENT UTILITIES

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OFF-LINE REGISTER DUMP MULTISCAN FUNCTION

0:32:20 2/06/81 ****

CNRUTL W77D

```

0022701          01 # PRINT HEADER
                02          PRINT  FMT=(WRD(D,M,P),WRD(R,E,G),WRD(O,F,L)),LINK=YES,PRIOR=3,PACTI
                                ON=M

-001- 05 # MESSAGE PROTOTYPE
-001- 06 #          M mm      DMP REG OFL
0022701 04 000070 173053 ----- -002- 07          BSAI    PXMRY      # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
0022702 04 000071 102270 ----- -002- 08          VFD    1,1 2,0 1,0 3,2 1,0 1,1 1,0 2,3 1,1 3,0
0022703 04 000072 021040 ----- -002- 09          VFD    4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_WRD
0022704 04 000073 021042 ----- -002- 10          VFD    4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_
0022705 04 000074 014016 ----- TTYTBL -002- 11          VFD    5, 3 11,DXMP
0022706 04 000075 000215 ----- TTYTBL -002- 12          VFD    5, 11,RXEG
0022707 04 000076 001175 ----- TTYTBL -002- 13          VFD    5, 11,OXFL
-001- 14          NOTE    THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
                                CONTAINED IN GENERAL REGISTERS
-001- 16          NOTE    THIS IS THE FIRST SEGMENT OF A LINKED MESSAGE
0022710 04 000077 134400 043102 CTSD 17          STL    RO,LINKWRD
0022712 04 000101 003000 ----- 18          ZR    RO
0022713 04 000102 034400 043103 CTSD 19          STL    RO,RGCOUNT
0022715          20          RETURN 2
0022715 04 000104 056462 ----- -001- 21          BTSAN 2
0022716          22          RGEND
0022716          -001- 23 IFS1477

0022716 04 000105 130400 043102 CTSD 27          LL    RO,LINKWRD
0022720          28          CALL   LINKRDY
0022720 04 000107 037021 125021 TTYAPP -001- 29          BSA    LINKRDY
0022722 04 000111 156000 ----- 30          BPAX   RO
0022723 04 000112 153670 ----- 0022613 31          B      ABORT
0022724          32          RETURN 2          # LINK NOT READY
0022724 04 000113 156462 ----- -001- 33          BTSAN 2
0022725 04 000114 130520 043103 CTSD 34          LL    RGCOUNTR,RGCOUNT
0022727 04 000116 006005 ----- 35          LR    RO, RGCOUNTR
0022730 04 000117 004410 ----- 36          AN    RO, 8          # INCREMENT COUNTER
0022731 04 000120 034400 043103 CTSD 37          STL    RO, RGCOUNT
0022733 04 000122 031400 010052 0010052 38          LAL   RO, REGBUF, RA1
0022735 04 000124 001765 ----- 39          AR    R15, RGCOUNTR
0022736 04 000125 055002 ----- 0022740 40          BNC   NOFLOW
0022737 04 000126 004741 ----- 41          AN    R14, 1
0022740          42          NOFLOW
0022740          43          CALL   GETRG
0022740 04 000127 137020 023051 0023051 -001- 44          BSA    GETRG
0022742 04 000131 130400 043102 CTSD 45          LL    RO, LINKWRD
0022744 04 000133 024125 ----- 46          TBN   RGCOUNTR, 5          # 16 BIT REGISTERS DONE
0022745 04 000134 055025 ----- 0022772 47          BNC   NXT16
0022746 04 000135 024124 ----- 48          TBN   RGCOUNTR, 4          # LAST LINK
0022747 04 000136 054010 ----- 0022757 49          BC    LASTLNK

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

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OFF-LINE REGISTER DUMP MULTISCAN FUNCTION

0:32:20 2/06/81 ****

CNRUTL W77D

```

0022750          01          # -20 BIT REGISTERS TO BE PRINTED, NOT LAST
                                LINK
0022750          03          LPRINT FMT=(WRD(CR,LF),WRD(SP,SP,SP,SP),H_C,L_X,H_C,L_X,H_C,L_X,H_C,L_X
                                ),PRIOR=3,LINK=YES,ZSPRS=NO

-001- 06 # MESSAGE PROTOTYPE
-001- 07 # CRLF SPSPPSPSP xxxxx xxxxx xxxxx xxxxx
0022750 04 000137 073054 ----- -002- 08 BSAI LXPMPRY # SUBROUTINE LPMRY IS IN PROGRAM TTYAPP
0022751 04 000140 110270 ----- -002- 09 VFD 1,1 2,0 1,1 3,0 1,0 1,1 1,0 2,3 1,1 3,0
0022752 04 000141 062545 ----- -002- 10 VFD 4,TTYO_L_X 4,TTYO_H_C 4,TTYO_L_X 4,TTYO_H_C
0022753 04 000142 062745 ----- -002- 11 VFD 4,TTYO_L_X 4,TTYO_H_C 4,TTYO_L_X 4,TTYO_H_C
0022754 04 000143 010000 ----- TTYTBL -002- 12 VFD 5,2 11,qt
0022755 04 000144 000000 ----- TTYTBL -002- 13 VFD 5, 11,zzzz
-001- 14 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
                                CONTAINED IN GENERAL REGISTERS R6,R7,R8,R9,R10,R11,R12,R13,
-001- 16 NOTE THIS IS A SEGMENT OF A LINKED MESSAGE
0022756          17 RETURN 2 # RETURN TO BLM
0022756 04 000145 156462 ----- -001- 18 BTSAN 2
0022757          19 LASTLNK # LAST LINK, PRINT HEADER
0022757          20 LPRINT FMT=(WRD(CR,LF),WRD(SP,SP,SP,SP),WRD(D,M,P),WRD(R,E,G),WRD(O,F,L
                                ),WRD(C,O,M,P,L)),PRIOR=3,PACTION=M

-001- 23 # MESSAGE PROTOTYPE
-001- 24 # M CRLF SPSPPSPSP DMP REG OFL COMPL
0022757 04 000146 173054 ----- -002- 25 BSAI LXPMPRY # SUBROUTINE LPMRY IS IN PROGRAM TTYAPP
0022760 04 000147 102260 ----- -002- 26 VFD 1,1 2,0 1,0 3,2 1,0 1,1 1,0 2,3 1,0 3,0
0022761 04 000150 000000 ----- -002- 27 VFD 4,TTYO_WRD 4,TTYO_WRD 4,TTYO_WRD 4,TTYO_WRD
0022762 04 000151 021042 ----- -002- 28 VFD 4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_
0022763 04 000152 030000 ----- TTYTBL -002- 29 VFD 5,6 11,qt
0022764 04 000153 000000 ----- TTYTBL -002- 30 VFD 5, 11,zzzz
0022765 04 000154 000016 ----- TTYTBL -002- 31 VFD 5, 11,DAMP
0022766 04 000155 000215 ----- TTYTBL -002- 32 VFD 5, 11,RXEG
0022767 04 000156 001175 ----- TTYTBL -002- 33 VFD 5, 11,OXFL
0022770 04 000157 000302 ----- TTYTBL -002- 34 VFD 5, 11,CXOMPL
-001- 35 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
                                CONTAINED IN GENERAL REGISTERS
-001- 37 NOTE THIS IS THE LAST SEGMENT OF A LINKED MESSAGE
0022771          38 RETURN 3 # FINAL FINISH
0022771 04 000160 156463 ----- -001- 39 BTSAN 3

0022772          43 NXT16
0022772          44 LPRINT FMT=(WRD(CR,LF),WRD(SP,SP,SP,SP),L_X,L_X,L_X,L_X,L_X,L_X,L_X,L_X
                                ),PRIOR=3,LINK=YES,ZSPRS=NO

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 130

OFF-LINE REGISTER DUMP MULTISCAN FUNCTION

0:32:20 2/06/81 ****

CNRUTL W77D

```

-001- 01 # MESSAGE PROTOTYPE
-001- 02 # CRLF SPSPPSP xxx xxx xxx .xxx xxx xxx: xxx xxx
-002- 03 BSAI LxPMRY # SUBROUTINE LPMRY IS IN PROGRAM TTYAPP
0022772 04 000161 173054 ----- -002- 04 VFD 1,1 2,0 1,1 3,0 1,0 1,1 1,0 2,3 1,1 3,0
0022773 04 000162 110270 ----- -002- 05 VFD 4,TTYO_L_X 4,TTYO_L_X 4,TTYO_L_X 4,TTYO_L_X
0022774 04 000163 063146 ----- -002- 06 VFD 4,TTYO_L_X 4,TTYO_L_X 4,TTYO_L_X 4,TTYO_L_X
0022775 04 000164 063146 ----- -002- 07 VFD 5,2 11,qt
0022776 04 000165 010000 ----- TTYTBL -002- 08 VFD 5, 11,zzzz
0022777 04 000166 000000 ----- TTYTBL -001- 09 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS R6,R7,R8,R9,R10,R11,R12,R13,
-001- 11 NOTE THIS IS A SEGMENT OF A LINKED MESSAGE
0023000 -001- 12 RETURN 2
0023000 04 000167 156462 ----- -001- 13 BTSAN 2

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 131

OFF-LINE REGISTER DUMP MULTISCAN FUNCTION

0:32:20 2/06/81 ****

CNRUTL W77D

0023001

01 RTNTBL16

TABLE OF MICRO INSTRUCTIONS TO RETRIEVE
16 BIT REGISTERS

0023001	04	000170	114523	-----	03	VFD	8,MCHBXT	8,ROXT
0023002	04	000171	114525	-----	04	VFD	8,MCHBXT	8,R1XT
0023003	04	000172	114526	-----	05	VFD	8,MCHBXT	8,R2XT
0023004	04	000173	114531	-----	06	VFD	8,MCHBXT	8,R3XT
0023005	04	000174	114532	-----	07	VFD	8,MCHBXT	8,R4XT
0023006	04	000175	114534	-----	08	VFD	8,MCHBXT	8,R5XT
0023007	04	000176	114543	-----	09	VFD	8,MCHBXT	8,R6XT
0023010	04	000177	114545	-----	10	VFD	8,MCHBXT	8,R7XT
0023011	04	000200	114546	-----	11	VFD	8,MCHBXT	8,R8XT
0023012	04	000201	114551	-----	12	VFD	8,MCHBXT	8,R9XT
0023013	04	000202	114552	-----	13	VFD	8,MCHBXT	8,R10XT
0023014	04	000203	114554	-----	14	VFD	8,MCHBXT	8,R11XT
0023015	04	000204	114507	-----	15	VFD	8,MCHBXT	8,R12XT
0023016	04	000205	114513	-----	16	VFD	8,MCHBXT	8,R13XT
0023017	04	000206	114515	-----	17	VFD	8,MCHBXT	8,R14XT
0023020	04	000207	114516	-----	18	VFD	8,MCHBXT	8,R15XT
0023021	04	000210	114646	-----	19	VFD	8,MCHBXT	8,DIXF
0023022	04	000211	114645	-----	20	VFD	8,MCHBXT	8,DKXF
0023023	04	000212	114645	-----	21	VFD	8,MCHBXT	8,HGXF
0023024	04	000213	114706	-----	22	VFD	8,MCHBXT	8,IBXF
0023025	04	000214	114607	-----	23	VFD	8,MCHBXT	8,IMXF
0023026	04	000215	114613	-----	24	VFD	8,MCHBXT	8,ISXF
0023027	04	000216	114615	-----	25	VFD	8,MCHBXT	8,MSXF
0023030	04	000217	114456	-----	26	VFD	8,MCHBXT	8,SDRXF
0023031	04	000220	114455	-----	27	VFD	8,MCHBXT	8,SDR1XF
0023032	04	000221	114436	-----	28	VFD	8,MCHBXT	8,SIRXF
0023033	04	000222	114435	-----	29	VFD	8,MCHBXT	8,SIR1XF
0023034	04	000223	114760	-----	30	VFD	8,MCHBXT	8,NOPXF
0023035	04	000224	114760	-----	31	VFD	8,MCHBXT	8,NOPXF
0023036	04	000225	114760	-----	32	VFD	8,MCHBXT	8,NOPXF
0023037	04	000226	114760	-----	33	VFD	8,MCHBXT	8,NOPXF
0023040	04	000227	114760	-----	34	VFD	8,MCHBXT	8,NOPXF
0023041					35	RTNTBL20		

TABLE OF MICROINSTRUCTIONS TO RETRIEVE
OFF-LINE 20 BIT REGISTERS

0023041	04	000230	114643	-----	37	VFD	8,MCHBXT	8,AIXF
0023042	04	000231	114634	-----	38	VFD	8,MCHBXT	8,AKXF
0023043	04	000232	114561	-----	39	VFD	8,MCHBXT	8,ARXF
0023044	04	000233	114742	-----	40	VFD	8,MCHBXT	8,BRXF
0023045	04	000234	114463	-----	41	VFD	8,MCHBXT	8,CRXF
0023046	04	000235	114626	-----	42	VFD	8,MCHBXT	8,PAXF
0023047	04	000236	114427	-----	43	VFD	8,MCHBXT	8,RARXF
0023050	04	000237	114625	-----	44	VFD	8,MCHBXT	8,SARXF

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 132

OFF-LINE REGISTER DUMP MULTISCAN FUNCTION

D:32:20 2/06/81 ****

OFF-LINE REGISTER DUMP SUBROUTINE

CNRUTL W77D

```

0023051          01 GETRG
0023051          02
0023051 04 000240 140540 ----- 03      BEGIN  ( )
0023052 04 000241 040561 ----- 04      L      R6,0(RA1)
0023053 04 000242 040602 ----- 05      L      R7,1(RA1)
0023054 04 000243 040623 ----- 06      L      R8,2(RA1)
0023055 04 000244 040644 ----- 07      L      R9,3(RA1)
0023056 04 000245 040665 ----- 08      L     R10,4(RA1)
0023057 04 000246 040706 ----- 09      L     R11,5(RA1)
0023060 04 000247 040727 ----- 10      L     R12,6(RA1)
0023061          11      RETURN
0023061 04 000250 056400 ----- -001- 12      BTSA

```

COMMON NONRESIDENT UTILITIES

PR-1C95A-50

D:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 133

COMPARE MAIN STORE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

MAIN FUNCTION

CNRUTL

W77D

```

01 # THIS UTILITY PROGRAM LOOPS THRU MAIN STORE WORDS, UNDER A VARIETY
02 # OF OPTIONS, COMPARING THE ON-LINE AND OFF-LINE DATA TO THEMSELVES OR
03 # A CONSTANT. THE COMPARE OPERATIONS MAY USE AN OPTIONAL DATA
04 # MASK AND/OR BEGINNING ADDRESS. THE ON-LINE TO OFF-LINE COMPARE WILL
05 # ALSO ACCEPT A FINAL ADDRESS. PROGRESS IS DISPLAYED ON THE
06 # 3A CC CONTROL PANEL AND SSP LAMPS.
07
0023061 08 # THE COMPARE OPERATION CAN BE ABORTED BY TYPING 'STOP:UTIL!'
09
0023061 10 # MESSAGE FORMATS
11 # CMPR:MAS arg;options:operand1 operand2 mask!
12 # arg = TYPE OF COMPARE
13 # (blank) - ONLINE TO OFFLINE (DEFAULT)
14 # ONL - ONLINE TO CONSTANT
15 # OFL - OFFLINE TO CONSTANT
16 # options = ACTION OPTIONS
17 # ALL - DO NOT SKIP TEMPORARY STORE
18 # ALM - GIVE MAJOR ALARM ON FIRST MISMATCH AND ABORT
19 # COMP - ALLOW COMPLEMENT-CORRECTED DATA WORDS ON DATA READS
20 # operand1 = FIRST ADDRESS (DEFAULT = 0)
21 # operand2 = LAST ADDRESS (ONLINE TO OFFLINE); OR CONSTANT (OTHERWISE)
22 # mask = COMPARE MASK (DEFAULT = ALL BITS)

0020554 26 CMRPRG CSECT
0020554 27 BEGIN ( )
0020554 28 IF ABTB THEN B CMRPRSTP
0020554 05 000000 124000 ----- -004- 29 TBN ABTB,S(ABTB)
0020555 05 000001 054341 ----- 0021116 -002- 30 BC CMRPRSTP
0020556 05 000002 031400 043102 CTSD 31 LAL RD,PAGSCR,RA1
0020560 32 CALL L2_13 # GET TTY INPUTS
0020560 05 000004 037020 110750 CSYSUB -001- 33 BSA L2_13
34 # R6 = ONL/OFL/(ZERO)
35 # R7 = ACTION OPTIONS
36 # R8,R9 = FIRST ADDRESS
37 # R10,R11 = LAST ADDRESS OR CONSTANT
38 # R12,R13 = MASK

0020562 05 000006 107312 ----- 40 # SET UP REGISTERS FOR COMPARE LOOP
0020563 05 000007 007333 ----- 41 EXR RAO,R10 # PUT MASK IN R10,R11
0020564 05 000010 006350 ----- 42 EXR RAO+1,R11
0020565 05 000011 006371 ----- 43 LR RA1,R8
44 LR RA1+1,R9
45 # SET UP FLAG (OPTIONS) REG.
0020566 05 000012 003200 ----- 46 ZR ON_OFF
0020567 05 000013 014146 ----- 47 TZ R6
0020570 05 000014 030200 ----- 48 ICF ON_OFF,S(ON_OFF)
49 SPELL R6,(O,N,L),OP=CI

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 134

COMPARE MAIN STORE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

MAIN FUNCTION

CNRUTL W77D

0020571 05 000015 003545 001515 TTYTBL	-001- 01	CI	R6,0%NL
0020573 05 000017 030201 -----	02	ICF	ON_CON,S(ON_CON)
	03	SPELL	R6,(O,F,L),OP=CI
0020574 05 000020 003545 001175 TTYTBL	-001- 04	CI	R6,0%FL
0020576 05 000022 030202 -----	05	ICF	OFF_CON,S(OFF_CON)
	06	CMRPRPROG OW	0(23) # 12634
	-001- 07	NOTE	***** THE FIRST ADDRESS OVERWRITTEN IS 000023 *****
0020577 05 000023 024166 ----- TTYTBL	10	TBN	R7,S(ALL)
0020600	11	EOW	# 12634
	-001- 12	NOTE	***** THE LAST ADDRESS OVERWRITTEN IS 000023 *****
			*
0020600 05 000024 030203 -----	16	ICF	ALL_OP,S(ALL_OP)
	17	CMRPRPROG OW	0(25) # 12634
	-001- 18	NOTE	***** THE FIRST ADDRESS OVERWRITTEN IS 000025 *****
0020601 05 000025 024172 ----- TTYTBL	21	TBN	R7,S(ALM)
0020602	22	EOW	# 12634
	-001- 23	NOTE	***** THE LAST ADDRESS OVERWRITTEN IS 000025 *****
			*
0020602 05 000026 030204 -----	27	ICF	ALM_OP,S(ALM_OP)
	28	CMRPRPROG OW	0(27) # 12634
	-001- 29	NOTE	***** THE FIRST ADDRESS OVERWRITTEN IS 000027 *****
0020603 05 000027 024171 ----- TTYTBL	32	TBN	R7,S(COMP)
0020604	33	EOW	# 12634
	-001- 34	NOTE	***** THE LAST ADDRESS OVERWRITTEN IS 000027 *****
			*
0020604 05 000030 030205 -----	38	ICF	COMP_OP,S(COMP_OP)
0020605 05 000031 030402 021637 TDATA	39	LL	RD,STRIM
0020607 05 000033 024004 ----- TDATA	40	TBN	RD,S(WDSTR)
0020610 05 000034 030210 -----	41	ICF	WIDE_OP,S(WIDE_OP)

43 # R2,R3 = ONLINE DATA
 44 # R4,R5 = OFFLINE DATA
 45 # R6,R7 = WORK REGISTERS
 46 # R8 = FLAG REGISTER
 47 # R10,R11 = MASK
 48 # RAD = LAST ADDRESS OR CONSTANT
 49 # RA1 = CURRENT ADDRESS

COMMON NONRESIDENT UTILITIES

PR-1C954-50

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COMPARE MAIN STORE MULTISCAN FUNCTION

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MAIN FUNCTION

CNRUTL W77D

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0020611                                01      IF      WIDE_OP = 0 THEN LR R10,R11
0020611 05 000035 024210 -----          02      TBN      WIDE_OP,S(WIDE_OP)
0020612 05 000036 054002 ----- 0020614 -001- 03      BC        IFS1588
0020613 05 000037 006253 -----          04      LR        R10,R11      #
0020614                                05      IFS1588
0020614 05 000040 116552 000377          06      LRM      R6,R10,0(377)
0020616 05 000042 006173 -----          07      LR        R7,R11
0020617                                08      IF      R7 = 0 THEN RGBEGIN
0020617 05 000043 014167 -----          09      TZ        R7
0020620 05 000044 055005 ----- 0020625 -001- 10      BNC      IFS1591
0020621                                11      IF      R6 = 0 THEN RGBEGIN
0020621 05 000045 014146 -----          12      TZ        R6
0020622 05 000046 055003 ----- 0020625 -001- 13      BNC      IFS1593
0020623 05 000047 015652 -----          14      COM      R10
0020624 05 000050 015673 -----          15      COM      R11
0020625                                16      RGEND
0020625                                17      IFS1593
0020625                                18      RGEND
0020625                                19      IFS1591
0020625                                20      IF      R7 = 0(177777) THEN RGBEGIN
0020625 05 000051 103565 177777          21      CI      R7,0(177777)
0020627 05 000053 055006 ----- 0020635 -001- 22      BNC      IFS1597
0020630                                23      IF      R6 = 0(377) THEN RGBEGIN
0020630 05 000054 003545 000377          24      CI      R6,0(377)
0020632 05 000056 055003 ----- 0020635 -001- 25      BNC      IFS1599
0020633 05 000057 003240 -----          26      ZR      R10
0020634 05 000060 003260 -----          27      ZR      R11
0020635                                28      RGEND
0020635                                29      IFS1599
0020635                                30      RGEND
0020635                                31      IFS1597

0020635 05 000061 106054 -----          33 # ASSUME RAO = CONSTANT
0020636 05 000062 006075 -----          34      LR      R2,RAO
0020637 05 000063 006114 -----          35      LR      R3,RAO+1
0020640 05 000064 006135 -----          36      LR      R4,RAO
0020641                                37      LR      R5,RAO+1
0020641                                38      IF      ON_OFF = 0 THEN B DEFAULTRAO # CONSTANT OPTION
0020641 05 000065 024200 -----          39      TBN      ON_OFF,S(ON_OFF)
0020642 05 000066 055005 ----- 0020647 -001- 40      BNC      DEFAULTRAO
0020643 05 000067 016414 000017          41      LRM      R0,RAO,MSK(4)
0020645 05 000071 014415 -----          42      OR      R0,RAO+1
0020646                                43      IF      CF THEN RGBEGIN
0020646 05 000072 055005 ----- 0020653 -002- 44      BNC      IFS1607
0020647                                45      DEFAULTRAO
0020647 05 000073 130702 021637 TDATA          46      LL      RAO,STRLIM
0020651 05 000075 030722 021640 TDATA          47      LL      RAO+1,STRLIM+1
0020653                                48      RGEND
0020653                                49      IFS1607

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COMPARE MAIN STORE MULTISCAN FUNCTION

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MAIN FUNCTION

CNRUTL W77D

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0020653 05 000077 103702 000017          01      NI      RAO,MSK(4)
0020655 05 000101 003742 000017          02      NI      RA1,MSK(4)
0020657          03      CALL    CMPR20
0020657 05 000103 037020 110154 CSYSUB -001- 04      BSA     CMPR20
          05      CMPRPROG OW 0(105),0(107) # 12634
          -001- 06      NOTE    ***** THE FIRST ADDRESS OVERWRITTEN IS 000105 *****

0020661          09      IF      RO = 2 THEN B CMPRSTOP # INPUT ERROR
0020661 05 000105 103405 000002          -002- 10      CI      RO,2
0020663 05 000107 054233 ----- 0021116 -001- 11      BC      CMPRSTOP
0020664 05 000110 003642 000777          12      NI      R10,MSK(8)
0020666          13      EDW     # 12634
          -001- 14      NOTE    ***** THE LAST ADDRESS OVERWRITTEN IS 000111 *****
          *

0020666          18      IF      ~ WIDE_OP THEN ZR R10
0020666 05 000112 024210 -----          -004- 19      TBN    WIDE_OP,S(WIDE_OP)
0020667 05 000113 054002 ----- 0020671 -002- 20      BC      IFS1617
0020670 05 000114 003240 -----          -002- 21      ZR      R10 #
0020671          -002- 22      IFS1617
0020671 05 000115 153004 ----- 0020675          23      B      CHECKTS

0020672          25      CMPRLOOP
0020672 05 000116 117760 037400          26      CIRM   R15,0,0,MSK(6) # REAL TIME BREAK ON EVERY 64 WORDS
0020674 05 000120 055020 ----- 0020714          27      BNC   GOAHEAD
0020675          28      CHECKTS
0020675          29      CALL    WAITX # REAL TIME BREAK
0020675 05 000121 137020 021130 0021130 -001- 30      BSA     WAITX
0020677 05 000123 155217 ----- 0021116          31      BNC   CMPRSTOP
0020700          32      IF      ~ ALL_OP THEN RGBEGIN
0020700 05 000124 024203 -----          -004- 33      TBN    ALL_OP,S(ALL_OP)
0020701 05 000125 054013 ----- 0020714          -002- 34      BC      IFS1622
0020702          35      CALL    RGCHKADR
0020702 05 000126 073036 -----          -001- 36      BSAI   rgchkAdr # SUBROUTINE RGCHKADR IS IN PROGRAM CSYSUB
0020703          37      IF      RO = 2 THEN RGBEGIN
0020703 05 000127 103405 000002          -002- 38      CI      RO,2
0020705 05 000131 055007 ----- 0020714          -001- 39      BNC   IFS1626
0020706 05 000132 003763 007777          40      OI     R15,0(10000)-1 # JAM TO 4K BOUNDARY
0020710          41      CALL    CMPR20
0020710 05 000134 037020 110154 CSYSUB -001- 42      BSA     CMPR20
0020712          43      IF      CF = 0 THEN B CMPRCOMPL
0020712 05 000136 155201 ----- 0021113          -001- 44      BNC   CMPRCOMPL
0020713 05 000137 053173 ----- 0021106          45      B      ADVANCE
0020714          46      RGEND
0020714          -001- 47      IFS1626
0020714          48      RGEND
0020714          -001- 49      IFS1622

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COMPARE MAIN STORE MULTISCAN FUNCTION

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MAIN FUNCTION

CNRUTL W77D

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0020714      04 # ADDRESS IS GOOD - READ MAS WORD
0020714 05 000140 103602 177477 05 GOAHEAD
0020716      06          NI          ONL_ERR, -(M(ONL_ERR)+M(OFL_ERR)) # RESET ERROR FLAGS
0020716      07          IF          ~ OFF_CON THEN RGBEGIN
0020716 05 000142 024202 ----- -004- 08          TBN          OFF_CON,S(OFF_CON)
0020717 05 000143 054027 ----- 0020746 -002- 09          BC          IFS1633
0020720      10 # READ ONLINE MAS
0020720      11          SBIN
0020720 05 000144 013002 ----- -001- 12          MIS          2
0020721 05 000145 105722 ----- -001- 13          DATA        35794
0020722      14          L_ONL        O(RA1),AC=NO # READ ONLINE WITH NO COM-CORRECT
0020722 05 000146 076020 ----- -001- 15          STAF        O(RA1)
0020723 05 000147 106260 ----- -001- 16          DATA        B(1000110010110000)
0020724 05 000150 030206 ----- 17          ICF          ONL_ERR,S(ONL_ERR)
0020725      18          IF          CF = 1 THEN RGBEGIN
0020725 05 000151 055006 ----- 0020733 -001- 19          BNC          IFS1638
0020726      20          IF          COMP_OP THEN RGBEGIN
0020726 05 000152 024205 ----- -004- 21          TBN          COMP_OP,S(COMP_OP)
0020727 05 000153 055004 ----- 0020733 -002- 22          BNC          IFS1640
0020730      23          L_ONL        O(RA1),AC=YES # TRY ONLINE READ AGAIN WITH COM-CORRECT
0020730 05 000154 076020 ----- -001- 24          STAF        O(RA1)
0020731 05 000155 136260 ----- -001- 25          DATA        B(1011110010110000)
0020732 05 000156 030206 ----- 26          ICF          ONL_ERR,S(ONL_ERR)
0020733      27          RGEND
0020733      -001- 28 IFS1640
0020733      29          RGEND
0020733      -001- 30 IFS1638
0020733 05 000157 106060 ----- 31          LR          R3,R0 # LOAD LOW 16 BITS
0020734      32          IF          WIDE_OP THEN RGBEGIN
0020734 05 000160 024210 ----- -004- 33          TBN          WIDE_OP,S(WIDE_OP)
0020735 05 000161 055004 ----- 0020741 -002- 34          BNC          IFS1647
0020736      35          MIMODE        L R2,SDR1 # LOAD HIGH 8 BITS
0020736 05 000162 013000 ----- -001- 36          MIS          0
0020737 05 000163 053055 ----- -002- 37          VFD          8,R2XT 8,SDR1XF
0020740 05 000164 010450 ----- 38          RRN          R2,8 # POSITION HIGH BITS OF WIDE STORE
0020741      39          RGEND
0020741      -001- 40 IFS1647
0020741 05 000165 104400 ----- 41          ZCF
0020742      42          ZBIN # INSURE CF = 0 BEFORE ZBIN
0020742 05 000166 013002 ----- -001- 43          MIS          2
0020743 05 000167 107322 ----- -001- 44          DATA        36562
0020744      45 # CHECK IF READ CAUSED AN INTERRUPT (NO MAS RESPONSE)
0020744 05 000170 055002 ----- 0020746 -001- 46          IF          CF = 1 THEN SBN ONL_ERR,S(ONL_ERR)
0020745 05 000171 026206 ----- -001- 47          BNC          IFS1654
0020746      -001- 48          SBN          ONL_ERR,S(ONL_ERR) #
0020746      -001- 49 IFS1654

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MAIN FUNCTION

CNRUTL W77D

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0020746          01          RGEND
0020746        -001- 02 IFS1633

0020746          06          IF      - ON_CON THEN RGBEGIN
0020746 05 000172 124201 ----- -004- 07          TBN      ON_CON,S(ON_CON)
0020747 05 000173 054027 ----- 0020776 -002- 08          BC        IFS1657
                                09 # READ OFFLINE MAS
0020750          10          SBIN
0020750 05 000174 013002 ----- -001- 11          MIS        2
0020751 05 000175 105722 ----- -001- 12          DATA     35794
0020752          13          LOS      O(RA1),AC=NO # READ OFFLINE WITH NO COM-CORRECT
0020752 05 000176 076020 ----- -001- 14          STAF      O(RA1)
0020753 05 000177 106160 ----- -001- 15          DATA     B(1000110001110000)
0020754 05 000200 030207 -----          16          ICF      OFL_ERR,S(OFL_ERR)
0020755          17          IF      CF = 1 THEN RGBEGIN
0020755 05 000201 055006 ----- 0020763 -001- 18          BNC      IFS1662
0020756          19          IF      COMP_OP THEN RGBEGIN
0020756 05 000202 024205 ----- -004- 20          TBN      COMP_OP,S(COMP_OP)
0020757 05 000203 055004 ----- 0020763 -002- 21          BNC      IFS1664
0020760          22          LOS      O(RA1),AC=YES # TRY OFFLINE READ AGAIN WITH COM-CORRECT
0020760 05 000204 076020 ----- -001- 23          STAF      O(RA1)
0020761 05 000205 136160 ----- -001- 24          DATA     B(1011110001110000)
0020762 05 000206 030207 -----          25          ICF      OFL_ERR,S(OFL_ERR)
0020763          26          RGEND
0020763        -001- 27 IFS1664
0020763          28          RGEND
0020763        -001- 29 IFS1662
0020763 05 000207 106120 -----          30          LR      R5,R0 # LOAD LOW 16 BITS
0020764          31          IF      WIDE_OP THEN RGBEGIN
0020764 05 000210 024210 ----- -004- 32          TBN      WIDE_OP,S(WIDE_OP)
0020765 05 000211 055004 ----- 0020771 -002- 33          BNC      IFS1671
0020766          34          MIMODE  L R4,SDR1 # LOAD HIGH 8 BITS
0020766 05 000212 013000 ----- -001- 35          MIS        0
0020767 05 000213 055055 ----- -002- 36          VFD      8,R4X1 8,SDR1XF
0020770 05 000214 010510 -----          37          RRN      R4,8 # POSITION HIGH BITS OF WIDE STORE
0020771          38          RGEND
0020771        -001- 39 IFS1671
0020771 05 000215 104400 -----          40          ZCF
0020772          41          ZBIN # INSURE CF = 0 BEFORE ZBIN
0020772          42          MIS        2
0020773 05 000217 107322 ----- -001- 43          DATA     36562
                                44 # CHECK IF READ CAUSED AN INTERRUPT (NO OMAS RESPONSE)
0020774          45          IF      CF = 1 THEN SBN OFL_ERR,S(OFL_ERR)
0020774 05 000220 055002 ----- 0020776 -001- 46          BNC      IFS1678
0020775 05 000221 026207 ----- -001- 47          SBN      OFL_ERR,S(OFL_ERR) #
0020776        -001- 48 IFS1678
0020776          49          RGEND

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COMMON NONRESIDENT UTILITIES

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COMPARE MAIN STORE MULTISCAN FUNCTION

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MAIN FUNCTION

CNRUTL W77D

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0020776 , -001- 01 IFS1657

0020776 05 000222 117600 140000 05 CIRM ONL_ERR,D,D,M(ONL_ERR)+M(OFL_ERR)
0021000 06 IF - CF THEN B PRINTDATA
0021000 05 000224 055011 ----- 0021011 -002- 07 BNC PRINTDATA
08 # COMPARE DATA
09 LR R6,R2
0021001 05 000225 006142 ----- 10 LR R7,R3
0021002 05 000226 006163 ----- 11 XR R6,R4
0021003 05 000227 015144 ----- 12 XR R7,R5
0021004 05 000230 015165 ----- 13 NR R6,R10
0021005 05 000231 014152 ----- 14 CMRPRG OW O(232) # 12634
-001- 15 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000232 *****

0021006 05 000232 037000 021143 0021143 -001- 18 CMRPRG BGNP O(367) # 12634
-001- 19 BL %XX1684
-001- 20 NOTE CMRPRG 'CSECT'
-001- 21 NOTE ***** PATCH AREA BEGINS AT 000367 *****

0021143 -001- 24 %XX1684 PATCHAREA
0021143 05 000367 114173 ----- 25 NR R7,R11
0021144 05 000370 014547 ----- 26 OR R6,R7
0021145 05 000371 030000 ----- 27 ICF RO,S(ON_OFF)
0021146 05 000372 015010 ----- 28 XR RO,ON_OFF
0021147 05 000373 024000 ----- 29 TBN RO,S(ON_OFF)
0021150 30 ENDP # 12634
0021150 05 000374 037000 021010 0021010 -001- 31 BL %XX1686
-001- 32 NOTE ***** LAST PATCH ADDRESS USED IS 000375 *****
-001- 33 NOTE ***** NUMBER OF PATCH WORDS USED IS 7 (DECIMAL) *****

0021010 -001- 36 %XX1686 OMCONTINUE
0021010 37 IF CF = 1 THEN RGBEGIN
0021010 05 000234 155072 ----- 0021102 -001- 38 BNC IFS1688
0021011 39 EOW # 12634
-001- 40 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000234 *****
*****

0021011 44 PRINTDATA
45 # PRINT LINE OF OUTPUT AFTER REAL TIME BREAK
0021011 46 CALL WAITX
0021011 05 000235 137020 021130 0021130 -001- 47 BSA WAITX
0021013 05 000237 155103 ----- 0021116 48 BNC CMRPRSTOP
0021014 49 CALL MTTYIDLE # MTC TTY BUSY ?

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MAIN FUNCTION

CNRUTL W77D

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0021014 05 000240 037020 161224 CTTYH -001- 01      BSA      MTTYIDLE
0021016 05 000242 155773 ----- 0021011 02      BNC      PRINTDATA      # TRY AGAIN LATER

                                04 # CMPR MAS address online (ERR) offline (ERR)
                                05 # LOAD REGISTERS FOR OUTPUT
0021017 05 000243 071420 -----          06      HA
0021020 05 000244 006156 -----          07      LR      R6,RA1      # ADDRESS
0021021 05 000245 006177 -----          08      LR      R7,RA1+1
                                09 CMPRPROG OW      0(246)      # 12634
-001- 10      NOTE      ***** THE FIRST ADDRESS OVERWRITTEN IS 000246
                                *****

0021022 05 000246 007202 -----          14      EXR      R8,R2      # MOVE FLAG REGISTER TEMPORARILY TO R2
0021023          15      EOW      # 12634
-001- 16      NOTE      ***** THE LAST ADDRESS OVERWRITTEN IS 000246
                                *****

0021023 05 000247 006223 -----          20      LR      R9,R3
0021024 05 000250 003240 -----          21      ZR      R10
                                22 CMPRPROG OW      0(251)      # 12634
-001- 23      NOTE      ***** THE FIRST ADDRESS OVERWRITTEN IS 000251
                                *****

0021025 05 000251 024046 -----          27      TBN      R2,S(ONL_ERR)
0021026          28      IF      CF = 1 THEN SPELL R10,(E,R,R)
0021026 05 000252 055003 ----- 0021031 -001- 29      BNC      IFS1699
0021027 05 000253 003641 000307 TTYTBL -002- 30      LI      R10,EXRR
0021031          31      IFS1699
0021031          32      EOW      # 12634
-001- 33      NOTE      ***** THE LAST ADDRESS OVERWRITTEN IS 000254
                                *****

0021031 05 000255 106264 -----          37      LR      R11,R4
0021032 05 000256 006305 -----          38      LR      R12,R5
0021033 05 000257 003320 -----          39      ZR      R13
                                40 CMPRPROG OW      0(260)      # 12634
-001- 41      NOTE      ***** THE FIRST ADDRESS OVERWRITTEN IS 000260
                                *****

0021034 05 000260 024047 -----          45      TBN      R2,S(OFL_ERR)
0021035          46      IF      CF = 1 THEN SPELL R13,(E,R,R)
0021035 05 000261 055003 ----- 0021040 -001- 47      BNC      IFS1707
0021036 05 000262 003721 000307 TTYTBL -002- 48      LI      R13,EXRR
0021040          49      IFS1707

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MAIN FUNCTION

CNRUTL W77D

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0021040          01      EOW          # 12634
-001- 02      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000263
                    *****

0021040 05 000264 103501 000011 TTYTBL -001- 06      SPELL R4,(C,M,P,R)
                    07      LI      R4,CXMPR
                    08      SPELL R5,(M,A,S)
0021042 05 000266 003521 000151 TTYTBL -001- 09      LI      R5,MXAS
                    10      CMRPROG OW      0(270)          # 12634
-001- 11      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000270
                    *****

0021044 05 000270 024044 -----          15      TBN      R2,S(ALM_OP)
0021045          16      IF      CF = 1 THEN RGBEGIN
0021045 05 000271 055016 ----- 0021063 -001- 17      BNC      IFS1721
0021046 05 000272 024050 -----          18      TBN      R2,S(WIDE_OP)
0021047          19      IF      CF = 1 THEN RGBEGIN
0021047 05 000273 055005 ----- 0021054 -001- 20      BNC      IFS1722
0021050          21      EOW          # 12634
-001- 22      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000273
                    *****

0021050          26      PRINT     FMT=(WRD,WRD,H_C,L_X,H_D,L_X,WRD,H_D,L_X,WRD),PRIOR=3,PACTION
                    =**

-001- 29 # MESSAGE PROTOTYPE
-001- 30 # ** mm WRD WRD'xxxxx oxxxxx WRD oxxxxx WRD
0021050 05 000274 073053 -----          31      BSAI     PXMRY # SUBROUTINE PHRY IS IN PROGRAM TTYA?P
0021051 05 000275 004260 -----          32      VFD     1,0 2,0 1,0 3,4 1,0 1,1 1,0 2,3 1,0 3,0
0021052 05 000276 066145 -----          33      VFD     4,TTYO_L_X 4,TTYO_H_D 4,TTYO_L_X 4,TTYO_H_C
0021053 05 000277 003300 -----          34      VFD     4,TTYO_WRD 4,TTYO_L_X 4,TTYO_H_D 4,TTYO_WRD
-001- 35      NOTE     THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
                    CONTAINED IN GENERAL REGISTERS R4,R5,R6,R7,R8,R9,R10,R11,R1
                    ,R13,
-001- 38      NOTE     ****THIS MESSAGE WILL RESULT IN A MAJOR ALARM****
-001- 39      CMRPROG OW      0(300)          # 12634
-001- 40      NOTE     ***** THE FIRST ADDRESS OVERWRITTEN IS 000300
                    *****

0021054          44      RGEND
0021054          45      IFS1722
0021054 05 000300 124050 -----          46      TBN      R2,S(WIDE OP)
0021055          47      IF      CF = 0 THEN RGBEGIN
0021055 05 000301 054005 ----- 0021062 -001- 48      BC      IFS1732
0021056          49      EOW          # 12634

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MAIN FUNCTION

CNRUTL W77D

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-001- 01      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000301
*****

0021056      05      PRINT  FMT=(WRD,WRD,H_C,L_X,SKP,L_X,WRD,SKP,L_X,WRD),PRIOR=3,PACTION
=**

-001- 08 # MESSAGE PROTOTYPE
-001- 09 # ** mm WRD WRD xxxxx xxxx WRD xxxx WRD
0021056 05 000302 073053 ----- -002- 10 BSAI PXMRY # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
0021057 05 000303 004260 ----- -002- 11 VFD 1,0 2,0 1,0 3,4 1,0 1,1 1,0 2,3 1,0 3,0
0021060 05 000304 061145 ----- -002- 12 VFD 4,TTYO_L_X 4,TTYO_SKP 4,TTYO_L_X 4,TTYO_H_C
0021061 05 000305 003040 ----- -002- 13 VFD 4,TTYO_WRD 4,TTYO_L_X 4,TTYO_SKP 4,TTYO_WRD
-001- 14 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS R4,R5,R6,R7,R9,R10,R12,R13,
****THIS MESSAGE WILL RESULT IN A MAJOR ALARM****

0021062      17      NOTE
0021062      17      RGEND
0021062 05 000306 153034 ----- 0021116 -001- 18 IFS1732
19 B CMRPRSTOP
20 OW 0(307) # 12634
-001- 21 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000307
*****

0021063      25      RGEND
0021063      26 IFS1721 -001- 26 IFS1721
0021063 05 000307 124044 ----- 27 TBN R2,S(ALM_OP)
0021064      28 IF CF = 0 THEN RGBEGIN
0021064 05 000310 054015 ----- 0021101 -001- 29 BC IFS1743
0021065 05 000311 024050 ----- 30 TBN R2,S(WIDE_OP)
0021066      31 IF CF = 1 THEN RGBEGIN
0021066 05 000312 055005 ----- 0021073 -001- 32 BNC IFS1744
0021067      33 EOW # 12634
-001- 34 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000312
*****

0021067      38      PRINT  FMT=(WRD,WRD,H_C,L_X,H_D,L_X,WRD,H_D,L_X,WRD)

-001- 40 # MESSAGE PROTOTYPE
-001- 41 # mm WRD WRD xxxxx oxxxxx WRD oxxxxx WRD
0021067 05 000313 073053 ----- -002- 42 BSAI PXMRY # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
0021070 05 000314 000200 ----- -002- 43 VFD 1,0 2,0 1,0 3,0 1,0 1,1 1,0 2,0 1,0 3,0
0021071 05 000315 066145 ----- -002- 44 VFD 4,TTYO_L_X 4,TTYO_H_D 4,TTYO_L_X 4,TTYO_H_C
0021072 05 000316 003300 ----- -002- 45 VFD 4,TTYO_WRD 4,TTYO_L_X 4,TTYO_H_D 4,TTYO_WRD
-001- 46 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS R4,R5,R6,R7,R8,R9,R10,R11,R1,
R13,
49 CMRPRPROG OW 0(317) # 12634

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 143

COMPARE MAIN STORE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

MAIN FUNCTION

CNRUTL W77D

```

-001- 01      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000317
                *****

0021073      05      RGEND
0021073      -001- 06 IFS1744
0021073 05 000317 124050 ----- 07      TBN      R2,S(WIDE OP)
0021074      08      IF      CF = 0 THEN RGBEGIN
0021074 05 000320 054005 ----- 0021101 -001- 09      BC      IFS1754
0021075      10      EOM      # 12634
                -001- 11      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000320
                *****

0021075      15      PRINT  FMT=(WRD,WRD,H_C,L_X,SKP,L_X,WRD,SKP,L_X,WRD)

-001- 17 # MESSAGE PROTOTYPE
-001- 18 # mm WRD WRD xxxxx xxxx WRD xxxx WRD
0021075 05 000321 073053 ----- -002- 19      BSAI  PXMRY # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
0021076 05 000322 000200 ----- -002- 20      VFD   1,0 2,0 1,0 3,0 1,0 1,1 1,0 2,0 1,0 3,0
0021077 05 000323 061145 ----- -002- 21      VFD   4,TTYO_L_X 4,TTYO_SKP 4,TTYO_L_X 4,TTYO_H_C
0021100 05 000324 003040 ----- -002- 22      VFD   4,TTYO_WRD 4,TTYO_L_X 4,TTYO_SKP 4,TTYO_WRD
-001- 23      NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
                CONTAINED IN GENERAL REGISTERS R4,R5,R6,R7,R9,R10,R12,R13,

0021101      25      RGEND
0021101      -001- 26 IFS1754
0021101      27      RGEND
0021101      -001- 28 IFS1743
0021101 05 000325 171400 ----- 29      GA
0021102      30      RGEND
0021102      -001- 31 IFS1688

                35 # CHECK FOR LAST ADDRESS
0021102      36      IF      R13 = R15 THEN RGBEGIN
0021102 05 000326 120337 ----- -002- 37      CR      R13,R15
0021103 05 000327 055003 ----- 0021106 -001- 38      BNC   IFS1764
0021104      39      IF      R12 = R14 THEN B CMPRCOMPL # DONE
0021104 05 000330 020316 ----- -002- 40      CR      R12,R14
0021105 05 000331 054006 ----- 0021113 -001- 41      BC   CMPRCOMPL
0021106      42      RGEND
0021106      -001- 43 IFS1764

                45 # ADVANCE ADDRESS
0021106      46 ADVANCE
0021106 05 000332 103021 ----- 47      LN      R1,1
0021107      48      ARL   RA1,R1
0021107 05 000333 001761 ----- -001- 49      AR      RA1+1,R1

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 144

COMPARE MAIN STORE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

MAIN FUNCTION

CNRUTL W77D

```

0021110 05 000334 055002 ----- 0021112 -001- 01 BNC IFS1769
0021111 05 000335 004741 ----- -001- 02 AN RA1,1
0021112 05 000336 153560 ----- 0020672 03 B CMPRLOOP

0021113 05 000337 103541 000302 TTYTBL -001- 07 R6,(C,O,M,P,L)
0021115 05 000341 053003 ----- 0021120 08 B R6,CXOMPL
ENDCMR

0021116 05 000342 103541 000346 TTYTBL -001- 12 R6,(S,T,O,P,P,E,D)
0021120 05 000344 173052 ----- -001- 15 BSAI # STOP DB DISPLAY
0021121 05 000350 021042 ----- -001- 16 PRINT # SUBROUTINE STPUTIL IS IN PROGRAM CUTIL
FMT=(WRD(C,M,P,R),WRD(M,A,S),WRD),PRIOR=1

-001- 18 # MESSAGE PROTOTYPE
-001- 19 # mm CMR MAS WRD
-002- 20 BSAI PXMRY # SUBROUTINE PHRY IS IN PROGRAM TTYAPP
0021121 05 000345 173053 ----- -002- 21 VFD 1,1 2,0 1,0 3,0 1,0 1,1 1,0 2,1 1,0 3,0
0021122 05 000346 100220 ----- -002- 22 VFD 4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_WRD
0021123 05 000347 021040 ----- -002- 23 VFD 4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_
0021124 05 000350 021042 ----- -002- 24 VFD 5,2 11,CXMPR
0021125 05 000351 010011 ----- TTYTBL -002- 25 VFD 5, 11,MXAS
0021126 05 000352 000151 ----- TTYTBL -001- 26 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS R6,

0021127 05 000353 156463 ----- -001- 28 RETURN 3
0021127 05 000353 156463 ----- -001- 29 BSAI 3

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL. ISSUE 05 PAGE 145

COMPARE MAIN STORE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

MAIN FUNCTION

CNRUTL

W77D

```

01 # DESCRIPTION
02 # DISPLAY RA1 IN THE DISPLAY BUFFER AND TAKE A REAL TIME BREAK
0021130 03
04 # ENTRY
0021130 05 # WAITX
06
07 # INPUTS
0021130 08 # NONE
09
10 # OUTPUTS
11 # RO = RETURN CODE
12 # 0 - SUCCESS
13 # -0 - ABORT

0021130 15 WAITX
0021130 16 BEGIN (
0021130 05 000354 130400 043147 CTSD 17 LL RO,UREQBUF
0021132 18 IF RO = 0 THEN RETURN 1 # STOP:UTIL TYPED - ABORT
0021132 05 000356 014000 ----- -002- 19 TZ RO
0021133 05 000357 055002 ----- 0021135 -001- 20 BNC IFS1791
0021134 05 000360 056461 ----- -002- 21 BTSAN 1
0021135 -001- 22 IFS1791
23 CMPRPROG OW 0(361) # 12607
-001- 24 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000361 *****

0021135 05 000361 106036 ----- 27 LR R1,RA1
0021136 05 000362 006017 ----- 28 LR RO,RA1+1
0021137 -001- 29 EOW # 12607
-001- 30 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000362 *****
*

0021137 34 CALL LOADDB # UPDATE DB
0021137 05 000363 037020 133305 CUTIL -001- 35 BSA LOADDB
0021141 36 CALL WAIT
0021141 05 000365 173025 ----- -001- 37 BSAI WXAIT # SUBROUTINE WAIT IS IN PROGRAM CBLM
0021142 38 RETURN
0021142 05 000366 156400 ----- -001- 39 BTSA

```

COMMON NONRESIDENT UTILITIES

PR-10954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 146

COMPARE MAIN STORE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

PATCH AREA

CNRUTL W77D

0021143
0021143

01	DDELETE NOTE	1
02	BSS	45
03	CMRPATCH	
04	DINSERT NOTE	' DO .CMRPATCH I=1,45

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 147

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TTY CATALOG TABLE

CNRUTL W77D

0021143

```

01 # THE OVERWRITE UTILITY PROVIDES THE MEANS OF MAKING CHANGES TO THE GENERIC
02 # PROGRAM. THE CHANGES ARE SPECIFIED AT THE LOWEST POSSIBLE LEVEL BY INPUTTING
03 # THE RAW DATA FOR EACH LOCATION TO BE CHANGED. A CHANGE IS ACTUALLY
04 # INTRODUCED VIA A VERY FORMALIZED PROCEDURE SPECIFIED IN A BELL SYSTEM
05 # PRACTICES (BSP). THIS UTILITY PROVIDES THE TTY MESSAGES AND PROCESSING
06 # ROUTINES ON WHICH THE FORMAL PROCEDURE IS BASED. THE IMPLEMENTATION OF EACH
07 # MESSAGE PROCESSING ROUTINE WILL BE DISCUSSED AT THE ENTRY POINT FOR THE
08 # INDIVIDUAL ROUTINES. TO PLACE THE MESSAGES IN PERSPECTIVE, HOWEVER, IT IS
09 # USEFUL TO OUTLINE A TYPICAL SEQUENCE OF MESSAGES AS THEY MIGHT BE REQUIRED
10 # IN THE PROCEDURE. IT SHOULD BE EMPHASIZED THAT THE FOLLOWING SEQUENCE IS
11 # TYPICAL AND NOT THE STANDARD.
12
13 # TTY INPUT MESSAGE          FUNCTION PERFORMED
14 # -----
15 # ALW:OW!                    INITIALIZE OW CONTROL BLOCKS.
16 # IN:GENID:xxxxxxx!         IDENTIFY GENERIC TO WHICH OW SHOULD BE APPLIED.
17 # IN:ISSID:zzzzzzz!        IDENTIFY ISSUE TO WHICH OW SHOULD BE APPLIED.
18 # IN:OW nnnnn;TTY!         BEGIN THE INPUT OF OW NUMBER nnnnn FROM THE TTY.
19 # IN:OWDATA:ck,seg,adr,old,new! ENTER THE BODY OF THE OW.
20 # IN:OWDATA:ck,seg,adr,old,new!
21 #
22 #
23 # IN:OWDATA:ck,seg,adr,old,new!
24 # VER:OW:OLD!              VERIFY THAT THE OLD DATA IN THE IN:OWDATA MESSAGES
25 #                          MATCHES THE PRESENT DATA IN THE PROCESSOR.
26 # OP:OW;TAPE!              ADD OW TO FILE OF OVERWRITES ON TAPE.
27 # LOD:OW:NEW!              CHANGE THE GENERIC DATA IN MAIN STORE (RESIDENT)
28 #                          OR ON TAPE (NONRESIDENT).
29 # OP:HASH:GENERIC!         COMPUTE NEW RESIDENT HASHSUMS.
30 # OP:HASHNR:SEG!          COMPUTE NEW NONRESIDENT HASHSUMS.
31 # ---SWITCH AND TEST OVERWRITE---
32 # ACT:OW!                  FLAG RESIDENT PORTIONS OF THE OW TO BE USED DURING
33 #                          A MEMORY RELOAD INITIALIZATION.
34 # UPD:HASH:GENERIC!        UPDATE THE CHECKSUM FILE WITH NEW HASHSUMS.
35 # STOP:OW!                 UPDATE THE OTHER MAIN STORE AND DEACTIVATE OVERWRITE PROGRAM.

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 148

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TTY CATALOG TABLE

CNRUTL

W77D

0021143 01 # GENERAL COMMENTS ON CONTROL FLOW IN THE OVERWRITE SECTION
 02 # -----
 03
 04 # IN THIS SECTION, A SET OF MACROS (RTB, CALLPROC, AND RTNPROC)
 05 # IS USED TO CONTROL FLOW OVER REAL TIME BREAKS. THE RTB MACRO, IN PARTICULAR,
 06 # PROVIDES A MEANS OF TAKING A REAL TIME BREAK WITHOUT BEING DISTRACTED
 07 # BY THE OVERHEAD OF SAVING AND RESTORING STATUS INFORMATION. THE DISTRACTION
 08 # IS AVOIDED BOTH IN READING THE PROGRAM AND UNDERSTANDING WHAT IS HAPPENING.
 09 # THE RTB MACRO HAS THREE OPTIONS (TTYIN, TTYOUT, TAPE). THE TTYIN OPTION
 10 # IS USED TO BRIDGE THE REAL TIME BREAK FROM THE TTY INPUT PROCESSING CALL TO THE
 11 # SUBSEQUENT MULTISCAN FUNCTION ENTRY. IT ANALYZES THE INPUT MESSAGE
 12 # VARIABLE FIELDS AND SAVES THE DATA IN THE OWCTL BUFFER.
 13 # THE TTYOUT OPTION IS USED TO BRIDGE THE REAL TIME BREAK BETWEEN LINKS OF
 14 # A LINKED TTY OUTPUT MESSAGE. THE TAPE OPTION IS USED TO BRIDGE THE
 15 # REAL TIME BREAK TAKEN TO ALLOW REQUESTED TAPE OPERATIONS TO COMPLETE. IN EACH
 16 # CASE, CONTROL IS PASSED TO THE FINAL SUBSECTION TO DO THE PROCESSING. CONTROL
 17 # IS RETURNED TO THE INSTRUCTION FOLLOWING THE CALL TO RTB ONLY AFTER THE BREAK
 18 # IS COMPLETED. FOR THE THREE OPTIONS THIS MEANS THE NEXT MULTISCAN FUNCTION ENTRY,
 19 # THE PREVIOUS TTY LINK HAS COMPLETED, AND THE TAPE OPERATION HAS COMPLETED RESPECTIVELY.
 20 # THE RTB MACRO SAVES AND RESTORES R2-R13 IN THE OWCTL BUFFER.
 21 # BEFORE THE SAVE, THE RTBPM REGISTER IS UPDATED TO MARK THE POINT AT WHICH
 22 # THE BREAK WAS TAKEN.
 23
 0021143 24 # THE CALLPROC AND RTNPROC MACROS ARE USED LIKE THE CALL AND RETURN
 25 # MACROS FOR SUBROUTINES. THE DIFFERENCE IS THAT THEY DO NOT USE THE HG AREA
 26 # BUT RATHER SAVE THE RETURN ADDRESS MARKER IN REGISTER PROCPM. THIS
 27 # ALLOWS THE CALLED ROUTINE, LABELLED AN OW PROCEDURE, TO TAKE REAL TIME
 28 # BREAKS VIA THE RTB MACRO. REGISTER CONTENTS ARE NOT NECESSARILY PRESERVED.

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 149

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

ADMINISTRATIVE CONTROL

CNRUTL

W77D

0011037

01 OWPROG CSECT

02 # THE ADMINISTRATIVE CONTROL SUBSECTION IS THE MULTISCAN FUNCTION ENTRY POINT.
 03 # IT INTERPRETS THE ENTRY CODE DIFFERENTIATING BETWEEN AN ABORT ENTRY, A
 04 # FIRST ENTRY OR THE NORMAL PER SCAN ENTRY. IN THE FIRST CASE AN APPROPRIATE
 05 # MESSAGE IS TYPED AND THE OVERWRITE ROUTINE IS TERMINATED. IN THE SECOND CASE,
 06 # ON APPROPRIATE MESSAGE IS TYPED AND THE OWCTL BUFFER IS INITIALIZED.
 07 # ON THE NORMAL ENTRY, CONTROL IS IMMEDIATELY PASSED TO THE FINAL SUBSECTION
 08 # WHICH PROCESSES REAL TIME BREAKS.

```

0011037          12 OWMSF
0011037          13
0011037          14      BEGIN      ( )
0011037          15      IF          ABTB THEN RGBEGIN
0011037 06 000000 124000 ----- -004- 15      TBN      ABTB,S(ABTB)
0011040 06 000001 055042 ----- 0011102 -002- 16      BNC      IFS1813
0011040          17      CLOSE     OVWCLNT      # IN CASE OW FUNCTION WAS DOING A TAPE
                                # OPERATION
0011041 06 000002 073047 ----- -002- 19      BSAI     RXEQR      # SUBROUTINE REQR IS IN PROGRAM CTAPH
0011042 06 000003 015300 ----- -001- 20      VFD     5,OVWCLNT 4,CLOSE 1,1 1,0 5,0
0011043 06 000004 156000 -----          21      BPAX     RO
0011044 06 000005 153003 ----- 0011047          22      B       ABTCONT      # CLOSE SUCCESSFUL
0011045 06 000006 153002 ----- 0011047          23      B       ABTCONT      # OVERWRITE PROGRAM WAS NOT IN CONTROL
0011046          24      RETURN    2      # WAIT FOR TAPE OPERATION TO COMPLETE
0011046 06 000007 156462 ----- -001- 25      BTSAN   2
0011047          26      ABTCONT
0011047          27      CALL     CK_OST
0011047 06 000010 137020 001750 CBLM -001- 28      BSA     CK_OST
0011051          29      IF       RO >= 3 THEN RGBEGIN
0011051 06 000012 106000 ----- -003- 30      LR     RO,RO
0011052 06 000013 003400 177775 -003- 31      SI     RO,3
0011054 06 000015 055013 ----- 0011067 -001- 32      BNC     IFS1820
0011055 06 000016 003401 000002          33      LI     RO,ES(1STB)
0011057          34      UPDOMASCONT
0011057          35      CALL     OMASUPD
0011057 06 000020 137020 003176 CBLM -001- 36      BSA     OMASUPD
0011061          37      IF       RO = 3 THEN B UPDDONE
0011061 06 000022 103405 000003 -002- 38      CI     RO,3
0011063 06 000024 054004 ----- 0011067 -001- 39      BC     UPDDONE
0011064          40      CALL     WAIT
0011064 06 000025 073025 ----- -001- 41      BSAI    WXAIT      # SUBROUTINE WAIT IS IN PROGRAM CBLM
0011065 06 000026 103000 -----          42      ZR     RO
0011066 06 000027 053771 ----- 0011057          43      B       UPDOMASCONT
0011067          44      RGEND
0011067          -001- 45      IFS1820
0011067          46      UPDDONE
0011067          47      PRINT    FMT=(WRD(A,L,W),WRD(O,W),WRD(S,T,O,P,P,E,D))
  
```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 150

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

ADMINISTRATIVE CONTROL

CNRUTL W77D

```

-001- 01 # MESSAGE PROTOTYPE
-001- 02 # mm ALW OW STOPPED
0011067 06 000030 173053 -----
0011070 06 000031 100200 -----
0011071 06 000032 021040 -----
0011072 06 000033 021042 -----
0011073 06 000034 014004 ----- TTYTBL
0011074 06 000035 000202 ----- TTYTBL
0011075 06 000036 000346 ----- TTYTBL
-002- 03 BSAI PXMRY # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
-002- 04 VFD 1,1 2,0 1,0 3,0 1,0 1,1 1,0 2,0 1,0 3,0
-002- 05 VFD 4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_WRD
-002- 06 VFD 4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_
-002- 07 VFD 5,3 11,AXLW
-002- 08 VFD 5, 11,OXW
-002- 09 VFD 5, 11,SXTOPPED
-001- 10 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS
0011076 06 000037 103020 -----
0011077 06 000040 034420 043177 CTSD
0011101
0011101 06 000042 056463 -----
0011102
0011102
0011102
-004- 12 OFLUCTL = 0 # IDLE UTILITY SELECT WORD
-002- 13 ZR R1
-002- 14 STL R1,OFLUCTL
-001- 15 RETURN 3
-001- 16 BTSAN 3
-001- 17 RGEND
-001- 18 IFS1813
-001- 19 IF 1STB THEN RGBEGIN # INITIALIZATION
0011102 06 000043 124001 -----
0011103 06 000044 055020 ----- 0011123
0011104
-004- 20 TBN 1STB,S(1STB)
-002- 21 BNC IFS1848
-001- 22 PRINT FMT=(WRD(A,L,W),WRD(O,W),WRD(C,O,M,P,L))

-001- 24 # MESSAGE PROTOTYPE
-001- 25 # mm ALW OW COMPL
0011104 06 000045 073053 -----
0011105 06 000046 100200 -----
0011106 06 000047 021040 -----
0011107 06 000050 021042 -----
0011110 06 000051 014004 ----- TTYTBL
0011111 06 000052 000202 ----- TTYTBL
0011112 06 000053 000302 131400 TTYTBL
-002- 26 BSAI PXMRY # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
-002- 27 VFD 1,1 2,0 1,0 3,0 1,0 1,1 1,0 2,0 1,0 3,0
-002- 28 VFD 4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_WRD
-002- 29 VFD 4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_
-002- 30 VFD 5,3 11,AXLW
-002- 31 VFD 5, 11,OXW
-002- 32 VFD 5, 11,CXOMPL
-001- 33 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS
0011113 06 000054 131400 010025 0010025
0011115 06 000056 003014 -----
0011116
0011116 06 000057 073031 -----
0011117 06 000060 103000 -----
-001- 35 LAL RO,OWCTL,RA1
-001- 36 LN RO,D(12)
-001- 37 CALL CLR_WRDS # ZERO CONTROL BLOCK
-001- 38 BSAI clr_wRds # SUBROUTINE CLR_WRDS IS IN PROGRAM CSYSUB
-001- 39 ZR RO
-001- 40 OWPROG OW 0(61) # 12280
-001- 41 NOTE ***** THE FIRST ADDRESS OVERRITTEN IS 000061
*****

0011120 06 000061 037000 112033 0000401
-001- 45 CPATCH BGNP 0(401) # 12280
-001- 46 BL XXX1867
-001- 47 NOTE CPATCH 'CSECT'
-001- 48 NOTE ***** PATCH AREA BEGINS AT 000401 *****
*
```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

ADMINISTRATIVE CONTROL

CNRUTL W770

```

011203J
0112033 10 000401 134400 010041 0000014 -001- 03 XXX1867 PATCHAREA
0112035 10 000403 031400 010042 0000015 04 STL RO,SEQKEY
0112037 10 000405 003010 ----- 05 LAL RO,GENISS,RA1 # ZERO GENISS
0112040 06 07 LN RO,8
0112040 10 000406 073031 ----- -001- 07 CALL CLR_WRDS
0112041 09 BSAI CLR_WrDs # SUBROUTINE CLR_WRDS IS IN PROGRAM CSYSUB
0112041 10 000407 156462 ----- -001- 08 RETURN 2
0112042 11 BTSAN 2
-001- 12 ENDP NR # 12280
NOTE ***** LAST PATCH ADDRESS USED IS 000407 *****
*
-001- 14 NOTE ***** NUMBER OF PATCH WORDS USED IS 7 (DECIMAL) *****

0011122 17 TAKEOUT 1
0011122 06 000063 006000 ----- -001- 18 LR 0,0
0011123 19 EOW # 12280
-001- 20 NOTE ***** THE LAST ADDRESS OVERRITTEN IS 000063
*****

0011123 24 RGEND
0011123 -001- 25 IFS1848

29 # IF ACTIVE, WAIT FOR TTY OR TAPE OPERATION TO COMPLETE. WHEN IDLE,
30 # RETRIEVE THE REAL TIME BREAK PM (DISPLACEMENT FROM 'RTBPMORG')
31 # AND BRANCH TO THE INTERRUPTED POINT TO CONTINUE PROCESSING.
32 EXCRTBPM
0011123 06 000064 131400 010025 0010025 33 LAL RO,0WCTL,RA1
0011125 34 CALL L2_13 # MOVE CONTROL BLOCK TO REGISTERS
0011125 06 000066 037020 110750 CSYSUB -001- 35 BSA L2_13
0011127 36 IF TAPEACT THEN RGBEGIN # TEST IF TAPE ACTION IS COMPLETE
0011127 06 000070 124216 ----- -004- 37 TBN TAPEACT,S(TAPEACT)
0011130 06 000071 055012 ----- 0011142 -002- 38 BNC IFS1879
39 STATST 0VWCLNT
0011131 06 000072 073047 ----- -002- 40 BSAI RXEQR # SUBROUTINE REQR IS IN PROGRAM CTAPH
0011132 06 000073 016300 ----- -001- 41 VFD 5,0VWCLNT 4,STATST 1,1 1,0 5,0
0011133 06 000074 110417 ----- 42 RLN RO,1
0011134 06 000075 056000 ----- 43 BPAX RO
0011135 06 000076 153017 ----- 0011154 44 B BRTBPM
0011136 06 000077 006000 ----- 45 NOP
0011137 06 000100 137000 014630 0014630 46 BL RERFAIL
0011141 47 RETURN 2
0011141 06 000102 156462 ----- -001- 48 BTSAN 2
0011142 49 RGEND

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 152

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

ADMINISTRATIVE CONTROL

CNRUTL W77D

0011142 -001- 01 IFS1879

```

0011142          05      IF  TTYACT THEN RGBEGIN # TEST IF TTY LINK OUTPUT IS COMPLETE
0011142 06 000103 124217 ----- -004- 06      TBN      TTYACT,S(TTYACT)
0011143 06 000104 055011 ----- 0011154 -002- 07      BNC      IFS1887
0011144 06 000105 006011 -----          08      LR       RO,TTYLINK
0011145          09      CALL     LINKRDY
0011145 06 000106 037021 125021 TTYAPP -001- 10      BSA      LINKRDY
0011147 06 000110 110417 -----          11      RLM      RO,1
          12      OWPROG  OW      O(111)          # 12280
          -001- 13      NOTE     ***** THE FIRST ADDRESS OVERWRITTEN IS 000111
          *****
    
```

```

0011150 06 000111 037000 112042 0000410 -001- 17      CPATCH  BGPN      O(410)          # 12280
          -001- 18      BL       XXX1893
          -001- 19      NOTE     CPATCH 'CSECT'
          -001- 20      NOTE     ***** PATCH AREA BEGINS AT 000410 *****
          *
    
```

```

0112042          -001- 24      XXX1893  PATCHAREA
0112042 10 000410 156000 -----          25      BPAX     RO
0112043 10 000411 137000 014630 0003571          26      BL       REQFAIL
0112045          27      RETURN  2
0112045 10 000413 156462 ----- -001- 28      BTSAN   2
0112046 10 000414 006000 -----          29      NOP
0112047          30      ENDP
0112047 10 000415 137000 011152 0000113 -001- 31      BL       XXX1896          # 12280
          -001- 32      NOTE     ***** LAST PATCH ADDRESS USED IS 000416 *****
          *
          -001- 34      NOTE     ***** NUMBER OF PATCH WORDS USED IS 7 (DECIMAL) *****
    
```

```

0011152          -001- 37      XXX1896  OWCONTINUE
0011152          38      TAKEOUT  1
0011152 06 000113 106000 ----- -001- 39      LR       O,0
0011153          40      TAKEOUT  1
0011153 06 000114 006000 ----- -001- 41      LR       O,0
0011154          42      EOW
          -001- 43      NOTE     ***** # 12280
          ***** THE LAST ADDRESS OVERWRITTEN IS 000114
          *****
    
```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

ADMINISTRATIVE CONTROL

CNRUTL W77D

0011154		01		RGEND	
0011154		-001-	02	IFS1887	
0011154			06	BRTBPM	
0011154	06	000115	103602	037777	
0011156	06	000117	014000	-----	
			07	NI	RTBPM,M(RTBPM)
			08	TZ	RO
					# NEEDED FOR PROCEDURE RETURN MACRO ENTRY (RTNPROC)
0011157	06	000120	056010	-----	
0011160			10	BPAX	RTBPM
0011160			11	RTBPMORG	
					# BASE ADDRESS FOR REAL TIME BREAK PM
0011160			12	RETURN	2
0011160	06	000121	156462	-----	
		-001-	13	BTSAN	2
0011161			17	DUMUNLOD	
			18	# DUMMY ENTRY POINT FOR ALL TAPE READ MACROS.	
0011161			19	BEGIN	()
0011161			20	RETURN	0
					# SIGNAL FINAL ENTRY FOR ALL READS
0011161	06	000122	156460	-----	
		-001-	21	BTSAN	0

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 154

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

TTY PROCESSING ROUTINES DESCRIPTION

CNRUTL W77D

01 # THIS SUBSECTION LISTS ALL OF THE OVERWRITE TTY INPUT
 02 # MESSAGES. THE DESCRIPTION OF EACH PROCESSING ROUTINE IS PROVIDED AT
 03 # THE BEGINNING OF THE ROUTINE. SOME MESSAGES ARE SIMILAR AND SHARE THE
 04 # SAME PROCESSING ROUTINE. THE PROCESSING ROUTINES ARE:
 05 # 1--INGENID INPUT THE GENERIC IDENTIFIER.
 06 # 2--INISSID INPUT THE ISSUE IDENTIFIER.
 07 # 3--INOWDATA INPUT THE DATA FOR OVERWRITING ONE PROGRAM LOCATION.
 08 # 4--INOW INPUT AN OVERWRITE FROM TAPE OR INITIATE AN INPUT FROM TTY.
 09 # 5--OPOW OUTPUT AN OVERWRITE TO TAPE OR TTY.
 10 # 6--ACTOW CHANGE THE STATUS OF AN OVERWRITE TO ACTIVE.
 11 # CNLOW CHANGE THE STATUS OF AN OVERWRITE TO INACTIVE.
 12 # RMVOW CHANGE THE STATUS OF AN OVERWRITE TO DEAD.
 13 # 7--LODOW LOAD THE DATA SPECIFIED IN AN OVERWRITE.
 14 # VEROW VERIFY THE DATA SPECIFIED IN AN OVERWRITE.
 15 # 8--INITOWFI INITIALIZE THE OVERWRITE FILE, FORMAT THE HEADER.
 16 # UPDOWFIL UPDATE THE OVERWRITE FILE HEADER.
 17 # OPOWFILE PRINT A CENSUS OF THE OVERWRITE FILE ON THE TTY.
 18 # 9--STOPOW TERMINATE THE OVERWRITE ROUTINE.
 19 # 10--OPHASH CALCULATE THE HASHSUMS OVER RESIDENT DATA.
 20 # 11--OPHASHNR CALCULATE THE HASHSUMS OVER NONRESIDENT DATA.
 21 # 12--OPHASH UPDATE THE HASHSUM ENTRIES IN THE CHECKSUM FILE.
 22 # 13--VERHASH VERIFY THE HASHSUM ENTRIES IN THE CHECKSUM FILE.

26 # A LEGAL SEQUENCE OF MESSAGES IS ENFORCED BY MEANS OF A SEQUENCE KEY.
 27 # ESSENTIALLY, THE VALUE OF 'SEQKEY' DETERMINES WHETHER OR NOT DATA
 28 # EXISTS IN THE OW BUFFER (CORRECTLY): 0 = EMPTY, 1 = HEADER ONLY,
 29 # 2 = HEADER AND ONE OR MORE OVERWRITES.
 30 # ACTION IN SOME CASES IS SHOWN AS (INITIAL,SUCCESS).
 31

0011162

0011162

32 # MESSAGE	REQUIRED	ACTION
33		
34 # ALW:OW	-	0
35 # IN:OW;TTY	-	(0,1)
36 # IN:OW;TAPE	-	(0,2)
37 # IN:OWDATA	-0	2
38 # OP:OW	2	-
39 # ACT/CNL/RMV:OW	2	-
40 # LOD:OW	2	-
41 # VER:OW	2	-
42 # INIT/UPD/OP:OWFILE	-	0
43 # OP/UPD/VER:HASH	-	-
44 # OP:HASHNR	-	-

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 155

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

INPUT GENERIC IDENTIFIER

CNRUTL W77D

0011162

01 INGENID

02 # INPUT A CHARACTER STRING WHICH IS USED TO IDENTIFY A GENERIC PROGRAM.
 03 # THE CHARACTER STRING IS STORED IN THE UPPER HALF OF THE GENISS BUFFER.
 04 # IT IS USED BY THE IN:OW, INIT:OWFILE AND UPD:OWFILE MESSAGE
 05 # PROCESSING ROUTINES.

0011162

09 # R6-R9 = 8-CHARACTER ASCII CODE

0011162

10 BEGIN ()

0011162 06 000123 137020 014561 0014561 -001-

11 CALL FRSTCHK

0011164

12 BSA FRSTCHK

0011164 06 000125 154002 ----- 0011166 -001-

13 IF CF = 0 THEN RETURN

0011165 06 000126 056400 -----

14 BC IFS1917

0011166

15 BTSA

0011166 06 000127 135540 010042 0010042

16 IFS1917

0011170 06 000131 044561 -----

17 STAL R6,GENISS,RA1

0011171 06 000132 044602 -----

18 ST R7,1(RA1)

0011172 06 000133 044623 -----

19 ST R8,2(RA1)

0011173

20 ST R9,3(RA1)

0011173 06 000134 056464 ----- TTYTBL -001-

21 RETURN TTY_OK

22 BTSAN TTY_OK

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 156

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

INPUT ISSUE IDENTIFIER

CNRUTL

W77D

0011174

01 INISSID

02 # INPUT A CHARACTER STRING WHICH IS USED TO IDENTIFY A PROGRAM ISSUE.
 03 # THE CHARACTER STRING IS STORED IN THE LOWER HALF OF THE GENISS BUFFER.
 04 # IT IS USED BY THE IN:OW, INIT:OWFILE AND UPD:OWFILE MESSAGE
 05 # PROCESSING ROUTINES.

0011174

09 # R6-R9 = 8-CHARACTER ASCII CODE

0011174						10	BEGIN	()
0011174						11	CALL	FRSTCHK
0011174	06	000135	137020	014561	0014561	-001-	12	BSA FRSTCHK
0011176						13	IF	CF = 0 THEN RETURN
0011176	06	000137	154002	-----	0011200	-001-	14	BC IFS1927
0011177	06	000140	056400	-----		-002-	15	BTSA
0011200						-001-	16	IFS1927
0011200	06	000141	135540	010046	0010046		17	STAL R6,GENISS+4,RA1
0011202	06	000143	044561	-----			18	ST R7,1(RA1)
0011203	06	000144	044602	-----			19	ST R8,2(RA1)
0011204	06	000145	044623	-----			20	ST R9,3(RA1)
0011205							21	RETURN TTY_OK
0011205	06	000146	056464	-----	TTYTBL	-001-	22	BTSAN TTY_OK

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 157

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

INPUT OVERWRITE DATA

CNRUTL W77D

0011206

01 INOWDATA

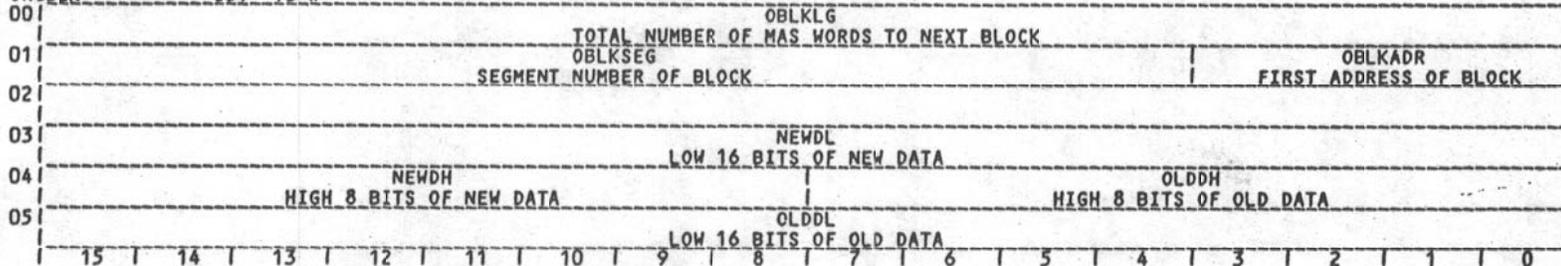
02 # THIS MESSAGE IS USED TO SPECIFY THE DATA TO CHANGE ONE PROGRAM LOCATION.
 03 # AN OVERWRITE NORMALLY WILL CONTAIN A SERIES OF THESE MESSAGES TO SPECIFY AN
 04 # ENTIRE CHANGE. THE NECESSARY DATA INCLUDES A SEGMENT NUMBER AND ADDRESS TO
 05 # IDENTIFY THE LOCATION, OLD DATA WHICH IS USED AS A VALIDITY CHECK, AND NEW DATA
 06 # WHICH IS THE CHANGE. THIS DATA IS ENTERED AND SAVED IN THE OWBUFFER BUFFER.
 07 # THE DATA IN THE BUFFER IS BLOCKED IN ORIGIN BLOCKS. THE FORMAT OF AN ORGBLK IS

0011206

09 ORGBLK_PICTURE

ORGBLK

-001- 10 #



32 # WHEN THE FIRST WORD IS ENTERED, A SIX-WORD ORGBLK IS CREATED WITH OBLKLG=1.
 33 # WHEN AND IF A CHANGE FOR THE NEXT CONSECUTIVE PROGRAM LOCATION IS ENTERED,
 34 # A NEW ORGBLK IS NOT CREATED BUT OBLKLG IS INCREMENTED BY ONE AND
 35 # THREE DATA WORDS ARE APPENDED TO THE END OF THE BLOCK. WHENEVER A CHANGE
 36 # IS ENTERED TO A LOCATION WHICH IS NOT ADJACENT TO AN EXISTING BLOCK, A NEW
 37 # SIX-WORD ORGBLK IS CREATED. IT IS IMPORTANT THAT THE ORGBLK BE
 38 # ORDERED ACCORDING TO ASCENDING SEGMENT NUMBER AND ADDRESS WITHIN THE OWBUFFER.
 39 # THEREFORE, NEWLY CREATED ORGBLKS ARE NOT ADDED AT THE END OF THE OWBUFFER,
 40 # BUT ARE INSERTED AT THE APPROPRIATE POINT BY SHIFTING ALL BLOCKS WITH
 41 # HIGHER SEGMENT NUMBERS AND ADDRESSES. ONE FINAL CASE EXISTS. IF THE LOCATION
 42 # TO BE MODIFIED IS ALREADY CONTAINED IN AN EXISTING ORGBLK, NO ADDITIONS ARE
 43 # MADE AND THE THREE DATA WORDS FOR THAT LOCATION ARE MODIFIED TO REFLECT
 44 # THE NEW IN:OWDATA MESSAGE. A WARNING MESSAGE IS PRINTED IN THIS LATTER CASE.

48 # R6 = CHECK NUMBER
 49 # R7 = SEGMENT NUMBER
 50 # R8,R9 = MAS ADDRESS
 51 # R10,R11 = OLD DATA
 52 # R12,R13 = NEW DATA
 53 BEGIN (
 54 CALL FRSTCHK
 55 BSA FRSTCHK
 56 IF CF = 0 THEN RETURN

0011206

0011206

0011206 06 000147 137020 014561 0014561 -001-

0011210

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 158

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

INPUT OVERWRITE DATA

CNRUTL W77D

```

0011210 06 000151 154002 ----- 0011212 -001- 01          BC      IFS1938
0011211 06 000152 056400 -----          -002- 02          BTSA
0011212          -001- 03 IFS1938
0011212          04          CALL    CHECKNUM
0011212 06 000153 137020 014433 0014433 -001- 05          BSA     CHECKNUM
0011214          06          IF      RO = 0 THEN B INOWDATANG
0011214 06 000155 114000 -----          -002- 07          TZ      RO
0011215 06 000156 055167 -----          0011404 -001- 08          BNC     INOWDATANG
0011216 06 000157 006350 -----          09          LR      RA1,R8
0011217 06 000160 006371 -----          10          LR      RA1+1,R9
0011220 06 000161 006007 -----          11          LR      RO,R7
0011221          12          CALL    BCDXBIN          # CONVERT SEGMENT NUMBER TO BINARY
0011221 06 000162 073030 -----          -001- 13          BSAI   BCDXBIN          # SUBROUTINE BCDXBIN IS IN PROGRAM CSYSUB
0011222 06 000163 106160 -----          14          LR      R7,RO
0011223          15          CALL    RGCHKADR          # IS ADDRESS OUT OF RANGE OR IN TEMPORARY
          STORE
0011223 06 000164 073036 -----          -001- 17          BSAI   rgchkAdr          # SUBROUTINE RGCHKADR IS IN PROGRAM CSYSUB
0011224          18          IF      CF = 1 THEN B RTN_NG # CF=1 MEANS OUT OF RANGE
0011224 06 000165 154010 -----          0011234 -001- 19          BC      RTN_NG
0011225 06 000166 004016 -----          20          SN      RO,2          # RO=0 IF UNWRITE-PROTECTED STORE ADDRESS
0011226 06 000167 014407 -----          21          OR      RO,R7
0011227          22          IF      CF = 1 THEN B RTN_NG # CF=1 MEANS INCONSISTENT ADDRESS/SEGMENT
0011227 06 000170 054005 -----          0011234 -001- 23          BC      RTN_NG
0011230 06 000171 031400 010041 0010041          24          LAL     RO,SEQKEY,RA1
0011232          25          IF      RO = 0 THEN RGBEGIN # IN:OW HAS NOT BEEN TYPED
0011232 06 000173 014000 -----          -002- 26          TZ      RO
0011233 06 000174 055002 -----          0011235 -001- 27          BNC     IFS1947
0011234          28          RTN_NG
0011234          29          RETURN  TTY_NG
0011234 06 000175 156467 -----          TTYTBL -001- 30          BTSAN  TTY_NG
0011235          31          RGEND
0011235          -001- 32 IFS1947

```

```

35 # CHECK THAT ONLY GENERIC OR ONLY TRANSLATION ADDRESSES ARE INSERTED.
36 # IT IS ASSUMED THAT THE BOUNDARY BETWEEN GENERIC AND TRANSLATION(I.E. 'TDATA')
37 # IS ON A 16-WORD BOUNDARY.

```

```

0011235 06 000176 131402 020000 TDATA          38          LAL     RO,TDATA,RA1
0011237 06 000200 016376 000017          39          IRM     RA1+1,RA1,MSK(4)
0011241 06 000202 010764 -----          40          RRN     R15,4          # SET UP TDATA ADDRESS
0011242 06 000203 006351 -----          41          LR      R14,R9
0011243 06 000204 016350 000017          42          IRM     R14,R8,MSK(4)
0011245 06 000206 010744 -----          43          RRN     R14,4
0011246          44          IF      R14 >= R15 THEN RGBEGIN
0011246 06 000207 006016 -----          -003- 45          LR      RO,R14
0011247 06 000210 005017 -----          -003- 46          SR      RO,R15
0011250 06 000211 055015 -----          0011265 -001- 47          BNC     IFS1951
0011251 06 000212 031400 010052 0010052          48 # ADDRESS IS TRANSLATION
          49          LAL     RO,OWBUFFER,RA1

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 159

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

INPUT OVERWRITE DATA

CNRUTL W77D

```

0011253 06 000214 051445 ----- 01 TBS N(OWTYPE)(RA1),S(OWTYPE)
0011254 06 000215 054016 ----- 0011272 -001- 02 IF CF = 1 THEN B PASSED_CHK
0011255 06 000216 030400 010041 0010041 -002- 03 BC PASSED_CHK
0011257 06 000220 003404 000002 -002- 04 IF SEQKEY = 2 THEN RGBEGIN
0011261 06 000222 054003 ----- 0011264 -001- 05 LL RD,SEQKEY
0011262 06 000223 061445 ----- 08 XI RD,2
0011263 06 000224 053007 ----- 0011272 -001- 07 BC IFS1955
0011264 06 000225 156467 ----- TTYTBL -001- 08 SBS N(OWTYPE)(RA1),S(OWTYPE)
0011265 06 000226 131400 010052 0010052 09 B PASSED_CHK
0011266 06 000230 051445 ----- 10 RGEND
0011270 06 000231 055002 ----- 0011272 -001- 11 IFS1955
0011271 06 000232 056467 ----- TTYTBL -001- 12 RETURN TTY_NG # TRNSLN ADDRESS ILLEGAL
0011272 06 000233 110574 ----- 13 BTSAN TTY_NG
0011273 06 000234 016170 000017 14 RGEND
0011275 06 000236 006211 ----- 15 IFS1951
0011276 06 000237 006235 ----- 16 # ADDRESS IS GENERIC
0011277 06 000240 010710 ----- 17 LAL RD,OWBUFFER,RA1
0011300 06 000241 016254 177400 18 TBS N(OWTYPE)(RA1),S(OWTYPE)
0011302 06 000243 031440 010052 0010052 19 IF CF = 1 THEN RETURN TTY_NG # GENERIC ADDRESS ILLEGAL
0011304 06 000245 003066 ----- 20 BNC IFS1960
0011305 06 000246 003106 ----- 21 BTSAN TTY_NG
0011306 06 000247 143424 ----- 22 IFS1960
0011307 06 000250 006316 ----- 25 PASSED_CHK
0011310 06 000251 006337 ----- 26 RLN R7,4
0011311 06 000252 003106 ----- 27 IRM R7,R8,MSK(4)
0011312 06 000253 003141 ----- 28 LR R8,R9
0011313 06 000254 006003 ----- 29 LR R9,R13
0011314 06 000255 005002 ----- 30 RRN R12,8
31 IRM R10,R12,MSK(8,8)
32 # R7-R11 CONTAINS A 5-WORD DATA ENTRY FOR THE OWBUFFER
33 LAL R2,OWBUFFER,RA1
34 LN R3,N(EOH)
35 LN R4,N(EOH)
36 TESTEOB
37 # R2 = TOTAL LENGTH OF ACTIVE OWBUFFER
38 # R3 = TOTAL LENGTH OF OWBUFFER SCANNED THIS FAR
39 # R4 = INCREMENT TO GET TO NEXT ORIGIN BLOCK IN OWBUFFER
40 # RA1 = BEGINNING OF LAST ORIGIN BLOCK IN OWBUFFER
41 LAX R1,R4(RA1)
42 LR RA0,RA1 # SET UP FOR INSERTDATA
43 LR RA0+1,RA1+1
44 LN R4,6 # SET UP FOR CASE WHERE BRANCH TO INSERT
DATA OCCURS
46 LN R6,1 # CREATE A 6-WORD HOLE TO ENTER 1 ESS WORD
47 IF R3 >= R2 THEN B INSERTDATA
-003- 48 LR R0,R3
-003- 49 SR R0,R2

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50.

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 160

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

INPUT OVERWRITE DATA

CNRUTL W77D

```

0011315 06 000256 054116 ----- 0011433 -001- 01      BC      INSERTDATA
                                03 # IN THE FOLLOWING:
                                04 # X IS THE INPUT ADDRESS (INCLUDING SEGMENT NUMBER) IN R7 AND R8
                                05 # A IS THE BASE ADDRESS OF THE ORIGIN BLOCK CURRENTLY BEING SCANNED
                                06 # L IS THE NUMBER OF WORDS IN THE SAME ORIGIN BLOCK
                                07 # A' IS THE BASE ADDRESS OF THE ORIGIN BLOCK FOLLOWING THE CURRENT ONE
                                08
                                09 # THERE ARE SIX POSSIBLE CASES EACH TIME AN ORGBLK IS EXAMINED.
                                10 # THE CASES AND THE ASSOCIATED ACTIONS ARE AS FOLLOWS:
                                11 # X>A+L          CONTINUE SEARCH WITH NEXT ORGBLK
                                12 # (X=A+L)&(X=A'-1)  ADD NEW DATA AND MERGE THIS ORGBLK WITH THE FOLLOWING ONE
                                13 # (X=A+L)&(X=A'-1)  ADD NEW DATA TO THE END OF THIS ORGBLK
                                14 # A<X<X+L          CHANGE DATA IN THIS ORGBLK
                                15 # X=A-1            ADD NEW DATA TO THE BEGINING OF THIS ORGBLK
                                16 # X<A-1            ADD ORGBLK WITH NEW DATA BEFORE THIS ORGBLK

0011316
                                18 # IF X > A+L THEN CONTINUE SEARCH
                                19      L      R4,N(OBLKADR)(RA1) # GET A
                                20      L      R5,N(OBLKADR)+1(RA1) # GET A
                                21      ARL     R4,R1          # A+L
                                22      AR      R4+1,R1
                                23      BNC     IFS1965
                                24      AN      R4,1
                                25      IF      R7 > R4 THEN B CONTRSCH
                                26      LR      R0,R4
                                27      SR      R0,R7
                                28      BNC     CONTRSCH
                                29      IF      R7 = R4 THEN RGBEGIN
                                30      CR      R7,R4
                                31      BNC     IFS1969
                                32      IF      R8 > R5 THEN RGBEGIN
                                33      LR      R0,R5
                                34      SR      R0,R8
                                35      BC      IFS1971
                                36      CONTRSCH
                                37      R4      =      R1 /RL 1 + R1 + 3 # R4 = 3*R1 + 3
                                38      LR      R4,R1
                                39      RLN     R4,1
                                40      AR      R4,R1
                                41      AN      R4,3
                                42      AR      R3,R4
                                43      B      TESTEOB
                                44      RGEND
                                45      IFS1971
                                46      RGEND
                                47      IFS1969

0011316 06 000257 040501 -----
0011317 06 000260 040522 -----
0011320
0011320 06 000261 001521 ----- -001- 22
0011321 06 000262 055002 ----- 0011323 -001- 23
0011322 06 000263 004501 ----- -001- 24
0011323
0011323 06 000264 106004 ----- -003- 26
0011324 06 000265 005007 ----- -003- 27
0011325 06 000266 055006 ----- 0011333 -001- 28
0011326
0011326 06 000267 020164 ----- -002- 30
0011327 06 000270 055012 ----- 0011341 -001- 31
0011330
0011330 06 000271 006005 ----- -003- 33
0011331 06 000272 005010 ----- -003- 34
0011332 06 000273 054007 ----- 0011341 -001- 35
0011333
0011333 06 000274 106101 ----- -004- 38
0011334 06 000275 010517 ----- -005- 39
0011335 06 000276 001501 ----- -004- 40
0011336 06 000277 004503 ----- -004- 41
0011337 06 000300 001464 -----
0011340 06 000301 053746 ----- 0011306 43
0011341
0011341 -001- 45 IFS1971
0011341 46      RGEND
0011341 -001- 47 IFS1969

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 161

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

INPUT OVERWRITE DATA

CNRUTL

W77D

```

0011341 06 000302 140501 ----- 01 # IF X < A THEN CHECK FOR SPECIAL CASE X=A-1
0011342 06 000303 040522 ----- 02 L R4,N(OBLKADR)(RA1) # LOAD R4,R5 WITH A
0011343 06 000304 006007 ----- 03 L R5,N(OBLKADR)+1(RA1)
0011343 06 000304 006007 ----- -003- 04 IF R7 < R4 THEN B X_LT_A
0011344 06 000305 005004 ----- -003- 05 LR R0,R7
0011345 06 000306 055006 ----- 0011353 -001- 06 SR R0,R4
0011346 06 000307 020164 ----- -002- 07 BNC X_LT_A
0011347 06 000310 055007 ----- 0011356 -001- 08 IF R7 = R4 THEN RGBEGIN
0011350 06 000311 006010 ----- -003- 09 CR R7,R4
0011351 06 000312 005005 ----- -003- 10 BNC IFS1987
0011352 06 000313 054004 ----- 0011356 -001- 11 IF R8 < R5 THEN RGBEGIN
0011353 06 000314 103106 ----- -003- 12 LR R0,R8
0011354 06 000315 003141 ----- -003- 13 SR R0,R5
0011355 06 000316 053042 ----- 0011417 -001- 14 BC IFS1989
0011356 06 000317 106110 ----- 15 X_LT_A
0011357 06 000320 005105 ----- 16 LN R4,6 # SET UP FOR X<A CASE
0011360 06 000321 006124 ----- 17 LN R6,1 # CREATE 6-WORD HOLE FOR 1 ESS WORD
0011361 06 000322 010537 ----- 18 B SPECCASE # CHECK FOR SPECIAL CASE
0011362 06 000323 001524 ----- 19 RGEN # X >= A
0011363 06 000324 004523 ----- 20 IFS1989 # X >= A
0011364 06 000325 020101 ----- -001- 21 RGEN
0011365 06 000326 054023 ----- 22 IFS1987
0011366 06 000327 047625 ----- 24 # IF A <= X < A+L THEN CHANGE DATA
0011367 06 000330 044641 ----- 25 LR R4,R8
0011370 06 000331 044662 ----- 26 SR R4,R5 # R4 = X - A, ASSUMES DIFFERENCE IS LESS
0011371 06 000332 003541 001600 TTYBL -004- 28 R5 = R4 /RL 1 + R4 + 3 # R5=3*R4+3
0011373 06 000334 003164 ----- 29 LR R5,R4
0011374 06 000335 173053 ----- -005- 30 RLN R5,1
0011375 06 000336 100200 ----- -004- 31 AR R5,R4
0011376 06 000337 021040 ----- -004- 32 AN R5,3
0011377 06 000338 000000 ----- 33 IF R4 = R1 THEN RGBEGIN
0011378 06 000339 000000 ----- -002- 34 CR R4,R1
0011379 06 000340 000000 ----- 0011410 -001- 35 BC IFS2002
0011380 06 000341 000000 ----- 36 STAX R9,R5(RA1) # CHANGE DATA
0011381 06 000342 000000 ----- 37 ST R10,1(RA1)
0011382 06 000343 000000 ----- 38 ST R11,2(RA1)
0011383 06 000344 000000 ----- 39 SPELL R6,(W,A,R,N)
0011384 06 000345 000000 ----- -001- 40 LI R6,WXARN
0011385 06 000346 000000 ----- 41 LN R7,TTY_OK
0011386 06 000347 000000 ----- 42 INOWDATAERR
0011387 06 000348 000000 ----- 43 PRINT FMT=(WRD(I,N),WRD(O,W,D,A,T,A),WRD)
0011388 06 000349 000000 ----- -001- 45 # MESSAGE PROTOTYPE
0011389 06 000350 000000 ----- -001- 46 # mm IN OWDATA WRD
0011390 06 000351 000000 ----- -002- 47 BSAI PXMRY # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
0011391 06 000352 000000 ----- -002- 48 VFD 1,1 2,0 1,0 3,0 1,0 1,1 1,0 2,0 1,0 3,0
0011392 06 000353 000000 ----- -002- 49 VFD 4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_WRD

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 162

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

INPUT OVERWRITE DATA

CNRUTL W77D

```

0011377 06 000340 021042 ----- -002- 01 VFD 4,TTYO_4,TTYO_4,TTYO_4,TTYO_
0011400 06 000341 010021 ----- TTYTBL -002- 02 VFD 5,2 11,IXN
0011401 06 000342 000203 ----- TTYTBL -002- 03 VFD 5, 11,OXWDATA
-001- 04 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS R6,
RO,R7

0011402 06 000343 106007 ----- 06 LR
0011403 06 000344 056400 ----- -001- 07 RETURN
0011404 09 INOWDATANG 08 BTSA
10 SPELL R6,(E,R,R)
-001- 11 LI R6,EXRR
12 LN R7,TTY_NG
13 B INOWDATAERR
14 RGEN
-001- 15 IFS2002

17 # X=A+L
0011410 06 000351 106141 ----- 18 LR R6,R1
0011411 06 000352 004541 ----- 19 AN R6,1 # ADD 1 MORE ESS WORD TO THIS ORGBLK
0011412 06 000353 043405 ----- 20 LAX RO,R5(RA1) # ADJUST POINTERS TO END OF ORGBLK,IE, A+L
0011413 06 000354 001465 ----- 21 AR R3,R5
0011414 06 000355 003103 ----- 22 LN R4,3 # CREATE 3-WORD HOLE FOR NEW DATA
0011415 06 000356 020043 ----- 23 CR R2,R3
0011416 06 000357 054015 ----- 0011433 24 BC INSERTDATA # IF RA1 IS NOW POINTING TO BOTTOM OF
CURRENT BUFFER CONTENTS, DO NOT TRY TO
MERGE IN

28 # NEXT THE CHECK FOR THE SPECIAL CASES X=A-1 OR X=A'-1 WILL BE MADE.
29 # RA1 POINTS TO BEGINNING OF THIS ORGBLK FOR X<A CASE OR TO THE BEGINNING
30 # OF NEXT ORGBLK FOR X=A+L CASE
31 SPECCASE
0011417 32 L RO,N(OBLKADR)(RA1) # RO,R1=A OR A'
0011420 06 000360 140401 ----- 33 L R1,N(OBLKADR)+1(RA1)
0011421 34 SNL RO,1 # RO,R1=A-1 OR A'-1
0011421 06 000362 004037 ----- -001- 35 SN RO+1,1
0011422 06 000363 054002 ----- 0011424 -001- 36 BC IFS2022
0011423 06 000364 004017 ----- -001- 37 SN RO,1
0011424 38 IF RO = R7 THEN RGBEGIN
0011424 06 000365 120007 ----- 0011433 -002- 39 CR RO,R7
0011425 06 000366 055006 ----- -001- 40 BNC IFS2023
0011426 41 IF R1 = R8 THEN RGBEGIN # DO RANGE IF X=A-1 OR X=A'-1
0011426 06 000367 020030 ----- -002- 42 CR R1,R8
0011427 06 000370 055004 ----- 0011433 -001- 43 BNC IFS2025
0011430 06 000371 040400 ----- 44 L RO,N(OBLKLG)(RA1)
0011431 06 000372 001540 ----- 45 AR R6,RO # ADJUST LENGTH OF THIS ORGBLK TO ACCOUNT FOR
ADDED DATA OR MERGING BLOCKS
0011432 06 000373 004115 ----- 47 SN R4,3 # SPECIAL CASES REQUIRE HOLES WHICH ARE THREE
WORDS SMALLER
0011433 49 RGEN

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COMMON NONRESIDENT UTILITIES

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OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

INPUT OVERWRITE DATA

CNRUTL W77D

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0011433 -001- 01 IFS2025
0011433      02          RGEND
0011433 -001- 03 IFS2023
0011433      04 INSERTDATA
0011433      05 R1 = R2 + R4 # CALCULATE TOTAL BUFFER LENGTH AFTER THIS
                                     ADDITION

0011433 06 000374 106022 ----- -004- 07 LR R1,R2
0011434 06 000375 001424 ----- -004- 08 AR R1,R4
0011435      09 IF R1 >= TBLSIZ(OWBUFFER)+1 THEN RGBEGIN # BUFFER OVERFLOW
0011435 06 000376 006001 ----- -003- 10 LR R0,R1
0011436 06 000377 003400 177012 -003- 11 SI R0,TBLSIZ(OWBUFFER)+1
0011440 06 000401 055011 ----- 0011451 -001- 12 BNC IFS2034
0011441      13 PRINT FMT=(WRD(I,N),WRD(O,W,D,A,T,A),WRD(S,T,O,P,P,E,D))

-001- 15 # MESSAGE PROTOTYPE
-001- 16 # mm IN OWDATA STOPPED
0011441 06 000402 073053 ----- -002- 17 BSAI PXMRY # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
0011442 06 000403 100200 ----- -002- 18 VFD 1,1 2,0 1,0 3,0 1,0 1,1 1,0 2,0 1,0 3,0
0011443 06 000404 021040 ----- -002- 19 VFD 4,TTYO_4,TTYO_4,TTYO_4,TTYO_WRD
0011444 06 000405 021042 ----- -002- 20 VFD 4,TTYO_4,TTYO_4,TTYO_4,TTYO_
0011445 06 000406 014021 ----- TTYTBL -002- 21 VFD 5,3 11,IXN
0011446 06 000407 000203 ----- TTYTBL -002- 22 VFD 5, 11,OXWDATA
0011447 06 000410 000346 ----- TTYTBL -002- 23 VFD 5, 11,SXTOPPED
-001- 24 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
                                     CONTAINED IN GENERAL REGISTERS

0011450      26 RETURN TTY_PF
0011450 06 000411 156463 ----- TTYTBL -001- 27 BTSAN TTY_PF
0011451      28 RGEND
0011451 -001- 29 IFS2034
0011451 06 000412 134420 010052 0010052. 30 STL R1,OWBUFFER # UPDATE POINTER, MESSAGE CANNOT FAIL BEYOND
                                     THIS POINT
32 # R4 = SIZE OF HOLE TO BE CREATED
33 # RAO = FIRST ADDRESS OF ORIGIN BLOCK TO BE ADDED OR EXTENDED
34 # RA1 = BEGINNING ADDRESS OF HOLE
0011453      35 IF R4 - 6 THEN ST R6,O(RAO) # UPDATE LENGTH OF ORIGIN BLOCK
0011453 06 000414 003505 000006 -002- 36 CI R4,6
0011455 06 000416 054002 ----- 0011457 -001- 37 BC IFS2052
0011456 06 000417 044140 ----- -001- 38 ST R6,O(RAO) # UPDATE LENGTH OF ORIGIN BLOCK
0011457 -001- 39 IFS2052
0011457 06 000420 106135 ----- 40 LR R5,R13 # SAVE R13 FOR LATER TEST
0011460 06 000421 006316 ----- 41 LR RAO,RA1
0011461 06 000422 006337 ----- 42 LR RAO+1,RA1+1
0011462 06 000423 043424 ----- 43 LAX R1,R4(RA1)
44 RO = R2 - R3 # CALCULATE THE NUMBER OF WORDS TO MOVE
0011463 06 000424 006002 ----- -004- 45 LR R0,R2
0011464 06 000425 005003 ----- -004- 46 SR R0,R3
0011465      47 CALL MOVST
0011465 06 000426 073033 ----- -001- 48 BSAI MXOVST # SUBROUTINE MOVST IS IN PROGRAM CSYSUB
0011466      49 IF R5 = R13 THEN RGBEGIN

```

COMMON NONRESIDENT UTILITIES

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OVERWRITE MULTISCAN FUNCTION

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INPUT OVERWRITE DATA

CNRUTL W77D

0011466	06	000427	120135	-----	-002-	01		CR	R5,R13
0011467	06	000430	055005	-----	0011474	-001-	02	BNC	IFS2060
0011470	06	000431	044140	-----			03	ST	R6,0(RAO)
0011471	06	000432	044161	-----			04	ST	R7,1(RAO)
0011472	06	000433	044202	-----			05	ST	R8,2(RAO)
0011473	06	000434	041003	-----			06	LA	RD,3(RAO)
0011474							07	RGEND	
0011474					-001-	08	IFS2060		
0011474	06	000435	144220	-----			09	ST	R9,0(RAO)
0011475	06	000436	044241	-----			10	ST	R10,1(RAO)
0011476	06	000437	044262	-----			11	ST	R11,2(RAO)
0011477	06	000440	003002	-----			12	LN	RD,2
0011500	06	000441	034400	010041 0010041			13	STL	RD,SEQKEY
0011502							15	RETURN	TTY_OK
0011502	06	000443	056464	-----	TTYTBL	-001-	16	BTSAN	TTY_OK

SET SEQKEY TO ALLOW ALL MESSAGES - AN OM
HAS BEEN ENTERED

COMMON NONRESIDENT UTILITIES

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OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

INPUT OVERWRITE

CNRUTL W77D

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0011503      01 INOW
02 # THIS MESSAGE HAS TWO FORMS:
03 #   IN:OW nnnnn;TTY!
04 #   IN:OW nnnnn;TAPE!
05 # THE TTY OPTION INITIATES A NEW OVERWRITE ENTRY AND THE TAPE OPTION
06 # CAUSES A TRANSFER OF AN OVERWRITE FROM THE OVERWRITE FILE TO THE OWBUFFER.
07 # FOR THE TTY OPTION, THE GENERIC AND ISSUE IDENTIFIERS ARE VERIFIED.
08 # THIS OPERATION ASSUMES THE GENISS BUFFER HAS BEEN LOADED VIA THE
09 # IN:GENID AND IN:ISSID INPUT MESSAGES. THE VERIFICATION COMPARES
10 # THE CONTENT OF THE GENISS BUFFER AND SIMILAR INFORMATION IN THE PATCH
11 # FILE HEADER. IF THE DATA MISMATCHES, THE REQUEST IS FAILED.
12 # IF THIS CHECK PASSES OR IF THE TAPE OPTION IS SPECIFIED, THE PATCH FILE
13 # IS SEARCHED FOR THE EXISTENCE OF AN OVERWRITE WHOSE NUMBER IS nnnnn.
14 # SUCH AN OVERWRITE SHOULD BE PRESENT IF THE TAPE OPTION IS SPECIFIED, BUT
15 # SHOULD NOT EXIST IF THE TTY OPTION IS SPECIFIED. CONSEQUENTLY, THIS
16 # REQUEST IS FAILED IF THE OVERWRITE EXISTS WHEN IT SHOULD NOT OR VICE VERSA.
17 # IF ALL THESE CHECKS PASS, THE REQUEST IS HONORED. FOR THE TAPE OPTION,
18 # THE RECORD IN THE PATCH FILE CONTAINING OVERWRITE NUMBER nnnnn IS COPIED
19 # TO THE OWBUFFER BUFFER. FOR THE TTY OPTION, THE HEADER FOR THE
20 # OVERWRITE RECORD IS FORMATTED IN OWBUFFER. THIS CONSISTS OF INSERTING
21 # THE HEADER LENGTH, THE OVERWRITE NUMBER, AND THE CURRENT TIME OF DAY.

0011503      23      BEGIN      ( )
0011503      24      CALL      FRSTCHK
0011503 06 000444 137020 014561 0014561 -001- 25      BSA      FRSTCHK
0011505      26      IF      CF = 0 THEN RETURN
0011505 06 000446 154002 ----- 0011507 -001- 27      BC      IFS2071
0011506 06 000447 056400 ----- -002- 28      BTSA
0011507      29      IFS2071
0011507 06 000450 106047 ----- -001- 30      LR      R2,R7      # MOVE OPTIONS
0011510 06 000451 003445 000261 TTYTBL -001- 31      SPELL   R2,(T,T,Y),OP=CI
0011512      32      CI      R2,TTY
0011512 06 000453 055003 ----- 0011515 -001- 33      IF      CF = 1 THEN RGBEGIN
0011513 06 000454 026160 ----- -001- 34      BNC     IFS2076
0011514 06 000455 053007 ----- 0011523 -001- 35      SBN     TTY_OP,S(TTY_OP)
0011515      36      B      INOWCONT
0011515      37      RGEND
0011515      38      IFS2076
0011515 06 000456 103445 000242 TTYTBL -001- 39      SPELL   R2,(T,A,P,E),OP=CI
0011517      40      CI      R2,TAPE
0011517 06 000460 055003 ----- 0011522 -001- 41      IF      CF = 1 THEN RGBEGIN
0011520 06 000461 022160 ----- -001- 42      BNC     IFS2081
0011521 06 000462 053002 ----- 0011523 -001- 43      ZBN     TTY_OP,S(TTY_OP)
0011522      44      B      INOWCONT
0011522      45      RGEND
0011522      46      IFS2081
0011522      47      RETURN  TTY_NG
0011522 06 000463 156467 ----- TTYTBL -001- 48      BTSAN  TTY_NG

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COMMON NONRESIDENT UTILITIES

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OVERWRITE MULTISCAN FUNCTION

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INPUT OVERWRITE

CNRUTL W77D

```

0011523          01 INOWCONT
0011523          02 # LR OWMUM,R6 (NOT REQUIRED)
0011523          03 RTB TTYIN
0011523 06 000464 103601 000347 -001- 04 LI RTBPM,*-RTBPMORG+4
0011525 06 000466 037000 014722 0014722 -001- 05 BL ADVPMTTYIN

0011527 06 000470 103000 ----- 08 ZR R0
0011530 06 000471 034400 010041 0010041 09 STL R0,SEQKEY # LOCK OUT TTY REQUESTS UNTIL 'IN OW COMPL'
                                     IS GIVEN
0011532 06 000473 003020 ----- 11 ZR R1
0011533 06 000474 037020 126205 CTAPH -002- 12 OPEN OVWCLNT,(P,A,T,C,H)
0011535 06 000476 014102 ----- -001- 13 BSA OPENTCB
0011536 06 000477 050101 ----- -001- 14 VFD 5,OVWCLNT 1,0 1,0 2,0 3,((5+1)/2)+1 1,0 3,((5+1)/2)-1
0011537 06 000500 152303 ----- -001- 15 VFD 8,ASC_P 8,ASC_A
0011540 06 000501 044000 ----- -001- 16 VFD 8,ASC_T 8,ASC_C
0011541 06 000502 155114 ----- 0011655 17 VFD 8,ASC_H 8,ASC_
0011542          18 BNC REQFAIL_
0011542          19 RTB TAPE
0011542 06 000503 037020 014676 0014676 -001- 20 BSA ADVPMTAPE

0011544          23 IF TTY_OP THEN RGBEGIN
0011544 06 000505 124160 ----- -004- 24 TBN TTY_OP,S(TTY_OP)
0011545 06 000506 055025 ----- 0011572 -002- 25 BNC IFS2089
26 # VERIFY THE GENERIC AND ISSUE IDENTIFIERS AS RECORDED IN THE GENISS BUFFER.
0011546 06 000507 073047 ----- -002- 27 RD1BLK OVWCLNT,DUMUNLOD
0011547 06 000510 014400 011161 0011161 -001- 28 BSAI RXEQR # SUBROUTINE REQR IS IN PROGRAM CTAPH
0011551          29 ADDR DUMUNLOD,OVWCLNT*(7)+RD1BLK*(3)
0011551 06 000512 137020 014676 0014676 -001- 30 RTB TAPE
0011551          31 BSA ADVPMTAPE

0011553 06 000514 131000 010042 0010042 34 LAL R0,GENISS,RA0
0011555 06 000516 031400 045271 CTAPH 35 LAL R0,I_OBUF+I_OBUFD+2,RA1
0011555          36 OWPROG OW 0(520) # 3E800117
-001- 37 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000520
                                     *****

0011557 06 000520 003003 ----- 41 # CHECK THE GENERIC ID.
0011560          42 LN R0,3 # SET BX VALUE TO LOOK AT FOUR WORDS, TWO
                                     CHARACTERS EACH.
-001- 44 EOW # 3E800117
45 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000520
                                     *****

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COMMON NONRESIDENT UTILITIES

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OVERWRITE MULTISCAN FUNCTION

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INPUT OVERWRITE

CNRUTL W77D

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0011560                                01 GENISSLP
0011560 06 000521 142020 -----        02 LX R1,RO(RAO)
0011561 06 000522 042440 -----        03 LX R2,RO(RA1)
0011562                                04 IF R1 = R2 THEN B INOWFAIL # IDENTIFIER MISMATCHED
0011562 06 000523 020022 -----        05 CR R1,R2
0011563 06 000524 055022 ----- 0011605 -002- 06 BNC INOWFAIL
                                           -001- 07 OWPROG O(525) # 3E800117
                                           -001- 08 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000525
                                           *****

0011564 06 000525 037000 121522 0000264 -001- 12 CPATCH7 BGNP O(264) # 3E800117
                                           -001- 13 BL %XX2103
                                           -001- 14 NOTE CPATCH7 'CSECT'
                                           -001- 15 NOTE ***** PATCH AREA BEGINS AT 000264 *****
                                           *

0121522                                -001- 19 %XX2103 PATCHAREA
0121522 14 000264 136000 011560 0000521 20 BX RO,GENISSLP # GET NEXT SET OF CHARACTERS TO COMPARE
                                           21 # NOW CHECK ISSUE ID
                                           22 # THE FIRST TWO CHARACTERS OF THE ISSID ON TAPE MUST
                                           23 # MATCH ONE OF FOUR TWO CHARACTER ID'S TYPED IN
0121524 14 000266 003003 -----        24 LN RO,3 # SET BX VALUE TO LOOK AT FOUR WORDS, TWO
                                           # CHARACTERS EACH.
0121525 14 000267 041044 -----        26 LA R2,4(RAO) # POSITION RAO TO AREA HOLDING TYPED IN ISSUE
                                           # ID'S
0121526 14 000270 041424 -----        28 LA R1,4(RA1) # GET ISSUE NUMBER STORED ON TAPE
0121527                                29 ISSLP
0121527 14 000271 142040 -----        30 LX R2,RO(RAO) # GET NEXT TYPED IN ISSUE NUMBER
0121530 14 000272 020022 -----        31 CR R1,R2 # IS THE ISSUE ID TYPED AND THE ISSUE ID FROM
                                           # TAPE THE SAME ?
0121531                                33 IF CF = 1 THEN RGBEGIN
0121531 14 000273 054005 ----- 0121536 -001- 34 BC IFS2105
0121532 14 000274 036000 121527 0121527 35 BX RO,ISSLP # GET NEXT TWO CHARACTERS FOR COMPARE
0121534 14 000276 037000 011605 0000546 36 BL INOWFAIL # FAILURE, NONE OF THE ISSUE ID'S TYPED
                                           # COMPARED TO ISSUE ID FROM TAPE

0121536                                38 RGEND
0121536                                -001- 39 IFS2105
0121536                                40 ENDP # 3E800117
0121536 14 000300 137000 011566 0000527 -001- 41 BL %XX2107
                                           -001- 42 NOTE ***** LAST PATCH ADDRESS USED IS 000301 *****
                                           *
                                           -001- 44 NOTE ***** NUMBER OF PATCH WORDS USED IS 14 (DECIMAL) *****

```

COMMON NONRESIDENT UTILITIES

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OVERWRITE MULTISCAN FUNCTION

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INPUT OVERWRITE

CNRUTL W77D

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0011566      -001- 01 XXX2107  OWCONTINUE
0011566      02          EOW          # 3E80D117
-001- 03      NOTE          ***** THE LAST ADDRESS OVERWRITTEN IS 000526
                        *****

                                07          BACKSP  OVMCLNT      # REPOSITION TAPE FOR SEARCH
0011566 06 000527 173047 ----- -002- 08          BSAI    RXEQR      # SUBROUTINE REQR IS IN PROGRAM CTAPH
0011567 06 000530 016100 137020 -001- 09          VFD    5,OVMCLNT 4,BACKSP 1,1 1,0 5,0
0011570      10          RTB    TAPE
0011570 06 000531 137020 014676 0014676 -001- 11          BSA    ADVPNTAPE

0011572      14          RGEND
0011572      -001- 15 IFS2089
0011572 06 000533 106006 ----- 16          LR     RO,OWNUM
0011573      17          CALLPROC SEARCH
0011573 06 000534 003641 000417 -001- 18          LI     PROCPM,*-RTBPMORG+4
0011575 06 000536 037000 014047 0014047 -001- 19          BL     SEARCH

0011577 06 000540 124160 ----- 21          TBN    TTY OP,S(TTY_OP)
0011600 06 000541 030001 ----- 22          ICF    RO,1
                                23 # RO: 0--(TAPE, NOT FOUND) 1--(TAPE,FOUND) 2--(TTY,NOT FOUND) 3--(TTY,FOUND)
0011601 06 000542 056000 ----- 24          BPAX   RO
0011602 06 000543 153003 ----- 0011605 25          B     INOWFAIL      # OW SHOULD HAVE EXISTED AND DID NOT
0011603 06 000544 153004 ----- 0011607 26          B     RDRECORD
0011604 06 000545 153014 ----- 0011620 27          B     FMTOWBUFFER
0011605      28 INOWFAIL
0011605 06 000546 137000 014630 0014630 29          BL     REQFAIL

0011607      33 RDRECORD
0011607      34 # TAPE OPTION--COPY OW RECORD FROM THE PATCH FILE TO OWBUFFER.
0011607 06 000550 103641 000433 -001- 35          CALLPROC RDOWRCRD
0011611 06 000552 037000 014117 0014117 -001- 36          LI     PROCPM,*-RTBPMORG+4
0011613 06 000554 103002 ----- 37          BL     RDOWRCRD
0011614 06 000555 034400 010041 0010041 38          LN     RO,2
0011616 06 000557 037000 014625 0014625 39          STL   RO,SEQKEY      # SET SEQUENCE KEY TO ALLOW ALL OW MESSAGES
                                40          BL     REQPASS

0011620      44 FMTOWBUFFER
0011620 06 000561 171420 ----- 45 # TTY OPTION---FORMAT OW RECORD HEADER IN OWBUFFER.
0011621 06 000562 031400 043452 CTSD 46          HA
0011623      47          LAL   RO,YEARS,RA1
0011623 06 000564 037020 110756 CSYSUB -001- 48          CALL  L2_7
                                49          BSA   L2_7

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COMMON NONRESIDENT UTILITIES

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OVERWRITE MULTISCAN FUNCTION

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0011625	06	000566	110470	-----		01	RLN	R3,8	
0011626	06	000567	016103	177400		02	IRM	R4,R3,MSK(8,8)	# R4=MONTH,DAY
0011630	06	000571	010450	-----		03	RLN	R2,8	
0011631	06	000572	016122	177400		04	IRM	R5,R2,MSK(8,8)	# R5=YEAR, HOUR
0011633	06	000574	010550	-----		05	RLN	R6,8	
0011634	06	000575	016147	000377		06	IRM	R6,R7,MSK(8)	# R6=MINUTES,SECONDS
0011636	06	000577	072066	-----		07	GN	R2+N(OWNO),OWNUM	
0011637	06	000600	003046	-----		08	LN	R2+N(OWTLEN),N(EOH)	
0011640	06	000601	003160	-----		09	LN	R2+N(OWSTAT),O+ES(OWTYPE)+OWINACT*ES(OWSTAT)	# INITIALIZE CW STATUS TO INACTIVE & OW TYPE TO GENERIC
0011641	06	000602	035440	010052	0010052	11	STAL	R2,OWBUFFER,RA1	
0011643						12	CALL	ST2_7	
0011643	06	000604	037020	111011	CSYSUB	-001-	13	BSA	ST2_7
0011645	06	000606	171400	-----		14	GA		
0011646	06	000607	003001	-----		15	LN	RO,1	
0011647	06	000610	034400	010041	0010041	16	STL	RO,SEQKEY	# SET SEQUENCE KEY TO ALLOW IN:OWDATA MESSAGE
0011651						18	CALL	PAPERON	
0011651	06	000612	037020	161223	CITYH	-001-	19	BSA	PAPERON
0011653	06	000614	137000	014625	0014625	20	BL	REQPASS	
0011655						24	REQFAIL		
0011655	06	000616	137000	014630	0014630	25	BL	REQFAIL	

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OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

OUTPUT OVERWRITE BUFFER

CNRUTL W77D

```

01 OWPROG OW 0(620) # 12280
-001- 02 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000620 *****

0011657 05 OPOW
06 # THIS MESSAGE HAS TWO FORMS:
07 #   OP:OW;TTY!
08 #   OP:OW;TAPE!
09 # THE TTY OPTION PRINTS THE CONTENTS OF THE OWBUFFER AS A LINKED TTY
10 # OUTPUT MESSAGE. THE TAPE OPTION APPENDS THE OVERWRITE RECORD IN OWBUFFER
11 # TO THE END OF THE PATCH FILE ON TAPE. THE TWO OPTIONS ARE COMPLETELY
12 # INDEPENDENT. THE CODE TO PERFORM THE TAPE OPTION APPEARS FIRST. THE PATCH
13 # FILE IS SEARCHED FOR AN OVERWRITE OF THE SAME NUMBER AS THE ONE IN OWBUFFER.
14 # THE SEARCH SHOULD FAIL. IF IT SUCCEEDS, THIS REQUEST IS FAILED.
15 # AFTER THE SEARCH, THE TAPE IS POSITIONED AT THE END OF THE PATCH FILE AND THE
16 # RECORD IN OWBUFFER IS ADDED TO THE FILE.
17
0011657 18 # THE FIRST LINK PRINTED FOR THE TTY OPTION IS IN OW N, WHERE N IS THE
19 # NUMBER OF THE OVERWRITE IN OWBUFFER. THIS IS FOLLOWED BY ONE LINK FOR
20 # EACH ADDRESS CONTAINED IN THE OVERWRITE RECORD IN OWBUFFER. THE TOTAL
21 # NUMBER IS THE SUM OF THE LENGTHS OF EACH ORGBLK (SEE DESCRIPTION AT
22 # SYMBOL INOWDATA FOR AN EXPLANATION OF ORGBLK). EACH LINK HAS THE
23 # FORMAT IN OWDATA SEG ADR OLD NEW. AFTER ALL THE DATA HAS BEEN
24 # TYPED, A NULL LINK IS PRINTED IN ORDER TO TERMINATE THE LINKED OUTPUT MESSAGE.

0011657 25 CALL FRSTCHK
0011657 06 000620 137020 014561 0014561 -001- 26 BSA FRSTCHK
0011661 27 EOW # 12280
-001- 28 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000621 *****

0011661 31 IF CF = 0 THEN RETURN
0011661 06 000622 154002 ----- 0011663 -001- 32 BC IFS2128
0011662 06 000623 056400 ----- -002- 33 BTSA
0011663 -001- 34 IFS2128
0011663 06 000624 106047 ----- 35 LR R2,R7 # MOVE OPTIONS
0011664 06 000625 003445 000261 TTYTBL -001- 36 SPELL R2,(T,T,Y),OP=CI
0011666 37 CI R2,TXTY
0011666 06 000627 055003 ----- 0011671 -001- 38 IF CF = 1 THEN RGBEGIN
0011667 06 000630 026160 ----- 39 BNC IFS2133
0011670 06 000631 053007 ----- 0011677 40 SBN TTY_OP,S(TTY_OP)
0011671 41 B OPOWGOON
0011671 42 RGEND
0011671 -001- 43 IFS2133
0011671 06 000632 103445 000242 TTYTBL -001- 44 SPELL R2,(T,A,P,E),OP=CI
0011673 45 CI R2,TXAPE
0011673 06 000634 055003 ----- 0011676 -001- 46 IF CF = 1 THEN RGBEGIN
0011674 06 000635 022160 ----- 47 BNC IFS2138
0011675 06 000636 053002 ----- 0011677 48 ZBN TTY_OP,S(TTY_OP)
49 B OPOWGOON

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 171

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

OUTPUT OVERWRITE BUFFER

CNRUTL W77D

```

0011676          01          RGEND
0011676          -001- 02 IFS2138
0011676          03          RETURN TTY_NG
0011676 06 000637 156467 ----- TTYTBL -001- 04          BTSAN TTY_NG

0011677          06 OPOWGOON
0011677          07          RTB TTYIN,2
0011677 06 000640 103601 000523 -001- 08          LI RTBPM,*-RTBPMORG+4
0011701 06 000642 037000 014714 0014714 -001- 09          BL ADVPMTTYIN2

0011703          12          IF TTY_OP THEN RGBEGIN
0011703 06 000644 124160 ----- -004- 13          TBN TTY_OP,S(TTY_OP)
0011704 06 000645 054033 ----- 0011737 -002- 14          BC IFS2143
15 # BEGIN TAPE OPTION CODE.
0011705 06 000646 003020 ----- 16          ZR R1
17          OPEN OVHCLNT,(P,A,T,C,H)
0011706 06 000647 037020 126205 CTAPH -002- 18          BSA OPENTCB
0011710 06 000651 014102 ----- -001- 19          VFD 5,OVHCLNT 1,0 1,0 2,0 3,((5+1)/2)+1 1,0 3,((5+1)/2)-1
0011711 06 000652 050101 ----- -001- 20          VFD 8,ASC_P 8,ASC_A
0011712 06 000653 152303 ----- -001- 21          VFD 8,ASC_T 8,ASC_C
0011713 06 000654 044000 ----- -001- 22          VFD 8,ASC_H 8,ASC_
0011714 06 000655 155741 ----- 0011655 23          BNC REQFAIL_ # OPEN FAILED
0011715          24          RTB TAPE
0011715 06 000656 037020 014676 0014676 -001- 25          BSA ADVPMTAPE

          28 OWPROG OW 0(660) # 11785
-001- 29          NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000660
          *****

0011717 06 000660 137000 014746 0014746 -001- 33 OWPROG BGNP 0(3707) # 11785
-001- 34          BL XXX2151
-001- 35          NOTE OWPROG 'CSECT'
-001- 36          NOTE ***** PATCH AREA BEGINS AT 003707 *****
          *

0014746          -001- 40 XXX2151 PATCHAREA
0014746 06 003707 171420 ----- 41          HA
0014747 06 003710 031400 043452 CTSD 42          LAL RD,YEARS,RA1
0014751          43          CALL L2_5
0014751 06 003712 037020 110760 CSYSUB -001- 44          BSA L2_5
0014753 06 003714 110470 ----- 45          RLN R3,8
0014754 06 003715 016103 177400 46          IRM R4,R3,MSK(8,8) # R4 = MONTH,DAY
0014756 06 003717 010450 ----- 47          RLN R2,8
0014757 06 003720 016122 177400 48          IRM R5,R2,MSK(8,8) # R5 = YEAR, HOUR
0014761 06 003722 031000 010052 0010052 49          LAL RD,OWBUFFER,RA0

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 172

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

OUTPUT OVERWRITE BUFFER

CNRUTL W77D

0014763 06 003724 044102 -----	01	ST	R4,2(RAO)
0014764 06 003725 044123 -----	02	ST	R5,3(RAO)
0014765 06 003726 003020 -----	03	ZR	R1
0014766 06 003727 002025 000003	04	STM	R1,N(OWSTAT)(RAO),M(OWSTAT) # ZERO OW STATUS
0014770 06 003731 040001 -----	05	L	RO,N(OWNO)(RAO)
0014771 06 003732 071400 -----	06	GA	
0014772	07	ENDP	# 11785
0014772 06 003733 037000 011721 0011721	-001- 08	BL	XXX2154
	-001- 09	NOTE	***** LAST PATCH ADDRESS USED IS 003734 *****
			*
	-001- 11	NOTE	***** NUMBER OF PATCH WORDS USED IS 22 (DECIMAL) *****
0011721	-001- 14	OWCONTINUE	XXX2154
0011721	15	CALLPROC SEARCH	# FIND END OF OVERWRITE FILE
0011721 06 000662 103641 000545	-001- 16	LI	PROCPM,*-RTBPMORG+4
0011723 06 000664 037000 014047 0014047	-001- 17	BL	SEARCH
0011725	18	EOW	# 11785
	-001- 19	NOTE	***** THE LAST ADDRESS OVERWRITTEN IS 000665 *****
0011725 06 000666 155010 ----- 0011735	23	BNC	OPOWFAIL # OW ALREADY IN OWFILE
0011726	24	CALLPROC	WRTOWRCRD # APPEND OWBUFFER TO OWFILE
0011726 06 000667 003641 000552	-001- 25	LI	PROCPM,*-RTBPMORG+4
0011730 06 000671 037000 014210 0014210	-001- 26	BL	WRTOWRCRD
0011732 06 000673 154003 ----- 0011735	27	BC	OPOWFAIL
0011733 06 000674 037000 014625 0014625	28	BL	REQPASS
0011735	32	OPOWFAIL	
0011735 06 000676 137000 014630 0014630	33	BL	REQFAIL
0011737	34	RGEND	
0011737	-001- 35	IFS2143	
0011737 06 000700 131400 010052 0010052	39	# BEGIN TTY OPTION CODE.	
0011741 06 000702 040541 -----	40	LAL	RO,OWBUFFER,RA1
0011742 06 000703 003046 -----	41	L	R6,N(OWNO)(RA1)
0011743 06 000704 040565 -----	42	LN	OWBPTR,N(EOH)
0011744 06 000705 003562 000003	43	L	R7,N(OWSTAT)(RA1) # STATUS
0011746 06 000707 040602 -----	44	NI	R7,M(OWSTAT)
0011747 06 000710 040623 -----	45	L	R8,2(RA1) # MONTH,DAY
0011750 06 000711 003240 -----	46	L	R9,3(RA1) # YEAR, HOUR
0011751 06 000712 051445 -----	47	ZR	R10
0011752	48	TBS	N(OWTYPE)(RA1),S(OWTYPE)
	49	IF	CF = 1 THEN SPELL R10,(T,R,N,S,L,N)

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 173

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

OUTPUT OVERWRITE BUFFER

CNRUTL W77D

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0011752 06 000713 055003 ----- 0011755 -001- 01          BNC      IFS2161
0011753 06 000714 003641 000260 TTYTBL -002- 02          LI       R10,TRNSLN
0011755 -001- 03 IFS2161
04 # PRINT FIRST LINK IDENTIFYING THE OVERWRITE BY ITS NUMBER.
05 OWPROG OW 0(716),0(717) # 12439
-001- 06 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 000716 *****

0011755 09 PRINT FMT=(WRD(I,N),WRD(O,W),DEC,DEC,BCD,BCD,WRD),LINK=YES,ZSPRS=NO

-001- 11 # MESSAGE PROTOTYPE
-001- 12 # mm IN OW dddd dddd nnnn nnnn WRD
0011755 06 000716 173053 ----- -002- 13 BSAI PXMRY # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
0011756 06 000717 110210 ----- -002- 14 VFD 1,1 2,0 1,1 3,0 1,0 1,1 1,0 2,0 1,1 3,0
0011757 06 000720 104104 ----- -002- 15 VFD 4,TTYO_BCD 4,TTYO_BCD 4,TTYO_DEC 4,TTYO_DEC
0011760 06 000721 021040 ----- -002- 16 VFD 4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_WRD
0011761 06 000722 010021 ----- TTYTBL -002- 17 VFD 5,2 11,IXN
0011762 06 000723 000202 ----- TTYTBL -002- 18 VFD 5, 11,OXW
-001- 19 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS R6,R7,R8,R9,R10,
0011763 -001- 21 NOTE THIS IS THE FIRST SEGMENT OF A LINKED MESSAGE
22 EOW # 12439
-001- 23 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 000723 *****
*

0011763 06 000724 154672 ----- 0011655 27 BC REQFAIL_ # NO TTY WAITING LIST SLOTS AVAILABLE
0011764 28 RTB TTYOUT
0011764 06 000725 037020 014672 0014672 -001- 29 BSA ADVPMTTYOUT

0011766 32 PRNXTORGBLK
33 # BEGIN A NEW ORGBLK BY SETTING UP POINTERS FOR THE OUTPUT LOOP.
34 # POINTERS INCLUDE THE BASE ADDRESS OF THE BLOCK AND THE NUMBER OF ADDRESSES
35 # CONTAINED IN THE BLOCK.
0011766 06 000727 131400 010052 0010052 36 LAL R0,OWBUFFER,RA1
0011770 06 000731 043462 ----- 37 LAX IOBPTR,OWBPTR(RA1)
0011771 06 000732 040701 ----- 38 L R12,N(OBLKADR)(RA1)
0011772 06 000733 040722 ----- 39 L R13,N(OBLKADR)+1(RA1)
0011773 06 000734 053052 ----- 0012045 40 B OPOHTTYDEC

0011774 42 OPOHTTYLP
0011774 06 000735 131400 010052 0010052 43 LAL R0,OWBUFFER,RA1
0011776 06 000737 043402 ----- 44 LAX R0,OWBPTR(RA1)
0011777 06 000740 071420 ----- 45 HA # SAVE CONTROL DATA OVER TTY DATA SET UP
0012000 06 000741 006011 ----- 46 LR R0,TTYLINK # SET UP LINK DATA FOR LPRINT CALL
0012001 06 000742 016574 177760 47 LRM R7,R12,M(OBLKSEG) # SEGMENT NUMBER
0012003 06 000744 010564 ----- 48 RRM R7,S(OBLKSEG)
0012004 06 000745 006214 ----- 49 LR R8,R12

```

COMMON NONRESIDENT UTILITIES

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OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

OUTPUT OVERWRITE BUFFER

CNRUTL W77D

```

0012005 06 000746 006235 ----- 01 LR R9,R13
0012006 06 000747 040644 ----- 02 L R10,N(OLDDH)(RA1)
0012007 06 000750 040665 ----- 03 L R11,N(OLDDL)(RA1)
0012010 06 000751 040704 ----- 04 L R12,N(NEWDH)(RA1)
0012011 06 000752 010710 ----- 05 RRN R12,S(NEWDH)
0012012 06 000753 040723 ----- 06 L R13,N(NEWDL)(RA1)
0012013 06 000754 030422 021637 TDATA 07 # PRINT DATA ABOUT ONE ADDRESS.
0012015 06 000756 024024 ----- TDATA 08 LL R1,WDSTR
0012016 09 TBN R1,S(WDSTR)
0012016 06 000757 055011 ----- 0012027 -002- 10 IF CF THEN RGBEGIN
0012017 11 BNC IFS2181
12 LPRINT FMT=(WRD(CR,LF,SP,SP,SP,SP),WRD(I,N),WRD(O,W,D,A,T,A),DEC,H_C
,L_X,H_D,L_X,H_D,L_X),LINK=YES,PRIOR=3,ZSPRS=NO

-001- 15 # MESSAGE PROTOTYPE
-001- 16 # CRLFSPSPSPSP IN OWDATA ddddd xxxxx oxxxxx oxxxxx
0012017 06 000760 073054 ----- BSAI LXPMRY # SUBROUTINE LPMRY IS IN PROGRAM TTYAPP
0012020 06 000761 110270 ----- -002- 17 VFD 1,1 2,0 1,1 3,0 1,0 1,1 1,0 2,3 1,1 3,0
0012021 06 000762 062500 ----- -002- 18 VFD 4,TTYO_L_X 4,TTYO_H_C 4,TTYO_DEC 4,TTYO_WRD
0012022 06 000763 066154 ----- -002- 19 VFD 4,TTYO_L_X 4,TTYO_H_D 4,TTYO_L_X 4,TTYO_H_D
0012023 06 000764 014000 ----- TTYTBL -002- 20 VFD 5,3 11,qtzzzz
0012024 06 000765 000021 ----- TTYTBL -002- 21 VFD 5, 11,IXN
0012025 06 000766 000203 ----- TTYTBL -002- 22 VFD 5, 11,OXWDATA
-001- 23 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
-001- 24 CONTAINED IN GENERAL REGISTERS R7,R8,R9,R10,R11,R12,R13,
0012026 06 000767 153010 ----- 0012036 -001- 25 NOTE THIS IS A SEGMENT OF A LINKED MESSAGE
0012027 27 B OPOWCONT
0012027 28 RGEND
0012027 -001- 29 IFS2181
0012027 30 LPRINT FMT=(WRD(CR,LF,SP,SP,SP,SP),WRD(I,N),WRD(O,W,D,A,T,A),DEC,H_C,L_
X,SKP,L_X,SKP,L_X),LINK=YES,PRIOR=3,ZSPRS=NO

-001- 33 # MESSAGE PROTOTYPE
-001- 34 # CRLFSPSPSPSP IN OWDATA ddddd xxxxx xxxx xxxx
0012027 06 000770 173054 ----- -002- 35 BSAI LXPMRY # SUBROUTINE LPMRY IS IN PROGRAM TTYAPP
0012030 06 000771 110270 ----- -002- 36 VFD 1,1 2,0 1,1 3,0 1,0 1,1 1,0 2,3 1,1 3,0
0012031 06 000772 062500 ----- -002- 37 VFD 4,TTYO_L_X 4,TTYO_H_C 4,TTYO_DEC 4,TTYO_WRD
0012032 06 000773 061142 ----- -002- 38 VFD 4,TTYO_L_X 4,TTYO_SKP 4,TTYO_L_X 4,TTYO_SKP
0012033 06 000774 014000 ----- TTYTBL -002- 39 VFD 5,3 11,qtzzzz
0012034 06 000775 000021 ----- TTYTBL -002- 40 VFD 5, 11,IXN
0012035 06 000776 000203 ----- TTYTBL -002- 41 VFD 5, 11,OXWDATA
-001- 42 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
-001- 43 CONTAINED IN GENERAL REGISTERS R7,R8,R9,R11,R13,
0012036 44 NOTE THIS IS A SEGMENT OF A LINKED MESSAGE
0012036 45 OPOWCONT
0012036 06 000777 171400 ----- 46 GA # RESTORE CONTROL DATA
0012037 47 RTB
0012037 06 001000 037020 014672 0014672 -001- 48 BSAI TTYOUT
ADVPMTTYOUT

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

OUTPUT OVERWRITE BUFFER

CNRUTL

W77D

```

0012041          01      ANL      R12,1          # INCREMENT 20-BIT ADDRESS
0012041 06 001002 104721 ----- -001- 02      AN      R12+1,1
0012042 06 001003 055002 ----- 0012044 -001- 03      BNC     IFS2210
0012043 06 001004 004701 ----- -001- 04      AN      R12,1
0012044 06 001005 104443 -----          05      AN      OWBPTR,3
0012045          06      OPOWTTYDEC
0012045 06 001006 136060 011774 0011774          07      BX      IOBPTR,OPOWTTYLP
0012047 06 001010 004443 -----          08      AN      OWBPTR,3
0012050 06 001011 030420 010052 0010052          09      LL      R1,OWBUFFER+N(OWTLEN)
          10 # CHECK IF ANY MORE ORGBLKS EXIST.
          11      IF      OWBPTR < R1 THEN B PRNXTORGBLK
0012052 06 001013 006002 ----- -003- 12      LR      RD,OWBPTR
0012053 06 001014 005001 ----- -003- 13      SR      RD,R1
0012054 06 001015 055712 ----- 0011766 -001- 14      BNC     PRNXTORGBLK
0012055 06 001016 006011 -----          15      LR      RD,TTYLINK # SET UP LINK DATA FOR LPRINT CALL
0012056          16 # PRINT FINAL NULL LINK TO TERMINATE THE LINKED OUTPUT MESSAGE.
          17      LPRINT FMT=(WRD(CR,LF),WRD(SP,SP,SP,SP)),PRIOR=3

-001- 19 # MESSAGE PROTOTYPE
-001- 20 #      CRLF SPSPSPSP
0012056 06 001017 073054 ----- -002- 21      BSAI   LXPMRY # SUBROUTINE LPMRY IS IN PROGRAM TTYAPP.
0012057 06 001020 100260 ----- -002- 22      VFD    1,1 2,0 1,0 3,0 1,0 1,1 1,0 2,3 1,0 3,0
0012060 06 001021 021042 ----- -002- 23      VFD    4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_
0012061 06 001022 021042 ----- -002- 24      VFD    4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_
0012062 06 001023 010000 ----- TTYTBL -002- 25      VFD    5,2 11,qt
0012063 06 001024 000000 137000 TTYTBL -002- 26      VFD    5, 11,zzzz
          -001- 27      NOTE   THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
          CONTAINED IN GENERAL REGISTERS
          THIS IS THE LAST SEGMENT OF A LINKED MESSAGE
0012064 06 001025 137000 014625 0014625. -001- 29      NOTE   REQPASS
          30      BL

```

COMMON NONRESIDENT UTILITIES

PR-10954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 176

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

CHANGE OVERWRITE STATUS

CNRUTL W77D

0012066
0012066
001206601 ACTOW
02 CNLOW
03 RMVOW

04 # THESE MESSAGES HAVE THE FOLLOWING FORMS:

05 # ACT:OW[;UCLJ]!

06 # CNL:OW!

07 # RMV:OW!

08 # THESE INPUT MESSAGES CHANGE THE STATUS OF AN OVERWRITE ALREADY IN THE

09 # PATCH FILE. THE STATUS IS RECORDED IN THE HEADER OF THE OVERWRITE RECORD.

10 # IN EACH CASE, THE PATCH FILE IS SEARCHED FOR AN OVERWRITE WHOSE IDENTIFYING

11 # NUMBER IS THE CURRENT OW NUMBER. IF THE SEARCH FAILS, THIS REQUEST IS FAILED. IF THE SEARCH

12 # SUCCEEDS, THE TAPE BLOCK CONTAINING THE HEADER IS IN THE I_OBUF BUFFER.

13 # THE STATUS IS SIMPLY CHANGED THERE AND THE MODIFIED BLOCK IS WRITTEN BACK

14 # INTO THE OVERWRITE FILE.

```

0012066 15 BEGIN (
0012066 16 CALL FRSTCHK
0012066 06 001027 137020 014561 0014561 -001- 17 BSA FRSTCHK
0012070 18 IF CF = 0 THEN RETURN
0012070 06 001031 154002 ----- 0012072 -001- 19 BC IFS2231
0012071 06 001032 056400 ----- -002- 20 BTSA
0012072 -001- 21 IFS2231
0012072 06 001033 106047 ----- 22 LR R2,R7 # MOVE OPTION
0012073 06 001034 022163 ----- 23 ZBN UCL_OP,S(UCL_OP)
0012074 06 001035 003445 001315 TTYTBL -001- 24 SPELL R2,(U,C,L),OP=CI
0012076 25 CI R2,UXCL
0012076 06 001037 055002 ----- 0012100 -001- 26 IF CF = 1 THEN SBN UCL_OP,S(UCL_OP)
0012077 06 001040 026163 ----- -001- 27 BNC IFS2236
0012100 -001- 28 SBN UCL_OP,S(UCL_OP) #
0012100 06 001041 130540 010053 0010053. 29 IFS2236
0012102 30 LL OWNUM,OWBUFFER+N(OWNO)
0012102 31 RTB TTYIN,2
0012102 06 001043 003601 000726 -001- 32 LI RTBPM,*-RTBPMORG+4
0012104 06 001045 037000 014714 0014714 -001- 33 BL ADVPMTTYIN2

0012106 06 001047 103020 ----- 36 ZR R1
0012107 06 001050 037020 126205 CTAPH -002- 37 OPEN OVHCLNT,(P,A,T,C,H)
0012111 06 001052 014102 ----- -001- 38 BSA OPENTCB
0012112 06 001053 050101 ----- -001- 39 VFD 5,OVHCLNT 1,0 1,0 2,0 3,((5+1)/2)+1 1,0 3,((5+1)/2)-1
0012113 06 001054 152303 ----- -001- 40 VFD 8,ASC_P 8,ASC_A
0012114 06 001055 044000 ----- -001- 41 VFD 8,ASC_T 8,ASC_C
0012115 06 001056 155540 ----- 0011655 42 VFD 8,ASC_H 8,ASC_
0012116 43 BNC REQFAIL_ # OPEN FAILED
0012116 44 RTB TAPE
0012116 06 001057 037020 014676 0014676 -001- 45 BSA ADVPMTAPE

```

COMMON NONRESIDENT UTILITIES

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OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

CHANGE OVERWRITE STATUS

CNRUTL W77D

```

0012120 06 001061 106006 ----- 01 LR RO,OWNUM
0012121 ----- 02 CALLPROC SEARCH # FIND OW
0012121 06 001062 003641 000745 -001- 03 LI PROCPM,*--RTBPMORG+4
0012123 06 001064 037000 014047 0014047 -001- 04 BL SEARCH
0012125 06 001066 154055 ----- 05 BC CHGOWFAIL # OW IS NOT IN OWFILE
0012126 06 001067 031400 045267 CTAPH 06 LAL RO,I_OBUF+I_OBUFD,RA1
0012130 06 001071 043403 ----- 07 LAX RO,I0BPTR(RA1)
0012131 06 001072 040405 ----- 08 L RO,N(OWSTAT)(RA1)
0012132 06 001073 003421 000001 09 LI R1,OWACT*ES(OWSTAT)
----- 10 SPELL R2,(C,N,L)
0012134 06 001075 003441 000012 TTYTBL -001- 11 LI R2,CXNL
0012136 ----- 12 IF R2 = TTYVERB THEN LI R1,OWINACT*ES(OWSTAT)
0012136 06 001077 020044 ----- -002- 13 CR R2,TTYVERB
0012137 06 001100 055003 ----- 0012142 -001- 14 BNC IFS2245
0012140 06 001101 003421 000000 -001- 15 LI R1,OWINACT*ES(OWSTAT) #
0012142 ----- -001- 16 IFS2245
0012142 06 001103 117001 000003 17 CRM RO,R1,M(OWSTAT) # REJECT ACT:OW AND RMV:OW IF OW IS ACTIVE
AND CNL:OW IF OW IS NOT ACTIVE
0012144 06 001105 054036 ----- 0012202 19 BC CHGOWFAIL
----- 20 SPELL R2,(R,M,V)
0012145 06 001106 003441 000035 TTYTBL -001- 21 LI R2,RXNV
0012147 ----- 22 IF R2 = TTYVERB THEN LI R1,OWDEAD*ES(OWSTAT)
0012147 06 001110 020044 ----- -002- 23 CR R2,TTYVERB
0012150 06 001111 055003 ----- 0012153 -001- 24 BNC IFS2250
0012151 06 001112 003421 000003 -001- 25 LI R1,OWDEAD*ES(OWSTAT) #
0012153 ----- -001- 26 IFS2250
0012153 06 001114 102425 000003 27 STM R1,N(OWSTAT)(RA1),M(OWSTAT)
0012155 06 001116 006041 ----- 28 LR R2,R1 # SAVE OWSTAT
0012156 06 001117 040425 ----- 30 L R1,N(OWSTAT)(RA1)
0012157 06 001120 017420 003405 31 CIRM R1,1*ES(OWTYPE)+OWACT*ES(OWSTAT),D,M(OWTYPE)+M(OWSTAT) # IS A
TRNSLN OW BEING ACTIVATED
0012161 ----- 33 IF CF THEN RGBEGIN
0012161 06 001122 055003 ----- 0012164 -002- 34 BNC IFS2253
0012162 06 001123 024163 ----- 35 TBN UCL_OP,S(UCL_OP)
0012163 06 001124 055017 ----- 0012202 36 BNC CHGOWFAIL
0012164 ----- 37 RGEND
0012164 ----- -001- 38 IFS2253
----- 39 BACKSP OVWCLNT
0012164 06 001125 173047 ----- -002- 40 BSAI RXEQR # SUBROUTINE REQR IS IN PROGRAM CTAPH
0012165 06 001126 016100 137020 -001- 41 VFD 5,OVWCLNT 4,BACKSP 1,1 1,0 5,0
0012166 ----- 42 RTB TAPE
0012166 06 001127 137020 014676 0014676 -001- 43 BSA ADVPMTAPE

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 178

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

CHANGE OVERWRITE STATUS

CNRUTL W77D

0012170 06 001131 173047 -----	01	WRTAB	OVWCLNT	
0012171 06 001132 014740 137020	-002- 02	BSAI	RXEQR	# SUBROUTINE REQR IS IN PROGRAM CTAPH
0012172	-001- 03	VFD	5,OVWCLNT 4,WRTAB 1,1 1,1 5,0	
0012172 06 001133 137020 014676 0014676	04	RTB	TAPE	
	-001- 05	BSA	ADVPMTAPE	
0012174 06 001135 131400 010052 0010052	08	LAL	RO,OWBUFFER,RA1	
0012176 06 001137 002445 000003	09	STM	R2,N(OWSTAT)(RA1),M(OWSTAT) # UPDATE OW BUFFER COPY	
0012200 06 001141 037000 014625 0014625	10	BL	REQPASS	
0012202	14	CHGOWFAIL		
0012202 06 001143 137000 014630 0014630	15	BL	REQFAIL	

COMMON NONRESIDENT UTILITIES

PR-1C954-50

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OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

LOAD OR VERIFY OVERWRITE

CNRUTL W77D

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0012204          01 LODOW
0012204          02 VEROW
                03 # THESE MESSAGES HAVE THE FOLLOWING FORMS:
                04 #   LOD:OW:OLD!
                05 #   LOD:OW:NEW!
                06 #   VER:OW:OLD!
                07 #   VER:OW:NEW!
0012204          08
                09 # THE ACTION IS ALMOST IDENTICAL IN EACH CASE. EACH LOCATION SPECIFIED IN
                10 # OWBUFFER IS ACCESSED. IF THE LOCATION IS RESIDENT, THE ON-LINE STORE
                11 # LOCATION IS ACCESSED. FOR NONRESIDENT LOCATIONS (SEGMENT NUMBER = 0) THE
                12 # NON-RESIDENT PROGRAM FILE ON TAPE IS ACCESSED. DURING A VERIFY OPERATION,
                13 # THE DATA CONTAINED IN THE ACCESSED LOCATION IS COMPARED WITH THE DATA FOR
                14 # THAT LOCATION RECORDED IN OWBUFFER. OWBUFFER CONTAINS TWO DATA WORDS
                15 # LABELED OLD AND NEW. THE NEW/OLD OPTION IN THE MESSAGE SPECIFIES WHICH DATA
                16 # WORD IS TO BE USED IN THE COMPARE. ON A LOAD OPERATION, THE APPROPRIATE
                17 # DATA WORD FROM OWBUFFER IS WRITTEN INTO THE ACCESSED LOCATION, THEREBY
                18 # OVERWRITING AND DESTROYING ITS FORMER CONTENTS.
0012204          19
                20 # AN OUTER LOOP (BEGINNING AT SYMBOL 'TSTNXTORGBLK') EXISTS TO CYCLE THROUGH
                21 # ALL OF THE ORGBLKS IN OWBUFFER. THE ORGBLK HEADER DETERMINES IF THE DATA
                22 # WORDS ARE RESIDENT OR NONRESIDENT. THE SUBSEQUENT ACTIONS ARE COMPLETELY
                23 # DIFFERENT FOR THE TWO CASES. AN ORGBLK CONTAINING RESIDENT DATA IS PROCESSED
                24 # BY THE LOOP BEGINNING AT SYMBOL 'VERRESLP'. THE PROCESSING OF A ORGBLK
                25 # CONTAINING NONRESIDENT DATA IS COMPLICATED BY THE NEED TO SEARCH THE TAPE
                26 # WHICH IS FORMATTED INTO PHYSICAL BLOCKS WHICH ARE TOTALLY INDEPENDENT OF THE
                27 # ORGBLKS, IE, AN ORGBLK MAY SPAN TWO TAPE BLOCKS. PROCESSING OF A NEW
                28 # TAPE BLOCK BEGINS BY READING IT AT SYMBOL 'TSTNXTBLK'. THE PROCESSING WITHIN
                29 # A TAPE BLOCK IS PERFORMED BY THE LOOP BEGINNING AT SYMBOL 'TSTNXTADR'.
                30 # IN THIS LOOP THE NONRESIDENT DATA OF INTEREST IS IN THE I_OBUF BUFFER AND
                31 # IS MANIPULATED THERE. AT THE END OF EACH TAPE BLOCK ('EOBFND') OR THE END
                32 # OF PROCESSING ('LVCOMPL') CHECKS ARE MADE TO DETERMINE IF THE DATA IN I_OBUF
                33 # HAS BEEN MODIFIED. IF IT HAS, THIS MODIFIED TAPE BLOCK IS WRITTEN ONTO THE
                34 # TAPE THEREBY OVERWRITING THE OLD DATA.
0012204          35
                36 # DURING THE PROCESSING OF VERIFIES, THE FIRST DATA MISMATCH CAUSES A BRANCH
                37 # OUT OF THE LOOP TO THE ERROR ROUTINE AT 'VEROWFAIL' WHERE AN ERROR MESSAGE IS
                38 # PRINTED. THE REQUEST IS THEN FAILED.

0012204          42          BEGIN      ( )
0012204          43          CALL      FRSTCHK
0012204 06 001145 137020 014561 0014561  -001- 44          BSA      FRSTCHK
0012206          45          IF        CF = 0 THEN RETURN
0012206 06 001147 154002 ----- 0012210  -001- 46          BC      IFS2268
0012207 06 001150 056400 -----          -002- 47          BTSA
0012210          -001- 48 IFS2268
0012210          49 AUTOVEROW

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COMMON NONRESIDENT UTILITIES

PR-1C954-50

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OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

LOAD OR VERIFY OVERWRITE

CNRUTL W77D

```

0012210 06 001151 106047 ----- 01      LR      R2,R7      # MOVE OPTION
                                02      SPELL    R2,(N,E,W),OP=CI
0012211 06 001152 003445 001165 TTYTBL -001- 03      CI      R2,NXEW
0012213 06 001154 055003 ----- 0012216 -001- 04      IF      CF = 1 THEN RGBEGIN
0012214 06 001155 026161 ----- 0012216 -001- 05      BNC     IFS2273
0012215 06 001156 053007 ----- 0012224 -001- 06      SBN     NEW_OP,S(NEW_OP)
0012216 06 001156 053007 ----- 0012224 -001- 07      B       LVOWCONT
0012216 06 001156 053007 ----- 0012216 -001- 08      RGEN    IFS2273
0012216 06 001157 103445 001200 TTYTBL -001- 09      SPELL    R2,(O,L,D),OP=CI
0012220 06 001161 055003 ----- 0012223 -001- 10      CI      R2,OXL
0012220 06 001161 055003 ----- 0012223 -001- 11      IF      CF = 1 THEN RGBEGIN
0012221 06 001162 022161 ----- 0012223 -001- 12      BNC     IFS2278
0012222 06 001163 053002 ----- 0012224 -001- 13      ZBN     NEW_OP,S(NEW_OP)
0012223 06 001163 053002 ----- 0012224 -001- 14      B       LVOWCONT
0012223 06 001163 053002 ----- 0012223 -001- 15      RGEN    IFS2278
0012223 06 001164 156467 ----- TTYTBL -001- 16      RETURN  TTY_NG
0012223 06 001164 156467 ----- TTYTBL -001- 17      BTSAN  TTY_NG
0012224 06 001165 122162 ----- 0012224 -001- 18      LVOWCONT
0012225 06 001166 003601 001051 -001- 19      ZBN     BLKCHGD,S(BLKCHGD)
0012225 06 001166 003601 001051 -001- 20      RTB     TTYIN,2
0012227 06 001170 037000 014714 0014714 -001- 21      LI      RTBPM,*-RTBPMORG+4
0012227 06 001170 037000 014714 0014714 -001- 22      BL      ADVPMTTYIN2
0012231 06 001172 103046 ----- 0012231 -001- 23      LN      OWBPTR,N(EOH)
0012232 06 001173 031420 010052 0010052 -001- 24      LAL     R1,OWBUFFER,RA1 # INITIALIZE R1 AND RA1
0012234 06 001175 003300 ----- 0012234 -001- 25      ZR      R12 # R12 IS ASSUMED TO BE THE OLD SEGMENT
                                # NUMBER
0012235 06 001176 053011 ----- 0012246 -001- 26      B       TNOBN
0012236 06 001177 131420 010052 0010052 -001- 27      TSTNXTORGBLK
0012240 06 001201 042662 ----- 0012240 -001- 28      # BEGIN PROCESSING A NEW ORGBLK
0012241 06 001202 006013 ----- 0012241 -001- 29      LAL     R1,OWBUFFER,RA1 # R1 = TOTAL LENGTH OF ACTIVE OWBUFFER
0012242 06 001203 010417 ----- 0012242 -001- 30      LX     PROCSCR,OWBPTR(RA1) # RA1=START OF LAST ORIGIN BLOCK
0012243 06 001204 001413 ----- 0012243 -001- 31      # ALSO PROCSCR = LENGTH OF NEXT ORIGIN BLOCK
0012244 06 001205 004403 ----- 0012244 -001- 32      RO     = PROCSCR /RL 1 + PROCSCR + 3 # TOTAL LENGTH OF LAST ORIGIN BLOCK
0012244 06 001205 004403 ----- 0012244 -001- 33      LR      RO,PROCSCR
0012244 06 001205 004403 ----- 0012244 -001- 34      RLN     RO,1
0012244 06 001205 004403 ----- 0012244 -001- 35      AR      RO,PROCSCR
0012244 06 001205 004403 ----- 0012244 -001- 36      AN      RO,3
0012245 06 001206 001440 ----- 0012245 -001- 37      OWBPTR = OWBPTR + RO # INCREMENT OWBPTR TO POINT AT NEXT BLOCK
0012246 06 001206 001440 ----- 0012246 -001- 38      AR      OWBPTR,RO
0012246 06 001207 143662 ----- 0012246 -001- 39      TNOBN
0012247 06 001210 004277 ----- 0012247 -001- 40      LAX     PROCSCR,OWBPTR(RA1) # INCREMENT RA1 TO NEXT ORGBLK
0012250 06 001210 004277 ----- 0012250 -001- 41      SN      PROCSCR,1 # BX REQUIRES NUMBER OF LOOPS MINUS ONE
0012250 06 001210 004277 ----- 0012250 -001- 42      IF      OWBPTR >= R1 THEN B LVCOMPL # COMPLETE IF POINTER EXCEEDS TOTAL

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COMMON NONRESIDENT UTILITIES

PR-1C954-50.

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

LOAD OR VERIFY OVERWRITE

CNRUTL W77D

Address	Mode	Source	Target	Length	Operation	Comments
0012250	06	001211	006002	-----	-003- 02	LR RO,OWBPTR
0012251	06	001212	005001	-----	-003- 03	SR RO,R1
0012252	06	001213	054234	-----	0012506 -001- 04	BC LYCOMPL
0012253	06	001214	006034	-----	05	LR R1,R12 # SAVE OLD SEGMENT NUMBER
0012254	06	001215	040701	-----	06	L RA0,N(OBLKADR)(RA1)
0012255	06	001216	040722	-----	07	L RA0+1,N(OBLKADR)+1(RA1)
					08	# R1 = OLD SEGMENT NUMBER
					09	# PROCSCR = NUMBER OF WORDS IN CURRENT ORIGIN BLOCK MINUS ONE
					10	# RA0 = BASE ADDRESS OF ORIGIN BLOCK
0012256	06	001217	040401	-----	11	L RO,N(OBLKSEG)(RA1)
0012257	06	001220	003402	177760	12	NI RO,M(OBLKSEG) # DOES THIS ORGBLK CONTAIN RESIDENT OR NONRESIDENT DATA?
						# RESIDENT CODE
0012261					14	IF CF THEN RGBEGIN
0012261	06	001222	055047	-----	0012330 -002- 15	BNC IFS2301
0012262					16	VERRESLP
					17	# PROCESS AN ORGBLK OF RESIDENT DATA
0012262	06	001223	171420	-----	18	HA
0012263	06	001224	007316	-----	19	EXR RA0,RA1
0012264	06	001225	007337	-----	20	EXR RA0+1,RA1+1
0012265	06	001226	040004	-----	21	L RO,N(NEWDH)(RA0)
0012266	06	001227	040023	-----	22	L R1,N(NEWDL)(RA0)
0012267					23	IF - NEW OP THEN RGBEGIN
0012267	06	001230	024161	-----	-004- 24	TBN NEW_OP,S(NEW_OP)
0012270	06	001231	054003	-----	0012273 -002- 25	BC IFS2303
0012271	06	001232	010410	-----	26	RRN RO,8
0012272	06	001233	040025	-----	27	L R1,N(OLDDL)(RA0)
0012273					28	RGEND
0012273					-001- 29	IFS2303
0012273	06	001234	103701	000024	TTYTBL -001- 31	SPELL R12,(L,O,D)
0012275					32	LI R12,LX0D
0012275	06	001236	020304	-----	-002- 33	IF R12 = TTYVERB THEN RGBEGIN
0012276	06	001237	055005	-----	0012303 -001- 34	CR R12,TTYVERB
0012277					35	BNC IFS2310
0012277	06	001240	037021	014361	MASACS -001- 36	CALL WOPS
0012301					37	BSA WOPS # STOP MAS AUDIT SO THAT IT DOES NOT CORRECT CHANGES
0012301	06	001242	137020	003674	CBLM -001- 39	BSA STOPPSAU
0012303					40	RGEND
0012303					-001- 41	IFS2310
0012303	06	001244	103701	000050	TTYTBL -001- 43	SPELL R12,(V,E,F)
0012305					44	LI R12,VXER
0012305	06	001246	020304	-----	-002- 45	IF R12 = TTYVERB THEN RGBEGIN
0012306	06	001247	055014	-----	0012322 -001- 46	CR R12,TTYVERB
0012307	06	001250	006300	-----	47	BNC IFS2318
0012310	06	001251	006321	-----	48	LR R12,RO
0012311					49	LR R13,R1
						CALL RDOPS

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 182

OVERWRITE MULTISCAN FUNCTION

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LOAD OR VERIFY OVERWRITE

CNRUTL W770

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0012311 06 001252 037021 014406 MASACS -001- 01      BSA  RDOPS
0012313 06 001254 110410 ----- 02      RRN  RO,8          # RIGHT ADJUST HIGH BITS
0012314 06 001255 010710 ----- 03      RRN  R12,8
0012315 06 001256 017014 000377 04      CRM  RO,R12,MSK(8)
0012317 05      IF  - CF THEN B VEROWFAIL
0012317 06 001260 055207 ----- 0012526 -002- 06      BNC  VEROWFAIL
0012320 07      IF  R1 = R13 THEN B VEROWFAIL
0012320 06 001261 020035 ----- -002- 08      CR  R1,R13
0012321 06 001262 055205 ----- 0012526 -001- 09      BNC  VEROWFAIL
0012322 10      RGEND
0012322 -001- 11 IFS2318
0012322 06 001263 171400 ----- 12      GA
0012323 06 001264 041001 ----- 13      LA  RO,1(RAD)
0012324 06 001265 041403 ----- 14      LA  RO,3(RA1)
0012325 06 001266 036260 012262 0012262 15      BX  PROCSCR,VERRESLP
0012327 06 001270 053707 ----- 0012236 16      B   TSTNXTORGBLK
0012330 17      RGEND
0012330 -001- 18 IFS2301

0012330 06 001271 117001 177760 22 # BEGIN PROCESSING A NEW ORGBLK OF NONRESIDENT DATA
0012332 23      CRM  RO,R1,M(OBLKSEG) # IS THE NEXT SEGMENT NUMBER THE SAME AS THE
25      IF  - CF THEN RGBEGIN # POSITION ONLY IF NEW SEGMENT IS BEING
27      BC  IFS2328
28      RRN  RO,S(OBLKSEG)-1 # RO=2*(SEGMENT NUMBER)
29      SN  RO,1
0012335 06 001276 031621 146674 SEG000 . 30      LAL  TTYLINK,SEGTAB,RA1
0012337 06 001300 042620 ----- 31      LX  TTYLINK,RO(RA1) # R1 = LOGICAL BLOCK OF START OF SEGMENT
0012340 06 001301 003422 177760 32      NI  R1,M(OBLKSEG) # IS OBLKSEG=0?
0012342 33      IF  CF THEN RGBEGIN # FIRST NONRESIDENT SEGMENT, THEREFORE OPEN
35      BNC  IFS2330
36 # SET UP TO OPEN AND WRITE TAPE
0012343 06 001304 006031 ----- 37      LR  R1,TTYLINK # GET FILE BLOCK NUMBER OF THIS SEGMENT
38      OPEN OVWCLNT,(P,A,G,E,M,C,N)
0012344 06 001305 037020 126205 CTAPH -002- 39      BSA  OPENTCB
0012346 06 001307 014123 ----- -001- 40      VFD  5,OVWCLNT 1,0 1,0 2,0 3,((7+1)/2)+1 1,0 3,((7+1)/2)-1
0012347 06 001310 050101 ----- -001- 41      VFD  8,ASC_P 8,ASC_A
0012350 06 001311 043705 ----- -001- 42      VFD  8,ASC_G 8,ASC_E
0012351 06 001312 046717 ----- -001- 43      VFD  8,ASC_M 8,ASC_O
0012352 06 001313 047000 150400 -001- 44      VFD  8,ASC_N 8,ASC_
0012353 06 001314 150400 014630 0014630 45      BNCL REQFAIL
0012355 46      RTB  TAPE
0012355 06 001316 037020 014676 0014676 -001- 47      BSA  ADVPMTAPE

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COMMON NONRESIDENT UTILITIES

PR-1C954-50

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

LOAD OR VERIFY OVERWRITE

CNRUTL W77D

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0012357 06 001320 153024 ----- 0012403    01          B      TSTNXTBLK
0012360                                02          RGEND
0012360                                -001- 03 IFS2330
04 # THE SEARCH OF I OBLK IS COMPLETE. IF ANY OF ITS DATA WAS
05 # MODIFIED, WRITE IT BACK ON THE TAPE.
06          SPELL   RD,(L,O,D)
0012360 06 001321 103401 000024 TTYTBL -001- 07          LI      RD,LXOD
0012362                                08          IF      RD = TTYVERB THEN RGBEGIN
0012362 06 001323 020004 ----- -002- 09          CR      RD,TTYVERB
0012363 06 001324 055013 ----- 0012376 -001- 10          BNC     IFS2338
0012364                                11          IF      BLKCHGD THEN RGBEGIN
0012364 06 001325 024162 ----- -004- 12          TBN    BLKCHGD,S(BLKCHGD)
0012365 06 001326 055011 ----- 0012376 -002- 13          BNC     IFS2341
0012366 06 001327 073047 ----- -002- 14          BACKSP OVWCLNT
0012367 06 001330 016100 137020 -001- 15          BSAI    RXEQR          # SUBROUTINE REQR IS IN PROGRAM CTAPH
0012370                                16          VFD    5,OVWCLNT 4,BACKSP 1,1 1,0 5,0
0012370 06 001331 137020 014676 0014676 -001- 17          RTB    TAPE
0012370                                18          BSA    ADVPMTAPE

                                21          WRTAB  OVWCLNT
0012372 06 001333 173047 ----- -002- 22          BSAI    RXEQR          # SUBROUTINE REQR IS IN PROGRAM CTAPH
0012373 06 001334 014740 137020 -001- 23          VFD    5,OVWCLNT 4,WRTAB 1,1 1,1 5,0
0012374                                24          RTB    TAPE
0012374 06 001335 137020 014676 0014676 -001- 25          BSA    ADVPMTAPE

                                28          RGEND
0012376                                -001- 29 IFS2341
0012376                                30          RGEND
0012376                                -001- 31 IFS2338
0012376 06 001337 106031 -----          32          LR      R1,TTYLINK          # GET FILE BLOCK NUMBER OF THIS SEGMENT
0012377 06 001340 073047 -----          33          POSITION OVWCLNT
0012400 06 001341 015100 137020 -002- 34          BSAI    RXEQR          # SUBROUTINE REQR IS IN PROGRAM CTAPH
0012401                                -001- 35          VFD    5,OVWCLNT 4,POSITION 1,1 1,0 5,0
0012401                                36          RTB    TAPE
0012401 06 001342 137020 014676 0014676 -001- 37          BSA    ADVPMTAPE

0012403                                40 TSTNXTBLK
0012403 06 001344 122162 -----          41 # READ NEXT TAPE BLOCK INTO I OBUF FOR PROCESSING
0012403                                42          ZBN    BLKCHGD,S(BLKCHGD) # INITIALIZE FLAG TO NO CHANGE IN (NEXT)
                                BLOCK
0012404 06 001345 073047 -----          44          RD1BLK OVWCLNT,DUMUNLOD
0012405 06 001346 014400 011161 0011161 -002- 45          BSAI    RXEQR          # SUBROUTINE REQR IS IN PROGRAM CTAPH
0012407                                -001- 46          ADDR   DUMUNLOD,OVWCLNT*(7)+R1BLK*(3)
0012407                                47          RTB    TAPE
0012407 06 001350 137020 014676 0014676 -001- 48          BSA    ADVPMTAPE

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COMMON NONRESIDENT UTILITIES

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OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

LOAD OR VERIFY OVERWRITE

CNRUTL W77D

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0012411          01          RGEND
0012411          -001- 02 IFS2328
0012411          03 TSTNXTADR
0012411          04 # SEARCH I_OBUF FOR ADDRESS OF INTEREST
0012411          05 CALL SRCHTB,(ADRFND,EOBFND,VEROWFAILNP)
0012411 06 001352 137020 014323 0014323 -001- 06 BSA SRCHTB
0012413 06 001354 156000 ----- -002- 07 BPAX RO
0012414 06 001355 153003 ----- 0012417 -002- 08 B ADRFND
0012415 06 001356 153052 ----- 0012467 -002- 09 B EOBFND
0012416 06 001357 153136 ----- 0012554 -002- 10 B VEROWFAILNP

0012417          12 ADRFND
0012417 06 001360 126162 ----- 13 # AN AFFECTED ADDRESS WAS FOUND, ITS CONTENTS WILL BE COMPARED OR CHANGED.
0012420 06 001361 071420 ----- 14 SBN BLKCHGD,S(BLKCHGD) # FLAG CHANGE IN THIS BLOCK
0012421 06 001362 031000 010052 0010052 15 HA
0012423 06 001364 043002 ----- 16 LAL RO,OWBUFFER,RAO
0012424 06 001365 006041 ----- 17 LAX RO,OWBPTR(RAO)
0012425 06 001366 005013 ----- 18 LR R2,R1 # SET UP FOR LDWORD OR STWORD
0012426 06 001367 004017 ----- 19 SR RO,PROCSCR
0012427 06 001370 043020 ----- 20 SN RO,1
0012430 06 001371 043020 ----- 21 LAX R1,RO(RAO)
0012431 06 001372 043020 ----- 22 LAX R1,RO(RAO)
0012432 06 001373 040004 ----- 23 LAX R1,RO(RAO) # RAO=RAO+3*(RO-PROCSCR-1)
0012433 06 001374 040025 ----- 24 L RO,N(OLDDH)(RAO)
0012434          25 L R1,N(OLDDL)(RAO)
0012434          26 IF NEW_OP THEN RGBEGIN
0012434 06 001375 024161 ----- -004- 27 TBN NEW_OP,S(NEW_OP)
0012435 06 001376 055003 ----- 0012440 -002- 28 BNC IFS2362
0012436 06 001377 010410 ----- 29 RRN RO,8
0012437 06 001400 040023 ----- 30 L R1,N(NEWDL)(RAO)
0012440          31 RGEND
0012440          -001- 32 IFS2362
0012440 06 001401 103701 000024 TTYTBL -001- 33 SPELL R12,(L,O,D)
0012442          34 LI R12,LXOD
0012442 06 001403 020304 ----- -002- 35 IF R12 = TTYVERB THEN RGBEGIN
0012443 06 001404 055002 ----- 0012445 -001- 36 CR R12,TTYVERB
0012444 06 001405 046422 ----- 37 BNC IFS2369
0012445          38 #
0012445          39 CALL STWORD # FOR 24-BIT PAGEMON FILE
0012445          40 STX R1,R2(RA1) # FOR 16-BIT PAGEMON FILE
0012445          41 RGEND
0012445          -001- 41 IFS2369
0012445 06 001406 103701 000050 TTYTBL -001- 42 SPELL R12,(V,E,R)
0012447          43 LI R12,VXER
0012447          44 IF R12 = TTYVERB THEN RGBEGIN
0012447 06 001410 020304 ----- -002- 45 CR R12,TTYVERB
0012450 06 001411 055012 ----- 0012462 -001- 46 BNC IFS2375
0012451 06 001412 006300 ----- 47 LR R12,RO
0012452 06 001413 006321 ----- 48 LR R13,R1
0012452          49 # CALL LDWORD # FOR 24-BIT PAGEMON FILE

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COMMON NONRESIDENT UTILITIES

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OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

LOAD OR VERIFY OVERWRITE

CNRUTL W77D

0012453	06	001414	042422	-----		01	LX	R1,R2(RA1)	# FOR 16-BIT PAGEMON FILE
0012454	06	001415	003000	-----		02	ZR	RD	# FOR 16-BIT PAGEMON FILE
0012455	06	001416	017014	000377		03	CRM	RD,R12,MSK(8)	
0012457						04	IF	- CF THEN B VEROWFAIL	
0012457	06	001420	055047	-----	0012526	-002-	05	BNC	VEROWFAIL
0012460						06	IF	R1 = R13 THEN B VEROWFAIL	
0012460	06	001421	020035	-----		-002-	07	CR	R1,R13
0012461	06	001422	055045	-----	0012526	-001-	08	BNC	VEROWFAIL
0012462						09	RGEND		
0012462						-001-	10	IFS2375	
0012462	06	001423	171400	-----		11	GA		
0012463	06	001424	041001	-----		12	LA	RD,1(RAD)	
0012464	06	001425	036260	012411	0012411	13	BX	PROCSCR,TSTNXTADR	
0012466	06	001427	053550	-----	0012236	14	B	TSTNXTORGBLK	
0012467						16	EOBEND		
						17		# THE SEARCH OF I_OBLK IS COMPLETE. IF ANY OF ITS DATA WAS	
						18		# MODIFIED, WRITE IT BACK ON THE TAPE.	
						19	SPELL	RD,(L,O,D)	
0012467	06	001430	103401	000024	TTYTBL	-001-	20	LI	RD,LXOD
0012471						21	IF	RD = TTYVERB THEN RGBEGIN	
0012471	06	001432	020004	-----		-002-	22	CR	RD,TTYVERB
0012472	06	001433	055013	-----	0012505	-001-	23	BNC	IFS2385
0012473						24	IF	BLKCHGD THEN RGBEGIN	
0012473	06	001434	024162	-----		-004-	25	TBN	BLKCHGD,S(BLKCHGD)
0012474	06	001435	055011	-----	0012505	-002-	26	BNC	IFS2388
						27	BACKSP	OVWCLNT	
0012475	06	001436	073047	-----		-002-	28	BSAI	RXEQR # SUBROUTINE REQR IS IN PROGRAM CTAPH
0012476	06	001437	016100	137020		-001-	29	VFD	5,OVWCLNT 4,BACKSP 1,1 1,0 5,0
0012477						30	RTB	TAPE	
0012477	06	001440	137020	014676	0014676	-001-	31	BSA	ADVPMTAPE
						34	WRTAB	OVWCLNT	
0012501	06	001442	173047	-----		-002-	35	BSAI	RXEQR # SUBROUTINE REQR IS IN PROGRAM CTAPH
0012502	06	001443	014740	137020		-001-	36	VFD	5,OVWCLNT 4,WRTAB 1,1 1,1 5,0
0012503						37	RTB	TAPE	
0012503	06	001444	137020	014676	0014676	-001-	38	BSA	ADVPMTAPE
0012505						41	RGEND		
0012505						-001-	42	IFS2388	
0012505						43	RGEND		
0012505						-001-	44	IFS2385	
0012505	06	001446	153676	-----	0012403	45	B	TSTNXTBLK	

COMMON NONRESIDENT UTILITIES

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OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

LOAD OR VERIFY OVERWRITE

CNRUTL W77D

```

0012506      01 LVCOMPL
02 # THE PROCESSING OF OWBUFFER IS COMPLETE. IF ANY DATA IN THE LAST
03 # PROCESSED TAPE BLOCK WAS MODIFIED, THE BLOCK MUST BE WRITTEN BACK ONTO THE
04 # TAPE.
05 # IF THIS IS LOD:OW AND THIS BLOCK CHANGED, WRITE IT BACK OUT
06      SPELL      RO,(L,O,D)
0012506 06 001447 103401 000024 TTYTBL -001- 07      LI      RO,LXOD
0012510      08      IF      RO = TTYVERB THEN RGBEGIN
0012510 06 001451 020004 ----- -002- 09      CR      RO,TTYVERB
0012511 06 001452 05: J13 ----- 0012524 -001- 10      BNC     IFS2402
0012512      11      IF      BLKCHGD THEN RGBEGIN
0012512 06 001453 024162 ----- -004- 12      TBN     BLKCHGD,S(BLKCHGD)
0012513 06 001454 055011 ----- 0012524 -002- 13      BNC     IFS2405
0012514 06 001455 073047 ----- -002- 14      BACKSP  OVWCLNT
0012515 06 001456 016100 137020 -001- 15      BSAI    RXEQR      # SUBROUTINE REQR IS IN PROGRAM CTAPH
0012516      16      VFD     5,OVWCLNT 4,BACKSP 1,1 1,0 5,0
0012516 06 001457 137020 014676 0014676 -001- 17      RTB     TAPE
0012516      18      BSA     ADVPMTAPE

0012520 06 001461 173047 ----- -002- 21      WRTAB   OVWCLNT
0012521 06 001462 014740 137020 -001- 22      BSAI    RXEQR      # SUBROUTINE REQR IS IN PROGRAM CTAPH
0012522      23      VFD     5,OVWCLNT 4,WRTAB 1,1 1,1 5,0
0012522 06 001463 137020 014676 0014676 -001- 24      RTB     TAPE
0012522      25      BSA     ADVPMTAPE

0012524      28      RGEND
0012524 -001- 29 IFS2405      RGEND
0012524      30
0012524 -001- 31 IFS2402      BL      REQPASS
0012524 06 001465 137000 014625 0014625      32

0012526      36 VEROWFAIL
0012526 06 001467 172214 ----- 37 # A VERIFY REQUEST HAS DETECTED A DATA MISMATCH. PRINT AN ERROR MESSAGE
0012527 06 001470 072235 ----- 38 # IDENTIFYING THE LOCATION AND DATA THAT MISMATCHED.
0012530 06 001471 016570 177760 39      GN      R8,12      # GET ADDRESS BEING VERIFIED
0012532 06 001473 010564 ----- 40      GN      R9,13
0012533 06 001474 006240 ----- 41      LRM     R7,R8,M(OBLKSEG)
0012534 06 001475 006261 ----- 42      RRN     R7,S(OBLKSEG)      # SET UP SEGMENT NUMBER
0012534      43      LR      R10,RO      # GENERIC DATA
0012534      44      LR      R11,R1
0012535 06 001476 003541 000307 TTYTBL -001- 45 # R12,R13 = TYPED DATA
0012537 06 001500 030402 021637 TDATA 46      SPELL   R6,(E,R,R)
0012541 06 001502 024004 ----- TDATA 47      LI      R6,EXRR
0012541      48      LL      RO,WDSTR
0012541      49      TBN     RO,S(WDSTR)

```

COMMON NONRESIDENT UTILITIES

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OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

LOAD OR VERIFY OVERWRITE

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```

0012542
0012542 06 001503 055006 ----- 0012550 -002- 01 IF CF THEN RGBEGIN
                                         02 BNC IFS2420
                                         03 OWPROG OW 0(1504),0(1505) # 12439
                                         -001- 04 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 001504
                                         *****

0012543
                                         08 PRINT FMT=(WRD,WRD,WRD,DEC,H_C,L_X,H_D,L_X,H_D,L_X),ZSPRS=NO
-001- 10 # MESSAGE PROTOTYPE
-001- 11 # mm WRD WRD WRD dddd xxxxx oxxxx oxxxx
0012543 06 001504 073053 ----- -002- 12 BSAI PXMRY # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
0012544 06 001505 010200 ----- -002- 13 VFD 1,0 2,0 1,1 3,0 1,0 1,1 1,0 2,0 1,0 3,0
0012545 06 001506 062500 ----- -002- 14 VFD 4,TTYO_L_X 4,TTYO_H_C 4,TTYO_DEC 4,TTYO_WRD
0012546 06 001507 066154 ----- -002- 15 VFD 4,TTYO_L_X 4,TTYO_H_D 4,TTYO_L_X 4,TTYO_H_D
-001- 16 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS R4,R5,R6,R7,R8,R9,R10,R11,R1
,R13,
0012547
                                         19 EOW # 12439
-001- 20 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 001507
*****

0012547 06 001510 153005 ----- 0012554 24 B VEROWFAILNP
0012550 25 RGEND
0012550 -001- 26 IFS2420
27 OWPROG OW 0(1511),0(1512) # 12439
-001- 28 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 001511 *****

0012550
                                         31 PRINT FMT=(WRD,WRD,WRD,DEC,H_C,L_X,SKP,L_X,SKP,L_X),ZSPRS=NO
-001- 33 # MESSAGE PROTOTYPE
-001- 34 # mm WRD WRD WRD dddd xxxxx xxxx xxxx
0012550 06 001511 173053 ----- -002- 35 BSAI PXMRY # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
0012551 06 001512 010200 ----- -002- 36 VFD 1,0 2,0 1,1 3,0 1,0 1,1 1,0 2,0 1,0 3,0
0012552 06 001513 062500 ----- -002- 37 VFD 4,TTYO_L_X 4,TTYO_H_C 4,TTYO_DEC 4,TTYO_WRD
0012553 06 001514 061142 137000 -002- 38 VFD 4,TTYO_L_X 4,TTYO_SKP 4,TTYO_L_X 4,TTYO_SKP
-001- 39 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS R4,R5,R6,R7,R8,R9,R11,R13,
# 12439
0012554
                                         41 EOW # 12439
-001- 42 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 001514 *****
*

```

COMMON NONRESIDENT UTILITIES

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E01

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

LOAD OR VERIFY OVERWRITE

CNRUTL

W77D

0012554

0012554 06 001515 137000 014630 0014630

01 VEROWFAILNP

02 BL REQFAIL

COMMON NONRESIDENT UTILITIES

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OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

INITIALIZE, UPDATE, OR OUTPUT THE OVERWRITE FILE

CNRUTL

W77D

```

0012556      01 OPOWFILE
0012556      02 INITOWFI
0012556      03 UPDOWFIL
0012556      04 # THESE MESSAGES HAVE THE FOLLOWING FORMS AND PURPOSES:
0012556      05
0012556      06 #   INIT:OWFILE!
0012556      07
0012556      08 # THE HEADER OF THE PATCH FILE IS FORMATTED AND WRITTEN ONTO TAPE. THIS
0012556      09 # OPERATION INITIALIZES THE FILE AND MUST PRECEDE ANY OTHER PATCH FILE OPERATION
0012556      10 # ON A NEW TAPE. IF THIS OPERATION IS REQUESTED WHEN THE PATCH FILE ALREADY
0012556      11 # CONTAINS OVERWRITES, ALL PREVIOUS RESIDENT OVERWRITES ARE WIPED OUT AS ARE
0012556      12 # ALL RECORDS OF NONRESIDENT OVERWRITES. IF IT IS DESIRED THAT THE PATCH FILE
0012556      13 # HEADER CONTAIN THE IDENTITY OF THE GENERIC AND ISSUE CONTAINED ON THE TAPE,
0012556      14 # THIS INFORMATION MUST BE ENTERED PRIOR TO THIS REQUEST VIA THE IN:GENID AND
0012556      15 # IN:ISSID TTY MESSAGES.
0012556      16
0012556      17 #   UPD:OWFILE!
0012556      18
0012556      19 # THIS OPERATION IS IDENTICAL TO INIT:OWFILE EXCEPT THAT NO OVERWRITES
0012556      20 # ARE LOST. THE FILE HEADER IS READ, MODIFIED, AND REWRITTEN. THE MODIFICATION
0012556      21 # CONSISTS OF UPDATING THE GENERIC AND ISSUE IDENTIFIERS. THE NEW IDENTIFIERS
0012556      22 # MUST HAVE BEEN ENTERED PRIOR TO THIS REQUEST VIA THE IN:GENID AND IN:ISSID
0012556      23 # TTY MESSAGES.
0012556      24
0012556      25 #   OP:OWFILE! or OP:OWFILE(mm,dd,yy),trnsln!
0012556      26
0012556      27 # THIS MESSAGE IS USED TO PRINT A CENSUS OF THE OVERWRITE FILE ON THE TTY.
0012556      28 # THE CENSUS CONSISTS OF A HEADER LINE, TWO LINES TO SPECIFY THE GENERIC AND
0012556      29 # ISSUE IDENTIFIERS, AND A LINE FOR EACH OVERWRITE IN THE FILE. THE INFORMATION
0012556      30 # PRINTED FOR EACH OVERWRITE INCLUDES ITS NUMBER, ITS STATUS, AND THE DATE AND
0012556      31 # HOUR ON WHICH IT WAS FIRST ENTERED.
0012556      32
0012556      33 # AS AN ADDITIONAL OPTION, A SHORT CENSUS CAN BE PRINTED WHICH WILL
0012556      34 # LIST ONLY THOSE OVERWRITES ENTERED AFTER A CERTAIN DATE, AND/OR ONLY
0012556      35 # TRNSLN OVERWRITES. (SEE THE MESSAGE DESCRIPTION IN THE IM/OM SECTION).
0012556      36
0012556      37 # AS NOTED ABOVE, INIT:OWFILE AND UPD:OWFILE ARE VIRTUALLY IDENTICAL. THEY
0012556      38 # SHARE THE SAME CODE EXCEPT FOR THE STATEMENT WHICH WRITES AN OVERWRITE
0012556      39 # END-OF-FILE FLAG IMMEDIATELY FOLLOWING THE HEADER DURING EXECUTION OF
0012556      40 # INIT:OWFILE. THESE TWO OPERATIONS ARE DIFFERENTIATED FROM EACH OTHER AND
0012556      41 # FROM THE OP:OWFILE REQUEST BY INTERROGATING THE TTY INPUT VERB.
0012556      42
0012556      43 # THE EXECUTION OF THE OP:OWFILE ROUTINE IS INDEPENDENT OF THE OTHER TWO EXCEPT
0012556      44 # THAT IT SHARES THE CODE TO OPEN AND CLOSE THE FILE.
0012556      45 # THE FIRST THREE OUTPUT LINES ARE PRINTED LINEARLY. THE LINES FOR EACH
0012556      46 # OVERWRITE ARE PRINTED IN THE LOOP AT SYMBOL 'RDRCPLP'. THE PROCEDURE
0012556      47 # 'RDOWRCRD' IS CALLED REPEATEDLY TO READ AN OVERWRITE FROM THE FILE INTO
0012556      48 # OWBUFFER. THE INFORMATION IS RETRIEVED FROM THAT BUFFER AND THE PRINT ROUTINE
0012556      49 # IS CALLED. EVENTUALLY, RDOWRCRP ENCOUNTERS THE OVERWRITE END-OF-FILE MARK AND

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COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TR:DE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 190

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

INITIALIZE, UPDATE, OR OUTPUT THE OVERWRITE FILE

CNRUTL

W77D

D1 # RETURNS THAT INDICATION TO THE OP:OWFILE ROUTINE WHICH THEN TERMINATES.

```

05 # R6 = mm (BCD)
06 # R7 = dd (BCD)
07 # R8 = yy (BCD)
08 # R9 = TRNSLN
09 BEGIN ( )
0012556 0012556
0012556 06 001517 137020 014561 0014561 -001- 10 CALL FRSTCHK
0012560 06 001521 154002 ----- 0012562 -001- 11 BSA FRSTCHK
0012561 06 001522 056400 ----- -002- 12 IF CF = 0 THEN RETURN
0012562 06 001523 106006 ----- -001- 13 BC IFS2445
0012563 06 001524 010410 ----- 14 BTS A
0012564 06 001525 016007 000377 15 IFS2445
0012566 06 001527 006030 ----- 16 LR RO,R6
0012567 06 001530 010430 ----- 17 RLN RO,8
0012570 06 001531 037020 014576 0014576 -001- 18 IRM RO,R7,MSK(8) # RO = mddd
0012572 06 001533 106140 ----- 19 LR R1,R8 # R1 = yy00
0012573 06 001534 003160 ----- 20 RLN R1,8
0012574 06 001535 003625 000260 TTYTBL -001- 21 CALL PACKDATE
0012576 06 001537 030164 ----- 22 BSA PACKDATE
0012577 06 001540 003601 001423 -001- 23 LR R6,RD
0012601 06 001542 037000 014722 0014722 -001- 24 ZR TRN_OP
25 SPELL R9,(T,R,N,S,L,N),OP=CI
26 CI R9,TRNSLN
27 ICF TRN_OP,S(TRN_OP)
28 RTB TTYIN
29 LI RTBPM,*-RTBPMORG+4
30 BL ADVPMTTYIN

33 # R6 = DATE (BINARY)
34 # TRN_OP= IF TRNSLN REQUEST
0012603 06 001544 103000 ----- 35 ZR RO
0012604 06 001545 034400 010041 0010041 36 STL RO,SEQKEY # LOCKOUT ALL OW MESSAGES EXCEPT IN:OW
0012606 06 001547 003020 ----- 37 ZR R1 # POSITION TAPE AT BEGINNING OF FILE
38 OPEN OVWCLNT,(P,A,T,C,H)
0012607 06 001550 037020 126205 CTAPH -002- 39 BSA OPENTCB
0012611 06 001552 014102 ----- -001- 40 VFD 5,OVWCLNT 1,0 1,0 2,0 3,((S+1)/2)+1 1,0 3,((S+1)/2)-1
0012612 06 001553 050101 ----- -001- 41 VFD 8,ASC_P 8,ASC_A
0012613 06 001554 152303 ----- -001- 42 VFD 8,ASC_T 8,ASC_C
0012614 06 001555 044000 150400 -001- 43 VFD 8,ASC_H 8,ASC_
0012615 06 001556 150400 014630 0014630 44 BNCL REQFAIL
0012617 06 001560 037020 014676 0014676 -001- 45 RTB TAPE
46 BSA ADVPMTAPE

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COMMON NONRESIDENT UTILITIES

PR-1C95. -50

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OVERWRITE MULTISCAN FUNCTION

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INITIALIZE, UPDATE, OR OUTPUT THE OVERWRITE FILE

CNRUTL W77D

0012621	06	001562	173047	-----		01	RD1BLK	OVWCLNT,DUMUNLOD	
0012622	06	001563	014400	011161	0011161	-002-	BSAI	RXEQR	# SUBROUTINE REQR IS IN PROGRAM CTAPH
0012624	06	001565	137020	014676	0014676	-001-	ADDR	DUMUNLOD,OVWCLNT+E(7)+RD1BLK+E(3)	
						04	RTB	TAPE	
						05	BSA	ADVPMTAPE	
0012626	06	001567	103401	000027	TTYTBL	-001-	SPELL	RO,(O,P)	
0012630						09	LI	RO,OXF	
0012630	06	001571	020004	-----		10	IF	RO = TTYVERB THEN RGBEGIN	
0012631	06	001572	054032	-----	0012663	-002-	CR	RO,TTYVERB	
						11	BC	IFS2461	
						12			
						13		# FORMAT PATCH FILE HEADER	
0012632	06	001573	003014	-----		14	LN	RO,12	
0012633	06	001574	003421	177777		15	LI	R1,MSK(16)	
0012635	06	001576	035400	045267	CTAPH	16	STAL	RO,I_OBUF+I_OBUFD,RA1	
0012637	06	001600	044421	-----		17	ST	R1,1(RA1)	
						18	SPELL	R2,(I,N,I,T)	
0012640	06	001601	003441	000023	TTYTBL	-001-	LI	R2,IXNIT	
0012642						20	IF	R2 = TTYVERB THEN STX R1,RO(RA1) # MARK END OF ACTIVE OVERWRITE FILE	
0012642	06	001603	020044	-----		-002-	CR	R2,TTYVERB	
0012643	06	001604	055002	-----	0012645	-001-	BNC	IFS2466	
0012644	06	001605	046420	-----		-001-	STX	R1,RO(RA1) # MARK END OF ACTIVE OVERWRITE FILE	
0012645						24			
0012645	06	001606	141402	-----		25		IFS2466	
0012646	06	001607	031000	010042	0010042	26	LA	RO,2(RA1) # SETUP FOR MOVST	
0012650	06	001611	003010	-----		27	LAL	RO,GENISS,RAO	
0012651						28	LN	RO,TBLSIZ(GENISS)	
0012651	06	001612	073033	-----		29	CALL	MOVST	
						-001-	BSAI	M%OVST # SUBROUTINE MOVST IS IN PROGRAM CSYSUB	
						30	BACKSP	OVWCLNT	
0012652	06	001613	173047	-----		-002-	BSAI	RXEQR # SUBROUTINE REQR IS IN PROGRAM CTAPH	
0012653	06	001614	016100	137020		-001-	VFD	5,OVWCLNT 4,BACKSP 1,1 1,0 5,0	
0012654						34	RTB	TAPE	
0012654	06	001615	137020	014676	0014676	-001-	BSA	ADVPMTAPE	
0012656	06	001617	173047	-----		38	WRTAB	OVWCLNT	
0012657	06	001620	014740	137020		-002-	BSAI	RXEQR # SUBROUTINE REQR IS IN PROGRAM CTAPH	
0012660						40	VFD	5,OVWCLNT 4,WRTAB 1,1 1,1 5,0	
0012660	06	001621	137020	014676	0014676	-001-	RTB	TAPE	
						41	BSA	ADVPMTAPE	
0012662	06	001623	153212	-----	0013074	45	B	OPOWFILEPASS	
0012663						46	RGEND		
0012663						-001-		IFS2461	

COMMON NONRESIDENT UTILITIES

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OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

INITIALIZE, UPDATE, OR OUTPUT THE OVERWRITE FILE

CNRUTL

W770

```

01 # OP:OWFILE ROUTINE
02 # R6 = PACKED VERSION OF DATE REQUESTED
03 # PRINT CENSUS ON TTY
04 ZBN OWFILSW,S(OWFILSW) # OP:OWFILE PRINT SWITCH OFF
0012663 06 001624 122167 -----
0012664 06 001625 071420 -----
0012665
0012665 06 001626 014146 -----
0012666 06 001627 054003 ----- 0012671
0012667 06 001630 003541 001247 TTYTBL
0012671
0012671
0012671 06 001632 124164 -----
0012672 06 001633 055003 ----- 0012675
0012673 06 001634 003541 001247 TTYTBL
0012675
0012675 06 001636 130400 045270 CTAPH
0012677 06 001640 004401 -----
0012700
0012700 06 001641 054003 ----- 0012703
0012701 06 001642 003541 000307 TTYTBL
0012703
0012703
0012703
001- 07 IF R6 = 0 THEN SPELL R6,(S,E,L,C,T)
001- 08 TZ R6
001- 09 BC IFS2476
001- 10 LI R6,SXELCT
001- 11 IFS2476
001- 12 IF TRN_OP = 1 THEN SPELL R6,(S,E,L,C,T)
001- 13 TBN TRN_OP,S(TRN_OP)
001- 14 BNC IFS2481
001- 15 LI R6,SXELCT
001- 16 IFS2481
001- 17 LL RD,I_OBUF+I_OBUFD+1
001- 18 AN RD,1
001- 19 IF CF = 0 THEN SPELL R6,(E,R,R)
001- 20 BC IFS2487
001- 21 LI R6,EXRR
001- 22 IFS2487
001- 23 PRINT FMT=(WRD,WRD,WRD),LINK=YES
001- 24 # MESSAGE PROTOTYPE
001- 25 # mm WRD WRD WRD
001- 26 BSAI PXMRY # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
0012703 06 001644 173053 -----
0012704 06 001645 000210 -----
0012705 06 001646 021040 -----
0012706 06 001647 021042 -----
001- 27 VFD 1,0 2,0 1,0 3,0 1,0 1,1 1,0 2,0 1,1 3,0
001- 28 VFD 4,TTYO_4,TTYO_4,TTYO_4,TTYO_WRD
001- 29 VFD 4,TTYO_4,TTYO_4,TTYO_4,TTYO_
001- 30 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS R4,R5,R6,
THIS IS THE FIRST SEGMENT OF A LINKED MESSAGE
001- 32 NOTE
0012707 06 001650 171400 -----
0012710 06 001651 054166 ----- 0013076
0012711
0012711 06 001652 037020 014672 0014672
001- 33 GA
001- 34 BC OPOWFILEFAIL
001- 35 RTB TTYOUT
001- 36 BSA ADVPMTTYOUT
0012713 06 001654 171420 -----
0012714 06 001655 006011 -----
0012715 06 001656 031140 045271 CTAPH
0012717 06 001660 040161 -----
0012720 06 001661 040202 -----
0012721 06 001662 040223 -----
0012722
001- 39 HA
001- 40 LR RD,TTYLINK
001- 41 LAL R6,I_OBUF+I_OBUFD+2,RAD # LOAD GENERIC IDENTIFIER
001- 42 L R7,1(RAD)
001- 43 L R8,2(RAD)
001- 44 L R9,3(RAD)
001- 45 LPRINT FMT=(WRD(CR,LF,SP,SP,SP,SP),WRD(G,E,N,I,D),ASC,ASC,ASC,ASC),LINK
=YES,PRIOR=3

```

COMMON NONRESIDENT UTILITIES

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OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

INITIALIZE, UPDATE, OR OUTPUT THE OVERWRITE FILE

CNRUTL W77D

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-001- 01 # MESSAGE PROTOTYPE
-001- 02 # CRLFSPSPSP GENID aaaaaaaaa
0012722 06 001663 073054 ----- -002- 03 BSAI LXPMPRY # SUBROUTINE LPMRY IS IN PROGRAM TTYAPP
0012723 06 001664 100270 ----- -002- 04 VFD 1,1 2,0 1,0 3,0 1,0 1,1 1,0 2,3 1,1 3,0
0012724 06 001665 031463 ----- -002- 05 VFD 4,TTYO_ASC 4,TTYO_ASC 4,TTYO_ASC 4,TTYO_ASC
0012725 06 001666 021042 ----- -002- 06 VFD 4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_
0012726 06 001667 010000 ----- TTYTBL -002- 07 VFD 5,2 11,qtzzzz
0012727 06 001670 000125 ----- TTYTBL -002- 08 VFD 5, 11,6XENID
-001- 09 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS R6,R7,R8,R9,
THIS IS A SEGMENT OF A LINKED MESSAGE
-001- 11 NOTE
12 GA
0012730 06 001671 171400 ----- 13 RTB TTYOUT
0012731 14 BSA ADVPMTTYOUT
0012731 06 001672 037020 014672 0014672 -001- 14
0012733 06 001674 171420 ----- 17 HA
0012734 06 001675 006011 ----- 18 LR RO,TTYLINK
19 OWPROG OW 0(1676) # 12364
-001- 20 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 001676 *****
0012735 06 001676 037000 111540 0000106 -001- 23 CPATCH BGNP 0(106) # 12364
-001- 24 BL XXX2509
-001- 25 NOTE CPATCH 'CSECT'
-001- 26 NOTE ***** PATCH AREA BEGINS AT 000106 *****
0111540 -001- 29 XXX2509 PATCHAREA
0111540 10 000106 131140 045271 CTAPH 30 LAL R6,I OBUF+I_OBUFD+2,RAO # LOAD ISSUE IDENTIFIER
0111542 10 000110 040144 ----- 31 L R6,4(RAO)
0111543 10 000111 040165 ----- 32 L R7,5(RAO)
0111544 33 ENDP # 12364
0111544 10 000112 037000 012737 0001700 -001- 34 BL XXX2511
-001- 35 NOTE ***** LAST PATCH ADDRESS USED IS 000113 *****
-001- 36 NOTE ***** NUMBER OF PATCH WORDS USED IS 6 (DECIMAL) *****
0012737 -001- 39 XXX2511 ONCONTINUE
0012737 06 001700 140206 ----- 40 L R8,6(RAO)
0012740 41 EOW # 12364
-001- 42 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 001700 *****
*
```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 194

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

INITIALIZE, UPDATE, OR OUTPUT THE OVERWRITE FILE

CNRUTL W77D

```

0012740 06 001701 040227 ----- 01 L R9,7(RAD)
0012741 02 LPRINT FMT=(WRD(CR,LF,SP,SP,SP,SP),WRD(I,S,S,I,D),ASC,ASC,ASC,ASC),LINK
                                     =YES,PRIOR=3

-001- 05 # MESSAGE PROTOTYPE
-001- 06 # CRLFSPSPSPSP ISSID aaaaaaa
0012741 06 001702 073054 ----- -002- 07 BSAI LXPMPY # SUBROUTINE LPMRY IS IN PROGRAM TTYAPP
0012742 06 001703 100270 ----- -002- 08 VFD 1,1 2,0 1,0 3,0 1,0 1,1 1,0 2,3 1,1 3,0
0012743 06 001704 031463 ----- -002- 09 VFD 4,TTYO_ASC 4,TTYO_ASC 4,TTYO_ASC 4,TTYO_ASC
0012744 06 001705 021042 ----- -002- 10 VFD 4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_
0012745 06 001706 010000 ----- TTYTBL -002- 11 VFD 5,2 11,qtzzzz
0012746 06 001707 000140 ----- TTYTBL -002- 12 VFD 5, 11,IXSSID
-001- 13 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
                                     CONTAINED IN GENERAL REGISTERS R6,R7,R8,R9,
                                     THIS IS A SEGMENT OF A LINKED MESSAGE

0012747 06 001710 171400 ----- -001- 15 NOTE
0012750 16 GA
0012750 06 001711 037020 014672 0014672 -001- 17 RTB TTYOUT
0012750 18 BSA ADVPMTTYOUT

21 IOBPTR = 12 # POINT TO FIRST WORD OF FIRST RECORD--SKIP
                                     HEADER
0012752 06 001713 103074 ----- -005- 23 LN IOBPTR,12
0012753 24 RDRCDLP
0012753 25 CALLPROC RDOWRCRD
0012753 06 001714 103641 001577 -001- 26 LI PROCPM,*-RTBPMORG+4
0012755 06 001716 037000 014117 0014117 -001- 27 BL RDOWRCRD
0012757 06 001720 154076 ----- 28 BC OPOWFILECOMPL
0012760 06 001721 031000 010052 0010052 29 LAL RO,OWBUFFER,RAO # UP ADDRESS USED BELOW

31 # AN OVERWRITE IS IN THE OWBUFFER - CHECK FOR PRINTING
32 # TURN ON OP:OWFILE SWITCH FOR PROPER DATE
0012762 33 IF OWFILSW = 0 THEN RGBEGIN
0012762 06 001723 024167 ----- -003- 34 TBN OWFILSW,S(OWFILSW)
0012763 06 001724 054011 ----- 0012774 -001- 35 BC IFS2532
0012764 06 001725 040002 ----- 36 L RO,2(RAO)
0012765 06 001726 040023 ----- 37 L R1,3(RAO)
0012766 38 CALL PACKDATE
0012766 06 001727 037020 014576 0014576 -001- 39 BSA PACKDATE
0012770 06 001731 105006 ----- 40 SR RO,R6
0012771 06 001732 055003 ----- 0012774 41 BNC TOO_OLD
0012772 06 001733 026167 ----- 42 SBN OWFILSW,S(OWFILSW) # TURN ON PRINT
0012773 06 001734 003140 ----- 43 ZR R6 # R6 = LINE COUNTER
0012774 44 TOO_OLD
0012774 45 RGEND
0012774 -001- 46 IFS2532

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

INITIALIZE, UPDATE, OR OUTPUT THE OVERWRITE FILE

CNRUTL

W77D

```

01 # TEST FOR SUPPRESSION OF CENSUS LINE
0012774 06 001735 124167 ----- 02
0012774 06 001735 124167 ----- -003- 03 IF OWFILSW = 1 THEN RGBEGIN # SKIP PRINT IF CF = 0
0012775 06 001736 055057 ----- 0013054 -001- 04 TBN OWFILSW,S(OWFILSW)
0012776 06 001737 024164 ----- 05 BNC IFS2537
0012776 06 001737 024164 ----- -003- 06 IF TRN_OP = 0 THEN B PRINTOWFILE
0012777 06 001740 055003 ----- 0013002 -001- 07 TBN TRN_OP,S(TRN_OP)
0013000 06 001741 051045 ----- 08 BNC PRINTOWFILE
0013001 06 001741 051045 ----- 09 TBS N(OWTYPE)(RAD),S(OWTYPE)
0013001 06 001742 055053 ----- 0013054 -001- 10 IF CF = 1 THEN RGBEGIN
0013001 06 001742 055053 ----- 11 OWPROG BNC IFS2543
0013001 06 001742 055053 ----- -001- 12 OW OW 0(1743) # 12439
NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 001743
*****

```

```

0013002 16 PRINTOWFILE
0013002 17 TAKEOUT 20
0013002 06 001743 106000 ----- -001- 18 LR 0,0
0013003 06 001744 006000 ----- -001- 19 LR 0,0
0013004 06 001745 006000 ----- -001- 20 LR 0,0
0013005 06 001746 006000 ----- -001- 21 LR 0,0
0013006 06 001747 006000 ----- -001- 22 LR 0,0
0013007 06 001750 006000 ----- -001- 23 LR 0,0
0013010 06 001751 006000 ----- -001- 24 LR 0,0
0013011 06 001752 006000 ----- -001- 25 LR 0,0
0013012 06 001753 006000 ----- -001- 26 LR 0,0
0013013 06 001754 006000 ----- -001- 27 LR 0,0
0013014 06 001755 006000 ----- -001- 28 LR 0,0
0013015 06 001756 006000 ----- -001- 29 LR 0,0
0013016 06 001757 006000 ----- -001- 30 LR 0,0
0013017 06 001760 006000 ----- -001- 31 LR 0,0
0013020 06 001761 006000 ----- -001- 32 LR 0,0
0013021 06 001762 006000 ----- -001- 33 LR 0,0
0013022 06 001763 006000 ----- -001- 34 LR 0,0
0013023 06 001764 006000 ----- -001- 35 LR 0,0
0013024 06 001765 006000 ----- -001- 36 LR 0,0
0013025 06 001766 006000 ----- -001- 37 LR 0,0
0013026 06 001767 071420 ----- 38 HA
0013027 39 EOW
-001- 40 NOTE # 12439
***** THE LAST ADDRESS OVERWRITTEN IS 001767
*****

```

```

0013027 06 001770 006011 ----- 44 LR R0,TTYLINK
0013030 06 001771 040141 ----- 45 L R6,N(OWNO)(RAD)
0013031 06 001772 040165 ----- 46 L R7,N(OWSTAT)(RAD)
0013032 06 001773 003562 000003 47 NI R7,N(OWSTAT)
0013034 06 001775 040202 ----- 48 L R8,2(RAD) # MONTH AND DAY OF INSERTION
0013035 06 001776 040223 ----- 49 L R9,3(RAD) # YEAR AND HOUR OF INSERTION

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 196

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

INITIALIZE, UPDATE, OR OUTPUT THE OVERWRITE FILE

CNRUTL

W77D

```

0013036 06 001777 003240 ----- 01 ZR R10 # DO NOT PRINT A WORD
0013037 06 002000 051045 ----- 02 TBS N(OWTYPE)(RAO),S(OWTYPE)
0013040 03 IF CF = 1 THEN SPELL R10,(T,R,N,S,L,N)
0013040 06 002001 055003 ----- 0013043 -001- 04 BNC IFS2549
0013041 06 002002 003641 000260 TTYTBL -002- 05 LI R10,TXRNSLN
0013043 -001- 06 IFS2549
0013043 07 LPRINT FMT=(WRD(CR,LF,SP,SP,SP,SP),WRD(O,W),DEC5,DEC,BCD,BCD,WRD),LI
NK=YES,PRIOR=3,ZSPRS=NO

-001- 10 # MESSAGE PROTOTYPE
-001- 11 # CRLFSPSPSPSP OW nnnnn ddddd nnnn nnnn WRD
0013043 06 002004 173054 ----- -002- 12 BSAI LXPMRY # SUBROUTINE LPMRY IS IN PROGRAM TTYAPP
0013044 06 002005 110270 ----- -002- 13 VFD 1,1 2,0 1,1 3,0 1,0 1,1 1,0 2,3 1,1 3,0
0013045 06 002006 104111 ----- -002- 14 VFD 4,TTYO_BCD 4,TTYO_BCD 4,TTYO_DEC 4,TTYO_DEC5
0013046 06 002007 021040 ----- -002- 15 VFD 4,TTYO_ 4,TTYO_ 4,TTYO_ 4,TTYO_WRD
0013047 06 002010 010000 ----- TTYTBL -002- 16 VFD 5,2 11,qtzzzz
0013050 06 002011 000202 ----- TTYTBL -002- 17 VFD 5, 11,0XW
-001- 18 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS R6,R7,R8,R9,R10,
0013051 06 002012 171400 ----- -001- 20 NOTE THIS IS A SEGMENT OF A LINKED MESSAGE
0013052 GA
0013052 06 002013 037020 014672 0014672 -001- 22 RTB TTYOUT
BSA ADVPMTTYOUT

0013054 -001- 26 RGEND
0013054 -001- 27 IFS2543
0013054 28 RGEND
0013054 -001- 29 IFS2537
0013054 06 002015 153677 ----- 0012753 30 B RDRCDLP

0013055 34 OPOWFILECOMPL
0013055 35 CALL BLKDATA
0013055 06 002016 137020 127462 CTAPH -001- 36 BSA BLKDATA
0013057 06 002020 106140 ----- 37 LR R6,RD
0013060 06 002021 004541 ----- 38 AN R6,1
39 SPELL R7,(L,E,N,G,T,H)
0013061 06 002022 003561 001127 TTYTBL -001- 40 LI R7,LXLENGTH
0013063 06 002024 006201 ----- 41 LR R8,R1
0013064 06 002025 004601 ----- 42 AN R8,1
0013065 06 002026 006011 ----- 43 LR R0,TTYLINK # SET UP LINK DATA FOR LPRINT CALL
0013066 44 # PRINT FINAL LINK TO DO CR,LF AND TERMINATE OUTPUT MESSAGE.
45 LPRINT FMT=(WRD(CR,LF),WRD(C,U,R,R),DEC,WRD,DEC),PRIOR=3

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 197

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

STOP THE OVERWRITE FUNCTION

CNRUTL W77D

```

0013100          01 STOPOW
0013100          02 # THIS MESSAGE HAS THE FOLLOWING FORM:
0013100          03
0013100          04 #   STOP:OW!
0013100          05
0013100          06 # THE EXECUTION OF THE OVERWRITE PROGRAM IS TERMINATED. IT MUST BE ALLOWED
0013100          07 # AGAIN BEFORE THE OTHER OVERWRITE MESSAGE CAN BE USED.
0013100          08          BEGIN      ( )
0013100          09          IF          OFLUCTL = OWPG THEN RETURN TTY_NG # OW PROGRAM NOT ACTIVE
0013100 06 002041 130400 043177 CTSD   -002- 10          LL          RO,OFLUCTL
0013102 06 002043 003404 000001      -002- 11          XI          RO,OWPG
0013104 06 002045 054002 ----- 0013106 -001- 12          BC          IFS2586
0013105 06 002046 056467 ----- TTYTBL -002- 13          BTSAN      TTY_NG
0013106          -001- 14 IFS2586
0013106 06 002047 103000 -----          15          ZR          RO
0013107 06 002050 026007 ----- BLMMA          16          SBN          RO,OFLUTIL
0013110          17          CALL          MSFABT
0013110 06 002051 073050 -----          -001- 18          BSAI          M$SFABT          # SUBROUTINE MSFABT IS IN PROGRAM CBLM
0013111          19          IF          CF THEN RETURN TTY_NG
0013111 06 002052 155002 ----- 0013113 -002- 20          BNC          IFS2591
0013112 06 002053 056467 ----- TTYTBL -003- 21          BTSAN      TTY_NG
0013113          -002- 22 IFS2591
0013113          23          RETURN      TTY_PF
0013113 06 002054 156463 ----- TTYTBL -001- 24          BTSAN      TTY_PF

```

COMMON NONRESIDENT UTILITIES

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0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 199

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

HASHSUM FUNCTION DESCRIPTION

CNRUTL

W77D

01 # DESCRIPTION:
02 # A hashsum algorithm has been defined to provide a simple and relatively
03 # accurate means of validating generic and translation data for both current
04 # and new data. This section implements several functions to calculate,
05 # output, verify, and update these hashsums under control of a craftsman
06 # as part of the overwrite (OW) or other procedure. Hashsums are defined for
07 # resident generic and translation data, nonresident generic (on tape), and
08 # the system bootstrap files. Proper use of these functions will provide a
09 # means of accurately ascertaining the validity of this data. Comparison
10 # of pre-stored hashsums on tape with those calculated from resident store
11 # permits a significantly faster reload of only mutilated data during a system
12 # bootstrap reload function. The hashsum algorithm is applied in a manner
13 # which varies with the function. These are described in the following sections.
14 # The basic algorithm is explained in detail in the hashsum subroutine text.

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 200

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

RESIDENT GENERIC AND TRANSLATION DATA HASHSUMS

CNRUTL W77D

```

01 # DESCRIPTION:
02 # Hashsums are calculated over resident generic and translation data in blocks
03 # of 32K (32768) words. The hashsums for one block are completely independent
04 # of data from other blocks, i.e., the hashsum for location n is calculated
05 # over data starting at the next lower 32K-word store boundary and continuing
06 # up to, and including, the word at address n. A separate hashsum can be
07 # obtained for each MAS word if desired. Unwrite-protected areas of store
08 # found within the generic program (temporary store) are skipped and do not
09 # contribute to the hashsum calculations. The last generic hashsum will
10 # end on the last word of generic, regardless of boundary alignment. The first
11 # translation hashsum calculation begins with the first word of translations,
12 # also regardless of boundary alignment.
0013114 13
14 # ENTRIES:
15 # OPHASH

0013114 17 OPHASH
18 # TTY INPUT MESSAGES
19 # OP:HASH:GENERIC lastadr bgnadr!
20 # OP:HASH:TRNSLN lastadr bgnadr!
21 # R7 = GENERIC/TRNSLN
22 # R8,R9 = lastadr
23 # R10,R11 = bgnadr

0013114 25 BEGIN ( )
0013114 26 CALL FRSTCHK
0013114 06 002055 137020 014561 0014561 -001- 27 BSA FRSTCHK
0013116 28 IF CF = 0 THEN RETURN
0013116 06 002057 154002 ----- 0013120 -001- 29 BC IFS2604
0013117 06 002060 056400 ----- -002- 30 BTSA
0013120 -001- 31 IFS2604
32 # DETERMINE LEGALITY OF MESSAGE AND SET OPTION FLAGS AS REQUIRED
0013120 06 002061 103565 001445 TTYTBL -001- 33 SPELL R7,(G,E,N,E,R,I,C),OP=CI
0013122 34 CI R7,GXENERIC
0013122 06 002063 055003 ----- 0013125 -001- 35 IF CF = 1 THEN RGBEGIN
0013123 06 002064 022164 ----- 36 BNC IFS2609
0013124 06 002065 053007 ----- 0013133 37 ZBN TRN_OP,S(TRN_OP)
0013125 38 B OPHASHCONT
0013125 -001- 39 RGEND
40 IFS2609
0013125 06 002066 103565 000260 TTYTBL -001- 41 SPELL R7,(T,R,N,S,L,N),OP=CI
0013127 42 CI R7,TXRNSLN
0013127 06 002070 055003 ----- 0013132 -001- 43 IF CF = 1 THEN RGBEGIN
0013130 06 002071 026164 ----- 44 BNC IFS2614
0013131 06 002072 053002 ----- 0013133 45 SBN TRN_OP,S(TRN_OP)
0013132 46 B OPHASHCONT
0013132 -001- 47 RGEND
48 IFS2614
0013132 49 RETURN TTY_NG # NEITHER GENERIC NOR TRNSLN SPECIFIED

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 201

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

RESIDENT GENERIC AND TRANSLATION DATA HASHSUMS

CNRUTL W77D

```

0013132 06 002073 156467 ----- TTYTBL -001- 01      BTSAN  TTY_NG
0013133                                     03 OPHASHCONT
0013133 06 002074 106012 -----          04      LR      RO,R10
0013134 06 002075 014413 -----          05      OR      RO,R11      # CF = 1 MEANS BEGINNING IS NOT SPECIFIED
0013135 06 002076 030165 -----          06      ICF     NOBGN,S(NOBN)
0013136                                     07
0013136 06 002077 006010 -----          08      LR      RO,R8
0013137 06 002100 014411 -----          09      OR      RO,R9
0013140 06 002101 030166 -----          10      ICF     NOLAST,S(NOLAST) # CF = 1 MEANS LAST ADDRESS IS NOT SPECIFIED
          11 # LOAD DEFAULT FOR LAST ADDRESS INTO RA1
0013141 06 002102 031342 021637 TDATA          12      LAL     RA1,STRLIM,RA0
0013143 06 002104 040361 -----          13      L      RA1+1,1(RA0)
0013144                                     14      IF     TRN_OP = 0 THEN LAL RO,TDATA-1,RA1
0013144 06 002105 024164 -----          -003- 15      TBN     TRN_OP,S(TRN_OP)
0013145 06 002106 054003 -----          -001- 16      BC      IFS2617
0013146 06 002107 031402 017777 TDATA          -001- 17      LAL     RO,TDATA-1,RA1 #
0013150                                     -001- 18 IFS2617
          19 # RA1 = LAST VALID ADDRESS
0013150                                     20      IF     NOLAST THEN RGBEGIN
0013150 06 002111 124166 -----          -004- 21      TBN     NOLAST,S(NOLAST)
0013151 06 002112 055003 -----          -002- 22      BNC     IFS2621
0013152 06 002113 006216 -----          23      LR      R8,RA1
0013153 06 002114 006237 -----          24      LR      R9,RA1+1      # LAST ADDRESS LOADED
0013154                                     25      RGEND
0013154                                     -001- 26 IFS2621
0013154                                     27      IF     NOBGN THEN RGBEGIN # BEGIN RANGE FOR NO SPECIFIED BEGIN
0013154 06 002115 124165 -----          -004- 28      TBN     NOBGN,S(NOBN)
0013155 06 002116 055023 -----          -002- 29      BNC     IFS2626
          30 # RANGE CHECK LAST ADDRESS (NOT DONE IF BEGINNING IS SPECIFIED)
0013156 06 002117 006310 -----          31      LR      RA0,R8
0013157 06 002120 006331 -----          32      LR      RA0+1,R9
0013160                                     33      CALL   CMPR20
0013160 06 002121 037020 110154 CSYSUB          -001- 34      BSA     CMPR20
0013162                                     35      IF     CF = 1 THEN RETURN TTY_NG # LAST ADDRESS TOO BIG
0013162 06 002123 155002 -----          -001- 36      BNC     IFS2630
0013163 06 002124 056467 -----          -002- 37      BTSAN  TTY_NG
0013164                                     -001- 38 IFS2630
0013164                                     39      IF     TRN_OP THEN RGBEGIN
0013164 06 002125 124164 -----          -004- 40      TBN     TRN_OP,S(TRN_OP)
0013165 06 002126 055013 -----          -002- 41      BNC     IFS2633
0013166 06 002127 031402 020000 TDATA          42      LAL     RO,TDATA,RA1
0013170 06 002131 006256 -----          43      LR      R10,RA1      # LOAD DEFAULT BEGINNING ADDRESS (ASSUME
                                     MULTIPLE 32K BLOCKS)
0013171 06 002132 006277 -----          45      LR      R11,RA1+1
0013172                                     46      CALL   CMPR20
0013172 06 002133 037020 110154 CSYSUB          -001- 47      BSA     CMPR20
0013174                                     48      IF     RO = 2 THEN RETURN TTY_NG # LAST ADDRESS TOO SMALL
0013174 06 002135 103405 000002          -002- 49      CI      RO,2

```

COMMON NONRESIDENT UTILITIES

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D:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 202

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

RESIDENT GENERIC AND TRANSLATION DATA HASHSUMS

CNRUTL W77D

```

0013176 06 002137 055002 ----- 0013200 -001- 01      BNC      IFS2637
0013177 06 002140 056467 ----- TTYTBL  -002- 02      BTSAN    TTY_NG
0013200                                -001- 03 IFS2637
0013200                                04      RGEND
0013200                                -001- 05 IFS2633
0013200                                06      RGEND
0013200                                -001- 07 IFS2626                                # END RANGE NO SPECIFIED BEGIN

C? # BEGINNING AND LAST ADDRESSES ARE LOADED
10 # ASSURE BEGINNING IS NOT GREATER THAN LAST ADDRESS
11 LR      RAO,R8                                # MOVE LAST ADDRESS
12 LR      RAO+1,R9
13 LR      RA1,R10                                # MOVE BEGINNING ADDRESS
14 LR      RA1+1,R11
15 CALL    CMPR20                                # COMPARE LAST AND BEGINNING ADDRESSES
0013204 06 002145 037020 110154 CSYSUB -001- 16      BSA      CMPR20
0013206                                17      IF      RO = 2 THEN RETURN TTY_NG
0013206 06 002147 103405 000002 -002- 18      CI      RO,2
0013210 06 002151 055002 ----- 0013212 -001- 19      BNC      IFS2643
0013211 06 002152 056467 ----- TTYTBL  -002- 20      BTSAN    TTY_NG
0013212                                -001- 21 IFS2643
0013212 06 002153 117560 060040 -001- 22      CIRM    NOBGN,1*ES(NOBN)+0*ES(NOLAST),0,M(NOBN)+M(NOLAST)
0013214                                23      IF      CF = 1 THEN RGBEGIN # SINGLE HASHSUM REQUEST
0013214 06 002155 055012 ----- 0013226 -001- 24      BNC      IFS2646
0013215 06 002156 003722 100000 -001- 25      NI      R13,-32KMSK # JAM TO NEXT LOWER 32K BOUNDARY
0013217                                26      CALL    CMPR20
0013217 06 002160 037020 110154 CSYSUB -001- 27      BSA      CMPR20
0013217                                28      OWPROG OW      0(2162) # 12651
-001- 29      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002162
*****

33 DINSERT NOTE ' IF RO = 0 THEN RGBEGIN
34 DDELETE NOTE 2
0013221 06 002162 103405 000000 -001- 35      CI      RO,0
0013223 06 002164 055003 ----- 0013226 -001- 36      BNC      TC LABEL
0013224 06 002165 006254 ----- -001- 37      LR      R10,RAO # OVERWRITE WITH HIGHER BEGINNING ADDRESS
0013225 06 002166 006275 ----- -001- 38      LR      R11,RAO+1
0013226                                39      EOW    # 12651
-001- 40      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002166
*****

0013226                                44      RGEND
0013226                                -001- 45 IFS2646
0013226                                46 DDELETE NOTE 1
0013226                                47 TC LABEL
0013226                                48 # RAO = GOOD BEGINNING ADDRESS
0013226                                49 OWPROG OW      0(2167) # 12651

```

COMMON NONRESIDENT UTILITIES

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OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

RESIDENT GENERIC AND TRANSLATION DATA HASHSUMS

CNRUTL W77D

```

-001- 01      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002167 *****

0013226
0013226 06 002167 106000 ----- -001- 04      TAKEOUT 2
0013227 06 002170 006000 ----- -001- 05      LR      0,0
0013230 -001- 06      LR      0,0
-001- 07      EOW # 12651
-001- 08      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002170 *****
*

0013230 06 002171 006310 ----- 12      LR      RAO,R8
0013231 06 002172 006331 ----- 13      LR      RAO+1,R9
0013232 -001- 14      RTB      TTYIN
0013232 06 002173 003601 002056 -001- 15      LI      RTBPM,*-RTBPMORG+4
0013234 06 002175 037000 014722 0014722 -001- 16      BL      ADVPHTTYIN

19 # RAO = LAST ADDRESS
20 # R10,R11 = BEGINNING (CURRENT) ADDRESS
21 # R6 = HASHSUM VALUE
22      ZR      R6 # ZERO HASHSUM VALUE (INITIALIZE)
23 NEWR10R11
24      LR      RA1,R10
25      LR      RA1+1,R11
26      IF      NOBGN THEN RGBEGIN # ARE CHECKS ON?
27      TBN      NOBGN,S(NOBGN)
28      BNC      IFS2660
29      CALL     RGCHKADR
30      BSAI     rgchkAdr # SUBROUTINE RGCHKADR IS IN PROGRAM CSYSUB
31      IF      R0 = 2 THEN RGBEGIN
32      CI      R0,2
33      BNC      IFS2664
34      OI      R15,4KMSK
35      LN      R1,1
36      CALL     ADD16 # PUT RA1 ON NEXT 4K BOUNDARY
37      BSA      ADD16
38      LR      R10,RA1
39      LR      R11,RA1+1
40      OWPROG  OW      O(2217) # 12651
-001- 41      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002217 *****
*****

0013256 06 002217 053027 ----- 0013305 45      B      CMPRADR
0013257 -001- 46      TAKEOUT 2
0013257 06 002220 006000 ----- -001- 47      LR      0,0
0013260 06 002221 006000 ----- -001- 48      LR      0,0
0013261 -001- 49      EOW # 12651

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 204

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

RESIDENT GENERIC AND TRANSLATION DATA HASHSUMS

CNRUTL W770

```

-001- 01      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002221
*****

0013261      05      RGEND
0013261      -001- 06 IFS2664
0013261      07      RGEND
0013261      -001- 08 IFS2660
0013261 06 002222 103763 000077      09      OI      R15,HASHLENMAX-1 # TARGET LAST ADDRESS FOR THIS LOOP
0013263      10      CALL    CMPR20
0013263 06 002224 037020 110154 CSYSUB -001- 11      BSA      CMPR20
0013265      12      IF      CF = 0 THEN LR R15,R13
0013265 06 002226 154002 ----- 0013267 -001- 13      BC      IFS2675
0013266 06 002227 006375 -----      LR      R15,R13 #
0013267      -001- 15 IFS2675
0013267 06 002230 105373 -----      16      SR      R15,R11
0013270 06 002231 006017 -----      17      LR      RO,R15
0013271 06 002232 004401 -----      18      AN      RO,1 # RO = LENGTH
0013272 06 002233 006373 -----      19      LR      R15,R11 # RESTORE BASE ADDRESS OF CALCULATION
0013273      20      ARL    R10,RO # ADVANCE R10,R11 TO NEXT BASE ADDRESS
0013273 06 002234 001660 ----- -001- 21      AR      R10+1,RO
0013274 06 002235 055002 ----- 0013276 -001- 22      BNC    IFS2676
0013275 06 002236 004641 ----- -001- 23      AN      R10,1
0013276 06 002237 106026 -----      24      LR      R1,R6 # PREVIOUS HASHSUM VALUE
0013277 06 002240 024164 -----      25      TBN    TRN_OP,S(TRN_OP)
0013300      26      CALL    HASHSUMF # COMPUTE HASHSUM
0013300 06 002241 037021 016240 MASACS -001- 27      BSA      HASHSUMF
0013302 06 002243 155043 ----- 0013345      28      BNC    OPHASHFAIL
      29      OWPROG OW 0(2244) # 12651
-001- 30      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002244 *****

0013303 06 002244 037000 014774 0014774 -001- 33      OWPROG BGNP 0(3735) # 12651
      34      BL      XXX2680
-001- 35      NOTE  OWPROG 'CSECT'
-001- 36      NOTE ***** PATCH AREA BEGINS AT 003735 *****

0014774      -001- 39 XXX2680 PATCHAREA
0014774 06 003735 106141 -----      40      LR      R6,R1
0014775 06 003736 006352 -----      41      LR      R14,R10
0014776 06 003737 006373 -----      42      LR      R15,R11
0014777      43      ENDP # 12651
0014777 06 003740 037000 013305 0013305 -001- 44      BL      XXX2682
-001- 45      NOTE ***** LAST PATCH ADDRESS USED IS 003741 *****
-001- 46      NOTE ***** NUMBER OF PATCH WORDS USED IS 5 (DECIMAL) *****

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 205

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

RESIDENT GENERIC AND TRANSLATION DATA HASHSUMS

CNRUTL W77D

```

0013305 -001- 01 XXX2682 OWCONTINUE
0013305 02 CMPRADR
0013305 03 CALL CMPR20
0013305 06 002246 137020 110154 CSYSUB -001- 04 RSA CMPR20
0013307 05 EOW # 12651
-001- 06 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002247 *****
*

0013307 06 002250 130220 ----- 10 ICF R9,0 # SAVE RESULT OF COMPARE
0013310 06 002251 016417 077777 11 LRM R0,R15,32KMSK
0013312 12 IF R0 = 0 THEN B PRINTOPHASH
0013312 06 002253 014000 ----- -002- 13 TZ RO
0013313 06 002254 054003 ----- 0013316 -001- 14 BC PRINTOPHASH
0013314 06 002255 024220 ----- 15 TBN R9,0
0013315 06 002256 054016 ----- 0013333 16 BC OPHASHRTB # TAKE BRANCH IF NOT DONE
0013316 17 PRINTOPHASH
0013316 06 002257 171420 ----- 18 HA
0013317 06 002260 003021 ----- 19 LN R1,1
0013320 20 CALL SUB16 # DECREMENT BY 1
0013320 06 002261 037020 110135 CSYSUB -001- 21 BSA SUB16
0013322 06 002263 106206 ----- 22 LR R8,R6
0013323 06 002264 006156 ----- 23 LR R6,RA1
0013324 06 002265 006177 ----- 24 LR R7,RA1+1
0013325 25 PRINT FMT=(WRD,WRD,H_C,L_X,DEC)

-001- 27 # MESSAGE PROTOTYPE
-001- 28 # mn WRD WRD xxxxx dddd
0013325 06 002266 073053 ----- -002- 29 BSAI PXMRY # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
0013326 06 002267 000200 ----- -002- 30 VFD 1,0 2,0 1,0 3,0 1,0 1,1 1,0 2,0 1,0 3,0
0013327 06 002270 022145 ----- -002- 31 VFD 4,TTYO_4,TTYO_DEC 4,TTYO_L_X 4,TTYO_H_C
0013330 06 002271 021042 ----- -002- 32 VFD 4,TTYO_4,TTYO_4,TTYO_4,TTYO_4
-001- 33 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS R4,R5,R6,R7,R8,

0013331 06 002272 171400 ----- 35 GA
0013332 06 002273 003140 ----- 36 ZR R6 # ZERO HASHSUM ACCUM.
0013333 37 OPHASHRTB
0013333 38 RTB
0013333 06 002274 137020 014670 0014670 -001- 39 BSA ADVPM

0013335 06 002276 124220 ----- 42 TBN R9,0
0013336 06 002277 054701 ----- 0013237 43 BC NEWR10R11 # TAKE BRANCH IF NOT DONE

45 # DONE WITH CALCULATION
0013337 06 002300 017560 060040 46 CIRM NOBGN,1*ES(NOBGN)+0*ES(NOLAST),0,M(NOBGN)+M(NOLAST)
0013341 06 002302 050000 014636 0014636 47 BCL NOTTYACK
0013343 06 002304 037000 014625 0014625 48 BL REQPASS

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 206

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

NONRESIDENT GENERIC AND BOOTSTRAP HASHSUMS

CNRUTL W77D

```

01 # DESCRIPTION:
02 # This section calculates hashsums from data residing on the tape cartridges,
03 # i.e., the nonresident generic and the bootstrap. A description of each
04 # function follows.
05
0013347 06 # Hashsums are calculated over nonresident generic in groups of 32 consecutively
07 # numbered segments. The first segment number of such a group is always evenly
08 # divided by 32, except for the first group which must begin with segment 1
09 # (segment 0 is used to indicate resident generic). The last group
10 # terminates on the highest defined segment, and therefore may be fewer than
11 # 32 segments long. A single hashsum is associated with one particular
12 # segment and is computed by applying the basic algorithm over the data
13 # comprising a given group up to that segment. In the general case, the
14 # hashsum calculation on the first word of segment n is a logical continuation
15 # of the hashing from the last word of segment n-1. The values computed for
16 # one group are completely independent from data contained in any other. As an
17 # example, the hashsum for segment 67 is computed from data in segments
18 # 64, 65, 66, and 67. The output messages identify the hashsums by their
19 # associated decimal segment number.
20
0013347 21 # A single hashsum value is also defined for the code comprising the system
22 # bootstrap data. This code is found in the tape cartridge file called
23 # BOOTSTP. The single hashsum is computed like a nonresident generic
24 # segment, i.e., the algorithm is applied over all loaded code words in one
25 # continuous operation. Data is always packed on the tape as 16 bit wide
26 # store words.
27 # For redundancy, the complete bootstrap program is duplicated in a second
28 # tape file called BOOT2. Logically the data in this file exactly equals the
29 # data in the primary copy, and hence, should produce identical hashsums.
30 # The hashsum function over bootstrap data will read and calculate the hashsum
31 # from the BOOTSTP file on track 1 and then automatically repeat the operation
32 # on the BOOT2 file on track 2. The output messages identify the hashsums
33 # according to the file's track number.
34
0013347 35 # ENTRIES:
36 # OPHASHNR

0013347 38 OPHASHNR
39 # TTY INPUT MESSAGES
40 # OP:HASHNR:BOOT!
41 # OP:HASHNR:SEG segb segf!
42 # R6 = BOOT/SEG
43 # R7 = segb
44 # R8 = segf

```

COMMON NONRESIDENT UTILITIES

PR-1C95A-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 208

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

NONRESIDENT GENERIC AND BOOTSTRAP HASHSUMS

CNRUTL W77D

```

0013347 01 BEGIN ( )
0013347 02 CALL FRSTCHK
0013347 06 002310 137020 014561 0014561 -001- 03 BSA FRSTCHK
0013351 04 IF CF = 0 THEN RETURN
0013351 06 002312 154002 ----- 0013353 -001- 05 BC IFS2702
0013352 06 002313 056400 ----- -002- 06 BTSA
0013353 -001- 07 IFS2702
08 # DETERMINE LEGALITY OF MESSAGE AND SET OPTION FLAGS
09 SPELL R6,(B,O,O,T),OP=CI
0013353 06 002314 103545 001016 TTYTBL -001- 10 CI R6,BX00T
0013355 06 002316 054170 ----- 0013545 11 BC OPHASHNRBOOT
12 SPELL R6,(S,E,G),OP=CI
0013356 06 002317 003545 001246 TTYTBL -001- 13 CI R6,SXEG
0013360 14 IF CF = 0 THEN RETURN TTY_NG # NEITHER BOOT NOR SEG SPECIFIED
0013360 06 002321 054002 ----- 0013362 -001- 15 BC IFS2710
0013361 06 002322 056467 ----- TTYTBL -002- 16 BTSA TTY_NG
0013362 -001- 17 IFS2710

19 # OP:HASHNR:SEG TYPED
0013362 06 002323 106007 ----- 20 LR R0,R7
0013363 21 CALL BCDXBIN
0013363 06 002324 073030 ----- -001- 22 BSAI BXCXBIN # SUBROUTINE BCDXBIN IS IN PROGRAM CSYSUB
0013364 06 002325 106240 ----- 23 LR R10,R0
0013365 06 002326 006041 ----- 24 LR R2,R1 # IF NON-ZERO, BAD BCD DIGIT WAS TYPED
25 OWPROG OW 0(2327) # 13056
-001- 26 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002327 *****

0013366 06 002327 006067 ----- 29 LR R3,R7 # SAVE ORIGINAL VALUE
0013367 06 002330 037000 015030 0015030 -001- 30 OWPROG BGNP 0(3771) # 13056
-001- 31 BL XXX2715
-001- 32 NOTE OWPROG 'CSECT'
-001- 33 NOTE ***** PATCH AREA BEGINS AT 003771 *****

0015030 -001- 36 XXX2715 PATCHAREA
0015030 06 003771 130165 ----- 37 ICF NOBGN,S(NOBGN)
0015031 38 IF CF = 1 THEN RGBEGIN
0015031 06 003772 055003 ----- 0015034 -001- 39 BNC IFS2717
0015032 06 003773 014443 ----- 40 OR R2,R3 # FORCE FAILURE UNLESS NO DIGITS TYPED
0015033 06 003774 003241 ----- 41 LN R10,1 # DEFAULT TO SEG 1
0015034 42 RGEND
0015034 -001- 43 IFS2717
0015034 44 ENDP # 13056
0015034 06 003775 137000 013371 0013371 -001- 45 BL XXX2719
-001- 46 NOTE ***** LAST PATCH ADDRESS USED IS 003776 *****
-001- 47 NOTE ***** NUMBER OF PATCH WORDS USED IS 6 (DECIMAL) *****

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 209

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

NONRESIDENT GENERIC AND BOOTSTRAP HASHSUMS

CNRUTL W77D

```

0013371          -001- 01 XXX2719 OWCONTINUE
0013371          02      EOW # 13056
-001- 03      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002331 *****
                *

0013371 06 002332 106010 -----          07      LR      R0,R8
0013372          08      CALL   BCDXBIN
0013372 06 002333 073030 -----          -001- 09      BSAI   BXCDBIN # SUBROUTINE BCDXBIN IS IN PROGRAM CSYSUB
0013373 06 002334 106260 -----          10      LR      R11,R0
                11      OWPROG OW   O(2335) # 13056
-001- 12      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002335 *****

0013374 06 002335 030166 -----          15      ICF   NOLAST,S(NOLAST)
0013375          16      IF    CF = 1 THEN LR R11,R10 # ASSUME ONE SEG REQUESTED
0013375 06 002336 055002 ----- 0013377 -001- 17      BNC   IFS2726
0013376 06 002337 006272 -----          -001- 18      LR    R11,R10 # ASSUME ONE SEG REQUESTED
0013377          -001- 19      IFS2726
0013377          20      EOW # 13056
-001- 21      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002337 *****
                *

0013377 06 002340 114441 -----          25      OR    R2,R1
0013400          26      IF    CF = 0 THEN RETURN TTY_NG # BAD DIGIT IN SEG NO.
0013400 06 002341 054002 ----- 0013402 -001- 27      BC    IFS2729
0013401 06 002342 056467 -----          -002- 28      BTSAN TTY_NG
0013402          -001- 29      IFS2729
0013402 06 002343 117560 060140          30      CIRM  NOBGN,1*ES(NOBN)+1*ES(NOLAST),0,M(NOBN)+M(NOLAST)
0013404          31      IF    CF = 1 THEN LI R11,NUM_SEGS # LAST SEG DEFAULT
0013404 06 002345 055003 ----- 0013407 -001- 32      BNC   IFS2731
0013405 06 002346 003661 000123 SEG000 -001- 33      LI    R11,NUM_SEGS # LAST SEG DEFAULT
0013407          -001- 34      IFS2731
0013407          35      IF    R10 = 1 THEN RGBEGIN # PERMIT WALK-UP FROM SEG 1 TO ANY NO.
0013407 06 002350 103645 000001 -002- 36      CI    R10,1
0013411 06 002352 054006 ----- 0013417 -001- 37      BC    IFS2732
                38      OWPROG OW   O(2353) # 13056
-001- 39      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002353 *****
                *****

                43      DINSERT NOTE ' IF R11 >= NUM_SEGS+1 THEN RETURN TTY_NG
                44      DDELETE NOTE 5
0013412 06 002353 003401 000123 SEG000          45      LI    R0,NUM_SEGS
0013414 06 002355 005013 -----          46      SR    R0,R11
0013415 06 002356 054002 ----- 0013417          47      BC    IFS2356
W0013416 06 002357 056467 -----          48      BTSAN TTY_NG
0013417          49      IFS2356

```

COMMON NONRESIDENT UTILITIES

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OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

NONRESIDENT GENERIC AND BOOTSTRAP HASHSUMS

CNRUTL W77D

```

0013417 '
-001- 01 EOW # 13056
          02 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002357
          *****

0013417
0013417 -001- 06 RGEND
          07 IFS2732

          09 # ASSURE FIRST SEGMENT NO. LESS THAN MAX.
          10 OWPROG OW 0(2360) # 13056
-001- 11 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002360 *****

          14 INSERT NOTE ' IF R10 >= NUM_SEGS+1 THEN RETURN TTY_NG
          15 DELETE NOTE 5
          16 LI RO,NUM_SEGS
          17 SR RO,R10
          18 BC IFS2365_TC
          19 BTSAN TTY_NG
          20 IFS2365_TC
          21 EOW # 13056
-001- 22 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002364 *****
          *

0013424 06 002365 106232 ----- 26 LR R9,R10
0013425 06 002366 003622 177740 27 NI R9,-32SEGMSK # FIND FIRST SEG TO READ
0013427 28 IF R9 = 0 THEN LN R9,1
0013427 06 002370 014231 ----- -002- 29 TZ R9
0013430 06 002371 055002 ----- 0013432. -001- 30 BNC IFS2743
0013431 06 002372 003221 ----- -001- 31 LN R9,1 #
0013432 -001- 32 IFS2743

          34 # FIRST AND FINAL SEGMENT NOS. ARE LOADED
          35 # ASSURE BEGINNING IS NOT GREATER THAN FINAL SEG.
          36 IF R10 > R11 THEN RETURN TTY_NG
0013432 -003- 37 LR RO,R11
0013433 06 002373 106013 ----- -003- 38 SR RO,R10
0013434 06 002374 005012 ----- -001- 39 BC IFS2745
0013434 06 002375 054002 ----- 0013436 -001- 39 BC IFS2745
0013435 06 002376 056467 ----- TTYTBL -002- 40 BTSAN TTY_NG
0013436 -001- 41 IFS2745
0013436 42 RTB TTYIN
0013436 06 002377 103601 002262 -001- 43 LI RTBPM,*-RTBPMORG+4
0013440 06 002401 037000 014722 0014722 -001- 44 BL ADVPHTTYIN

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 211

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

NONRESIDENT GENERIC AND BOOTSTRAP HASHSUMS

CNRUTL W77D

```

01 # R9 = FIRST SEGMENT TO READ (CURRENT SEGMENT)
02 # R10 = FIRST SEGMENT TO OUTPUT HASHSUM VALUE
03 # R11 = FINAL SEGMENT TO OUTPUT HASHSUM VALUE
04
0013442 05 # READ IN FIRST NON-RESIDENT PROGRAM TAPE BLOCK
06 LAL RO,SEGAB-1,RA1
07 LR RO,R9
08 RLN RO,1
09 LX R1,RO(RA1) # GET LOGICAL TAPE ADDRESS (BLOCK NUMBER)
10 # SET UP TO OPEN AND READ TAPE
11 OPEN OVCLNT,(P,A,G,E,M,0,N)
12 BSA OPENTCB
13 VFD 5,OVHCLNT 1,0 1,0 2,0 3,((7+1)/2)+1 1,0 3,((7+1)/2)-1
14 VFD 8,ASC_P 8,ASC_A
15 VFD 8,ASC_G 8,ASC_E
16 VFD 8,ASC_M 8,ASC_O
17 VFD 8,ASC_N 8,ASC_
18 BNC OPHASHNRFAIL
19 RTB TAPE
0013457 20 BSA ADVPMTAPE

0013461 23 ZR R6 # ZERO HASHSUM ACCUM
24 OWPROG OW 0(2423) # 13056
-001- 25 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002423 *****

0013462 28 NEXTSEGNR
0013462 29 LRM RO,R9,32SEGMSK
0013464 30 EOW # 13056
-001- 31 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002424 *****
*

0013464 35 IF RO = 0 THEN ZR R6 # HASHSUM ACCUM
0013464 36 TZ RO
0013465 37 BNC IFS2757
0013466 38 ZR R6 # HASHSUM ACCUM
0013467 39 IFS2757
40 # TAPE IS POSITIONED TO NEXT TAPE BLOCK
41 OWPROG OW 0(2430) # 13056
-001- 42 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002430 *****

0013467 45 NEXTBLKNR
0013467 46 EOW # 13056
-001- 47 NOTE ***** NO PATCH AT THIS ADDRESS *****

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

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OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

NONRESIDENT GENERIC AND BOOTSTRAP HASHSUMS

CNRUTL W77D

```

0013467 06 002430 173047 ----- 01
0013470 06 002431 014400 011161 0011161 -001- 02
0013472 06 002432 137020 014676 0014676 -001- 03
0013472 06 002433 137020 014676 0014676 -001- 04
0013472 06 002433 137020 014676 0014676 -001- 05

0013474 06 002435 106026 ----- 08
0013475 06 002436 037020 014365 0014365 -001- 09
0013475 06 002436 037020 014365 0014365 -001- 10
0013477 06 002440 155044 ----- 0013543 11
0013500 06 002441 006141 ----- 12

14 # THE BLOCK IS FINISHED, CHECK FOR SEGMENT OVERFLOW ONTO NEXT BLOCK
15 LL RO,I_OBUF
16 TBN RO,S(EOF)
17 OWPROG OW O(2445) # 13056
-001- 18 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002445 *****

0013504 06 002445 055763 ----- 0013467 21
0013505 06 002445 055763 ----- 0013467 22
-001- 23 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002445 *****
*

28 # R6 = HASHSUM FOR THIS SEGMENT (R9 = CURRENT SEGMENT)
29 IF R9 = R11 THEN B PRINTSEGHASH
0013505 06 002446 020233 ----- -002- 30 CR R9,R11
0013506 06 002447 054013 ----- 0013521 -001- 31 BC PRINTSEGHASH
0013507 06 002450 006011 ----- -003- 32 IF R9 >= R10 THEN RGBEGIN # PRINTOUT IS ARMED
0013510 06 002451 005012 ----- -003- 33 LR RO,R9
0013511 06 002452 055020 ----- 0013531 -001- 34 SR RO,R10
0013512 06 002453 017560 060140 35 BNC IFS2773
0013514 06 002455 055005 ----- 0013521 -001- 36 CIRM NOBGN,1*ES(NOBN)+1*ES(NOLAST),O,M(NOBN)+M(NOLAST)
0013515 06 002456 015411 ----- 37 IF CF = 1 THEN RGBEGIN
0013516 06 002457 003402 000037 38 BNC IFS2776
39 COM RO,R9
40 NI RO,32SEGMSK
41 OWPROG OW O(2461) # 13056
-001- 42 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002461 *****
*****

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 213

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

NONRESIDENT GENERIC AND BOOTSTRAP HASHSUMS

CNRUTL W77D

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0013520 06 002461 055011 ----- 0013531      01      BNC      ADVSEGNR
0013521                                02      EOW
                                -001- 03      NOTE      ***** THE LAST ADDRESS OVERWRITTEN IS 002461
                                                *****

0013521                                07      RGEND
0013521                                -001- 08 IFS2776

                                10 # PRINT SEGMENT HASHSUM
                                11 PRINTSEGHASH
0013521                                12      HA
0013522 06 002462 171420 -----              13      LR      R7,R6
0013522 06 002463 006166 -----              14      LR      R6,R9
0013523 06 002464 006151 -----              15      PRINT  FMT=(WRD,WRD,DEC,DEC)
0013524

-001- 17 # MESSAGE PROTOTYPE
-001- 18 #      mm      WRD WRD dddd dddd
0013524 06 002465 073053 -----              -002- 19      BSAI  PXMRY      # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
0013525 06 002466 000200 -----              -002- 20      VFD   1,0 2,0 1,0 3,0 1,0 1,1 1,0 2,0 1,0 3,0
0013526 06 002467 021104 -----              -002- 21      VFD   4,TTYO_4,TTYO_4,TTYO_DEC 4,TTYO_DEC
0013527 06 002470 021042 -----              -002- 22      VFD   4,TTYO_4,TTYO_4,TTYO_4,TTYO_4,TTYO_4
                                -001- 23      NOTE  THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
                                                CONTAINED IN GENERAL REGISTERS R4,R5,R6,R7,

0013530 06 002471 171400 -----              25      GA
0013531                                26      RGEND
0013531                                -001- 27 IFS2773

0013531                                29 ADVSEGNR
0013531 06 002472 104621 -----              30      AN      R9,1      # INCREMENT SEGMENT NO.
0013532                                31      IF      R9 <= R11 THEN B NEXTSEGNR
0013532 06 002473 006013 -----              -003- 32      LR      R0,R11
0013533 06 002474 005011 -----              -003- 33      SR      R0,R9
0013534 06 002475 054726 ----- 0013462      -001- 34      BC      NEXTSEGNR
                                35 OWPROG OW 0(2476)      # 13056
                                -001- 36      NOTE  ***** THE FIRST ADDRESS OVERWRITTEN IS 002476 *****

0013535 06 002476 017560 060100              39      CIRM  NOBGN,0*(S(NOBGN))+1*(E(S(NOLAST))),0,M(NOBGN)IM(NOLAST)
0013537                                40      EOW      # 13056
                                -001- 41      NOTE  ***** THE LAST ADDRESS OVERWRITTEN IS 002477 *****
                                                *

0013537 06 002500 050000 014636 0014636      45      BCL   NOTTYACK
0013541 06 002502 037000 014625 0014625      46      BL    REQPASS

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 214

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

NONRESIDENT GENERIC AND BOOTSTRAP HASHSUMS

CNRUTL W77D

0013543

01 OPHASHNRFAIL

0013543 06 002504 137000 014630 0014630

02 BL REQFAIL

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 215

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

NONRESIDENT GENERIC AND BOOTSTRAP HASHSUMS

CNRUTL W770

```

0013545      01 # HASHSUM NONRESIDENT CALCULATION OVER BOOTSTRAP FILE DATA
0013545      02 OPHASHNRBOOT
0013545 06 002506 103220 ----- 03 # OP:HASHNR:BOOT TYPED
0013546      04      ZR      R9
0013546      05      RTB     TTYIN
0013546 06 002507 003601 002372 -001- 06      LI      RTBPM,*-RTBPMORG+4
0013550 06 002511 037000 014722 0014722 -001- 07      BL      ADVPMTTYIN

0013552      10 # R9 = SUBFILE COUNTER
0013552      11 NEWBOOTFILE
0013552      12      IF      R9 = 0 THEN RGBEGIN
0013552 06 002513 114231 ----- 0013565 -002- 13      TZ      R9
0013553 06 002514 055012 ----- -001- 14      BNC     IFS2795
0013554 06 002515 003020 ----- 15      ZR      R1
0013555 06 002516 037020 126205 CTAPH -002- 16      OPEN   OVWCLNT,(B,0,0,T,S,T,P) # OPEN PRIMARY FILE
0013557 06 002520 014123 ----- -001- 17      BSA     OPENTCB
0013560 06 002521 041317 ----- -001- 18      VFD     5,OVWCLNT 1,0 1,0 2,0 3,((7+1)/2)+1 1,0 3,((7+1)/2)-1
0013561 06 002522 147724 ----- -001- 19      VFD     8,ASC_B 8,ASC_O
0013562 06 002523 051724 ----- -001- 20      VFD     8,ASC_O 8,ASC_T
0013563 06 002524 050000 ----- -001- 21      VFD     8,ASC_S 8,ASC_T
0013564 06 002525 155757 ----- 0013543 -001- 22      VFD     8,ASC_P 8,ASC_
0013565      23      BNC     OPHASHNRFAIL
0013565      24      RGEND
0013565      -001- 25 IFS2795
0013565      26      IF      R9 = 2 THEN RGBEGIN
0013565 06 002526 103625 000002 -002- 27      CI      R9,2
0013567 06 002530 055011 ----- 0013600 -001- 28      BNC     IFS2800
0013570 06 002531 003020 ----- 29      ZR      R1
0013571 06 002532 037020 126205 CTAPH -002- 30      OPEN   OVWCLNT,(B,0,0,T,2) # OPEN SECONDARY FILE
0013573 06 002534 014102 ----- -001- 31      BSA     OPENTCB
0013574 06 002535 041317 ----- -001- 32      VFD     5,OVWCLNT 1,0 1,0 2,0 3,((5+1)/2)+1 1,0 3,((5+1)/2)-1
0013575 06 002536 147724 ----- -001- 33      VFD     8,ASC_B 8,ASC_O
0013576 06 002537 131000 ----- -001- 34      VFD     8,ASC_O 8,ASC_T
0013577 06 002540 155744 ----- 0013543 -001- 35      VFD     8,ASC_2 8,ASC_
0013600      36      BNC     OPHASHNRFAIL
0013600      37      RGEND
0013600      -001- 38 IFS2800
0013600      39 OWPROG OW 0(2541) # 13056
0013600      -001- 40      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002541 *****

0013600 06 002541 137000 015001 0015001 -001- 43 OWPROG BGNP 0(3742) # 13056
0013600      -001- 44      BL      XXX2807
0013600      -001- 45      NOTE   OWPROG 'CSECT'
0013600      -001- 46      NOTE   ***** PATCH AREA BEGINS AT 003742 *****

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

D:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 216

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

NONRESIDENT GENERIC AND BOOTSTRAP HASHSUMS

CNRUTL W77D

```

0015001                                -001- 01 XXX2807 PATCHAREA
0015001 06 003742 103140 -----          02      ZR      R6          # ZERO HASHSUM ACCUM.
0015002                                -001- 03      RTB     TAPE
0015002 06 003743 037020 014676 0014676 -001- 04      BSA     ADVPMTAPE

0015004                                07      ENDP     # 13056
0015004 06 003745 137000 013602 0013602 -001- 08      BL      XXX2810
-001- 09      NOTE ***** LAST PATCH ADDRESS USED IS 003746 *****
-001- 10      NOTE ***** NUMBER OF PATCH WORDS USED IS 5 (DECIMAL) *****

0013602                                -001- 13 XXX2810 0WCONTINUE
0013602                                14      EOW     # 13056
-001- 15      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002542 *****
*

0013602                                19 NEXTBLKBOOT
20 # TAPE IS POSITIONED TO NEXT TAPE BLOCK
21      RD1BLK  OVWCLNT,DUMUNLOD
0013602 06 002543 173047 -----          -002- 22      BSAI    RXEQR      # SUBROUTINE REQR IS IN PROGRAM CTAPH
0013603 06 002544 014400 011161 0011161 -001- 23      ADDR   DUMUNLOD,OVWCLNT+E(7)+RD1BLK+E(3)
0013605                                24      RTB     TAPE
0013605 06 002546 137020 014676 0014676 -001- 25      BSA     ADVPMTAPE

0013607 06 002550 106026 -----          28      LR      R1,R6
0013610                                29      CALL   CALCHASHNR
0013610 06 002551 037020 014365 0014365 -001- 30      BSA     CALCHASHNR
0013612 06 002553 155731 -----          31      BNC    OPHASHNRFAIL
0013613 06 002554 006141 -----          32      LR      R6,R1

0013614 06 002555 030400 045266 LAYOUT    34 # THE BLOCK IS FINISHED, CHECK FOR SUB-FILE OVERFLOW TO NEXT BLOCK
0013616 06 002557 024015 -----          35      LL     RO,I_OBUF
0013617 06 002560 055763 -----          36      TBN   RO,S(EOF)
0013620 06 002561 004621 -----          37      BNC   NEXTBLKBOOT
0013621 06 002562 024220 -----          38      AN    R9,1          # INCREMENT SUBFILE COUNTER
0013622 06 002563 054760 -----          39      TBN   R9,0
0013622 06 002563 054760 -----          40      BC    NEXTBLKBOOT      # ONLY HALF DONE

0013623 06 002564 071420 -----          42 # R6 = HASHSUM FOR THIS BOOTSTRAP FILE (R9(1) = WHICH FILE)
0013624 06 002565 006166 -----          43 # PRINT BOOTSTRAP HASHSUM
0013625 06 002566 010621 -----          44      HA
0013626 06 002567 006151 -----          45      LR    R7,R6
0013627                                46      RRN   R9,1          # CONSTRUCT TRACK NO.
0013627                                47      LR    R6,R9
0013627                                48      PRINT FMT=(WRD,WRD,DEC,DEC)

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 217

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

NONRESIDENT GENERIC AND BOOTSTRAP HASHSUMS

CNRUTL W77D

```

-001- 01 # MESSAGE PROTOTYPE
-001- 02 # mm WRD WRD dddd dddd
0013627 06 002570 073053 ----- -002- 03 BSAI PXMRY # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
0013630 06 002571 000200 ----- -002- 04 VFD 1,0 2,0 1,0 3,0 1,0 1,1 1,0 2,0 1,0 3,0
0013631 06 002572 021104 ----- -002- 05 VFD 4,TTYO_4,TTYO_4,TTYO_DEC 4,TTYO_DEC
0013632 06 002573 021042 ----- -002- 06 VFD 4,TTYO_4,TTYO_4,TTYO_4,TTYO_4,TTYO
-001- 07 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS R4,R5,R6,R7,

0013633 06 002574 171400 ----- 09 GA

11 CLOSE OVMCLNT
0013634 06 002575 073047 ----- -002- 12 BSAI RXEQR # SUBROUTINE REQR IS IN PROGRAM CTAPH
0013635 06 002576 015300 137020 -001- 13 VFD 5,OVMCLNT 4,CLOSE 1,1 1,0 5,0
14 OWPROG OW 0(2577) #3E790307
-001- 15 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002577 *****

0013636
0013636 06 002577 137020 014670 0014670 -001- 18 RTB
19 BSA ADVPM

0013640
-001- 22 EOW #3E790307
23 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002600 *****
*

0013640 06 002601 124222 ----- 27 TBN R9,2
0013641 06 002602 055711 ----- 0013552 28 BNC NEWBOOTFILE

0013642 06 002603 037000 014625 0014625. 30 BL REQPASS

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 218

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

UPDATE AND VERIFY HASHSUM FUNCTIONS

CNRUTL W77D

```

01 # DESCRIPTION:
02 # This section updates and verifies the hashsums stored in the CHECKSUM file
03 # on the tape cartridge for resident generic and translation data. One hashsum
04 # value is used for each 4K (4096) word block of resident main store (MAS).
05 # Any modification to the contents of the MAS will cause the calculated hashsum
06 # to disagree with the one stored in the CHECKSUM file. These values are used
07 # to detect erroneous changes or mutilations to the MAS data. Such a mismatch
08 # would cause a reload of that 4K block by the bootstrap program should
09 # the bootstrap program be invoked. To avoid triggering the hashsum detection,
10 # planned changes such as overwrites and recent changes (to translation data)
11 # must update the affected hashsum words stored on tape. This section will
12 # update and verify the hashsums which cover either the resident generic or
13 # translation data.
0013644 14
15 # For either the update or verify operation, the stored hashsum values are
16 # read in from the CHECKSUM file on tape and the actual values are computed
17 # from the current on-line MAS data. For the verify, the calculated values
18 # are compared against the values from tape and mismatches are outputted by
19 # TTY messages. Although all hashsum mismatches are printed, only the first
20 # mismatch in a given 32K module will show a valid MAS hashsum since the
21 # erroneous hashsum value is used on subsequent 4K blocks. On a perfect match
22 # only a completion (COMPL) message will be given. For the update, the tape
23 # values are blindly overwritten and copied back into the CHECKSUM file of
24 # both system tapes.
0013644 25
26 # ENTRIES:
27 # UPDHASH
28 # VERHASH

0013644 30 UPDHASH
0013644 31 VERHASH
32 # TTY INPUT MESSAGES
33 # UPD:HASH:GENERIC
34 # UPD:HASH:TRNSLN
35 # VER:HASH:GENERIC
36 # VER:HASH:TRNSLN
37 # R4 = UPD/VER
38 # R6 = GENERIC/TRNSLN

0013644 40 BEGIN (
0013644 41 CALL FRSTCHK
0013644 06 002605 137020 014561 0014561 -001- 42 BSA FRSTCHK
0013646 43 IF CF = 0 THEN RETURN
0013646 06 002607 154002 ----- 0013650 -001- 44 BC IFS2836
0013647 06 002610 056400 ----- -002- 45 BTS
0013650 -001- 46 IFS2836
47 # DETERMINE LEGALITY OF MESSAGE AND SET OPTION FLAGS
48 SPELL R7,(G,E,N,E,R,I,C),OP=CI
0013650 06 002611 103565 001445 TTYTBL -001- 49 CI R7,GXENERIC

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

D:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 219

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

UPDATE AND VERIFY HASHSUM FUNCTIONS

CNRUTL W77D

```

0013652
0013652 06 002613 055003 ----- 0013655 -001- 01      IF      CF = 1 THEN RGBEGIN
0013653 06 002614 022164 -----          02      BNC      IFS2841
0013654 06 002615 053007 ----- 0013663 03      ZBN      TRN_OP,S (TRN_OP)
0013655          04      B        UPVRHASHCONT
0013655          05      RGEND
0013655          -001- 06 IFS2841
          07      SPELL   R7,(T,R,N,S,L,N),OP=CI
0013655 06 002616 103565 00026D TTYTBL -001- 08      CI      R7,TRNSLN
0013657          09      IF      CF = 1 THEN RGBEGIN
0013657 06 002620 055003 ----- 0013662 -001- 10      BNC      IFS2846
0013660 06 002621 026164 -----          11      SBN      TRN_OP,S (TRN_OP)
0013661 06 002622 053002 ----- 0013663 12      B        UPVRHASHCONT
0013662          13      RGEND
0013662          -001- 14 IFS2846
0013662          15      RETURN  TTY_NG          # NEITHER GENERIC NOR TRNSLN SPECIFIED
0013662 06 002623 156467 ----- TTYTBL -001- 16      BTSAN   TTY_NG
          18      UPVRHASHCONT
0013663          19      RTB      TTYIN
0013663 06 002624 103601 002507 -001- 20      LI      RTBPM,*-RTBPMORG+4
0013665 06 002626 037000 014722 0014722 -001- 21      BL      ADVPMTTYIN

          24 # R4 = UPD/VER
          25 # R6 = HASHSUM VALUE
          26 # R9 = LOOP INDEX
          27 # R10,R11 = BEGINNING (CURRENT) ADDRESS
          28 # RAD = ADDRESS WITHIN I_OBUF
0013667 06 002630 103020 -----          29      ZR      R1
          30      OPEN   OVWCLNT,(C,H,E,C,K,S,U,M)
0013670 06 002631 037020 126205 CTAPH -002- 31      BSA      OPENTCB
0013672 06 002633 014123 -----          -001- 32      VFD     5,OVWCLNT 1,0 1,0 2,0 3,((8+1)/2)+1 1,0 3,((8+1)/2)-1
0013673 06 002634 141510 -----          -00i- 33      VFD     8,ASC_C 8,ASC_H
0013674 06 002635 142703 -----          -001- 34      VFD     8,ASC_E 8,ASC_C
0013675 06 002636 045523 -----          -001- 35      VFD     8,ASC_K 8,ASC_S
0013676 06 002637 052515 -----          -001- 36      VFD     8,ASC_U 8,ASC_M
0013677 06 002640 155146 ----- 0014045 37      BNC      UPVRHASHFAIL
0013700          38      RTB      TAPE
0013700 06 002641 037020 014676 0014676 -001- 39      BSA      ADVPMTAPE

          42      RD1BLK  OVWCLNT,DUMUNLOD
0013702 06 002643 173047 -----          -002- 43      BSAI   RXEQR          # SUBROUTINE REQR IS IN PROGRAM CTAPH
0013703 06 002644 014400 011161 0011161 -001- 44      ADDR   DUMUNLOD,OVWCLNT*(7)+RD1BLK*(3)
0013705          45      RTB      TAPE
0013705 06 002646 137020 014676 0014676 -001- 46      BSA      ADVPMTAPE

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 220

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

UPDATE AND VERIFY HASHSUM FUNCTIONS

CNRUTL W77D

```

0013707 06 002650 131400 000000          01 # ASSUME GENERIC REQUESTED
                                           02 LAL      R0,0,RA1          # RA1 = FIRST ADDRESS FOR HASHSUM
                                           03 OWPROG OW 0(2652)          # 12364
-001- 04 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002652 *****

0013711 06 002652 031220 045275 CIPL      07 LAL      R9,I_OBUF+I_OBUFD+2+N(PROGBLKS),RA0
0013713                                08 EOW      # 12364
-001- 09 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002653 *****
                                           *

0013713                                13 IF      TRN_OP THEN RGBEGIN # TRNSLN REQUESTED
0013713 06 002654 024164 -----          -004- 14 TBN      TRN_OP,S(TRN_OP)
0013714 06 002655 055006 -----          -002- 15 BNC      IFS2861
0013715 06 002656 031402 020000 TDATA      16 LAL      R0,TDATA,RA1      # RA1 = FIRST ADDRESS FOR HASHSUM
0013717 06 002660 043011 -----          17 LAX      R0,R9(RA0)
0013720 06 002661 043011 -----          18 LAX      R0,R9(RA0)
0013721 06 002662 041222 -----          19 LA       R9,2(RA0)
0013722                                20 RGEN     #
0013722                                -001- 21 IFS2861

                                           23 # R9 = NUMBER OF HASHSUM ENTRIES
                                           24 # RAO = ADDRESS OF FIRST DOUBLE HASHSUM ENTRY MINUS ONE
0013722 06 002663 104237 -----          25 SN      R9,1              # ADJUST FOR BX LOOP
0013723 06 002664 006256 -----          26 LR      R10,RA1
0013724 06 002665 006277 -----          27 LR      R11,RA1+1
0013725 06 002666 003140 -----          28 ZR      R6              # ZERO HASHSUM VALUE (INITIALIZE)

0013726                                30 NEXTENTRYP
0013726 06 002667 141041 -----          31 LA      R2,1(RA0)          # R2 = HASHSUM LENGTH AND FLAGS
0013727 06 002670 041061 -----          32 LA      R3,1(RA0)          # R3 = HASHSUM VALUE CURRENTLY IN CHECKSUM
                                           FILE

0013730                                34 MORERES
0013730 06 002671 116762 017777 CIPL      35 LRM     R15,R2,M(HASHLEN)
0013732                                36 IF      R15 = 0 THEN B ENTRYDONE
0013732 06 002673 014377 -----          -002- 37 TZ      R15
0013733 06 002674 054031 -----          -001- 38 BC      ENTRYDONE
0013734                                39 IF      R15 >= HASHLENMAX+1 THEN LI R15,HASHLENMAX
0013734 06 002675 006017 -----          -003- 40 LR      R0,R15
0013735 06 002676 003400 177677          -003- 41 SI      R0,HASHLENMAX+1
0013737 06 002700 055003 -----          -001- 42 BNC     IFS2867
0013740 06 002701 003761 000100          -001- 43 LI      R15,HASHLENMAX #
0013742                                -001- 44 IFS2867
0013742 06 002703 105057 -----          45 SR      R2,R15          # REDUCE HASHSUM LENGTH
0013743 06 002704 006017 -----          46 LR      R0,R15          # LENGTH OF THIS LOOP
0013744 06 002705 006352 -----          47 LR      RA1,R10         # BASE ADDRESS
0013745 06 002706 006373 -----          48 LR      RA1+1,R11
0013746                                49 ARL     R10,R0          # ADVANCE BASE ADDRESS

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 221

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

UPDATE AND VERIFY HASHSUM FUNCTIONS

CNRUTL W77D

```

0013746 06 002707 001660 ----- -001- 01      AR      R10+1,RO
0013747 06 002710 055002 ----- 0013751 -001- 02      BNC     IFS2870
0013750 06 002711 004641 ----- -001- 03      AN      R10,1
0013751 06 002712 124057 ----- CIPL      04      TBN     R2,S(TSFLG)
0013752                                05      IF      CF = 0 THEN RGBEGIN
0013752 06 002713 054011 ----- 0013763 -001- 06      BC      IFS2871
0013753 06 002714 006026 -----          07      LR      R1,R6
0013754 06 002715 024164 -----          08      TBN     TRN_OP,S(TRN_OP)
0013755                                09      CALL   HASHSUMN # COMPUTE HASHSUM
0013755 06 002716 037021 016234 MASACS -001- 10      BSA     HASHSUMN
0013757 06 002720 155066 ----- 0014045 11      BNC     UPVRHASHFAIL
0013760 06 002721 006141 -----          12      LR      R6,R1
0013761                                13      RTB
0013761 06 002722 037020 014670 0014670 -001- 14      BSA     ADVPM

0013763                                17      RGEND
0013763                                -001- 18 IFS2871
0013763 06 002724 153745 ----- 0013730 19      B      MORERES

0013764                                21 ENTRYDONE
0013764                                22 # R3 = PRESTORED HASHSUM ENTRY
0013764                                23 # R6 = CALCULATED HASHSUM ENTRY
0013764 06 002725 124057 ----- CIPL      24      TBN     R2,S(TSFLG)
0013765                                25      IF      CF = 1 THEN RGBEGIN
0013765 06 002726 055003 ----- 0013770 -001- 26      BNC     IFS2875
0013766                                27      RTB
0013766 06 002727 037020 014670 0014670 -001- 29      BSA     ADVPM
# REAL TIME BREAK IF LAST ENTRY WAS TEMPORARY STORE

0013770                                32      RGEND
0013770                                -001- 33 IFS2875
0013770                                34 OMPROG OW 0(2731) # 12364
0013770                                -001- 35 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 002731 *****

0013770 06 002731 144140 -----          38      ST      R6,0(RAO) # UPDATE HASHSUM VALUE IN THIS ENTRY
0013771                                39      EOW    # 12364
0013771                                -001- 40 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 002731 *****
*

0013771 06 002732 003505 000050 TTYTBL -001- 45      SPELL   R4,(V,E,R),OP=CI
0013773                                46      CI      R4,VXER
0013773                                47      IF      CF = 1 THEN RGBEGIN
0013773 06 002734 055022 ----- 0014015 -001- 48      BNC     IFS2885
0013774                                49      IF      R3 = R6 THEN RGBEGIN

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 222

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

UPDATE AND VERIFY HASHSUM FUNCTIONS

CNRUTL W77D

```

0013774 06 002735 020066 ----- -002- 01      CR      R3,R6
0013775 06 002736 054020 ----- 0014015 -001- 02      BC      IFS2886
                                03 # PRINT ERROR MESSAGE
                                04      HA
0013776 06 002737 071420 -----          05      LR      R9,R6      # HASHSUM FROM MAS
0013777 06 002740 006226 -----          06      LN      R1,1
0014000 06 002741 003021 -----          07      SRL     R10,R1      # DECREMENT LAST ADDRESS
0014001 -----          08      SR      R10+1,R1
0014001 06 002742 005261 ----- -001- 08      BC      IFS2886
0014002 06 002743 054002 ----- 0014004 -001- 09      SN      R10,1
0014003 06 002744 004257 ----- -001- 10      LR      R6,R10
0014004 06 002745 106152 -----          11      LR      R7,R11
0014005 06 002746 006173 -----          12      LR      R8,R3      # HASHSUM FROM TAPE
0014006 06 002747 006203 -----          13      PRINT   FMT=(WRD,WRD,H_C,L_X,DEC5,DEC5)
0014007 -----          14

-001- 16 # MESSAGE PROTOTYPE
-001- 17 #      mm      WRD WRD xxxxx nnnnn nnnnn
0014007 06 002750 073053 ----- -002- 18      BSAI   PXMRY      # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
0014010 06 002751 000200 ----- -002- 19      VFD    1,0 2,0 1,0 3,0 1,0 1,1 1,0 2,0 1,0 3,0
0014011 06 002752 114545 ----- -002- 20      VFD    4,TTYO_DEC5 4,TTYO_DEC5 4,TTYO_L_X 4,TTYO_H_C
0014012 06 002753 021042 ----- -002- 21      VFD    4,TTYO 4,TTYO 4,TTYO 4,TTYO
-001- 22      NOTE   THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
                                CONTAINED IN GENERAL REGISTERS R4,R5,R6,R7,R8,R9,
0014013 06 002754 171400 -----          24      GA
0014014 06 002755 006143 -----          25      LR      R6,R3      # USE HASHSUM FROM TAPE FOR SUBSEQUENT CALC.
0014015 -----          26      RGEN
0014015 -001- 27 IFS2886          27      RGEN
0014015 -----          28
0014015 -001- 29 IFS2885          29

0014015 06 002756 116413 077777          31      LRM    R0,R11,32KMSK
0014017 -----          32      IF     R0 = 0 THEN ZR R6      # ZERO ACCUM.
0014017 06 002760 014000 ----- -002- 33      TZ     RD
0014020 06 002761 055002 ----- 0014022 -001- 34      BNC    IFS2895
0014021 06 002762 003140 ----- -001- 35      ZR     R6      # ZERO ACCUM.
0014022 ----- -001- 36 IFS2895
0014022 06 002763 136220 013726 0013726          37      BX     R9,NEXTENTRYLP
                                39      SPELL  R4,(U,P,D),OP=CI
0014024 06 002765 003505 000047 TTYTBL -001- 40      CI     R4,U%PD
0014026 -----          41      IF     CF = 0 THEN B UPVRHASHPASS
0014026 06 002767 055015 ----- 0014043 -001- 42      BNC    UPVRHASHPASS

                                44 # UPDATE FUNCTION WAS REQUESTED
                                45      BACKSP OVMCLNT
0014027 06 002770 073047 ----- -002- 46      BSAI   RXEQR      # SUBROUTINE REAR IS IN PROGRAM CTAPH
0014030 06 002771 016100 137020          47      VFD    5,OVWCLNT 4,BACKSP 1,1 1,0 5,0
0014031 -----          48      RTB   TAPE
0014031 06 002772 137020 014676 0014676 -001- 49      BSA    ADVPMPTAPE

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 223

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

UPDATE AND VERIFY HASHSUM FUNCTIONS

CNRUTL

W77D

0014033	06	002774	173047	-----	-002-	03	WRTAB	OVWCLNT	
0014034	06	002775	014740	137020	-001-	04	BSAI	RXEQR	# SUBROUTINE REQR IS IN PROGRAM CTAPH
0014035						05	VFD	5,OVWCLNT 4,WRTAB 1,1 1,1 5,0	
0014035	06	002776	137020	014676 0014676	-001-	06	RTB	TAPE	
						07	BSA	ADVPHTAPE	
0014037	06	003000	173047	-----	-002-	10	COPY	OVWCLNT	
0014040	06	003001	015500	137020	-001-	11	BSAI	RXEQR	# SUBROUTINE REQR IS IN PROGRAM CTAPH
0014041						12	VFD	5,OVWCLNT 4,COPY 1,1 1,0 5,0	
0014041	06	003002	137020	014676 0014676	-001-	13	RTB	TAPE	
						14	BSA	ADVPHTAPE	
0014043						17	UPVRHASHPASS		
0014043	06	003004	137000	014625 0014625		18	BL	REQPASS	
0014045						19			
0014045						20	UPVRHASHFAIL		
0014045	06	003006	137000	014630 0014630		21	BL	REQFAIL	

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 224

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

SEARCH OVERWRITE FILE--OW PROCEDURE

CNRUTL W770

```

0014047 01 # DESCRIPTION:
0014047 02 # SEARCH THE OWFILE FOR A PARTICULAR OVERWRITE.
0014047 03
0014047 04 # ENTRY POINT:
0014047 05 # SEARCH
0014047 06
0014047 07 # INPUTS
0014047 08 # RD = NUMBER OF THE OVERWRITE TO BE FOUND
0014047 09 # THE OWFILE IS OPEN AND THE TAPE IS POSITIONED AT THE
0014047 10 # BEGINNING OF THE FILE.
0014047 11
0014047 12 # OUTPUTS
0014047 13 # RO = RETURN CODE
0014047 14 # 0--OVERWRITE NOT FOUND
0014047 15 # 1--OVERWRITE FOUND
0014047 16 # I_OBUFD CONTAINS THE TAPE BLOCK IN WHICH THE
0014047 17 # OW RECORD BEGINS AND IOBPTR EQUALS THE
0014047 18 # OFFSET INTO I_OBUFD OF THE BEGINNING OF THAT RECORD.

0014047 22 SEARCH
0014047 06 003010 106260 ----- 23 LR PROCSCR,RO # SAVE OW NUMBER
-001- 24 OWPROG OW 0(3011) # 12450
-001- 25 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 003011 *****

0014050 06 003011 003074 ----- 28 LN IOBPTR,12
0014051 29 EOW # 12450
-001- 30 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 003011 *****
*

0014051 34 SRCHNXTBLK1
0014051 06 003012 173047 ----- 35 RD1BLK OVWCLNT,DUMUNLOD
0014052 06 003013 014400 011161 0011161 -002- 36 BSAI RXEQR # SUBROUTINE REQR IS IN PROGRAM CTAPH
0014054 06 003015 137020 014676 0014676 -001- 37 ADDR DUMUNLOD,OVWCLNT*(7)+RD1BLK*(3)
0014054 06 003015 137020 014676 0014676 -001- 38 RTB TAPE
0014054 06 003015 137020 014676 0014676 -001- 39 BSA ADVPMTAPE

0014056 06 003017 153032 ----- 0014110 42 B CKIOBPTR
0014057 06 003020 131400 045267 CTAPH 43 SRCHSAMBLK
0014061 06 003022 043403 ----- 44 LAL RD,I_OBUF+I_OBUFD,RA1
0014062 06 003023 003405 177777 -002- 45 LAX RD,IOBPTR(RA1)
0014062 06 003023 003405 177777 -002- 46 IF RD = E00WF THEN RTNPROC 0 # OW WAS NOT FOUND
0014064 06 003025 055005 ----- 0014071 -001- 47 CI RD,E00WF
0014065 06 003026 003000 ----- -002- 48 BNC IFS2918
-002- 49 LN RD,0

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 225

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

SEARCH OVERWRITE FILE--OW PROCEDURE

CNRUTL W77D

```

0014066 06 003027 006212 ----- -002- 01          LR      RTBPM,PROCPM
0014067 06 003030 037000 011154 0011154 -002- 02          BL      BRTBPM
0014071                                     -001- 03 IFS2918
                                           04 OWPROG OW      0(3032)          # 12450
                                           -001- 05 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 003032 *****

0014071                                     08
0014071 06 003032 137000 014737 0014737 -001- 09 OWPROG B6NP 0(3700)          # 12450
                                           -001- 10 BL      XXX2923
                                           -001- 11 NOTE  OWPROG 'CSECT'
                                           -001- 12 NOTE ***** PATCH AREA BEGINS AT 003700 *****

0014737                                     -001- 15 XXX2923 PATCHAREA
0014737                                     16          IF      RO = 0 THEN RGBEGIN # REMAINDER OF CURRENT BLOCK UNUSED
0014737 06 003700 114000 ----- -002- 17          TZ      RO
0014740 06 003701 055004 ----- 0014744 -001- 18          BNC     IFS2925
0014741 06 003702 003060 -----          19          ZR      IOBPTR
0014742 06 003703 037000 014051 0014051          20          BL      SRCHNXTBLK1
0014744          21          RGEND
0014744                                     -001- 22 IFS2925
0014744          23 IFS1
0014744          24          ENDP          # 12450
0014744 06 003705 137000 014073 0014073 -001- 25 BL      XXX2928
                                           -001- 26 NOTE ***** LAST PATCH ADDRESS USED IS 003706 *****
                                           -001- 27 NOTE ***** NUMBER OF PATCH WORDS USED IS 7 (DECIMAL) *****

0014073                                     -001- 30 XXX2928 OWCONTINUE
0014073 06 003034 140421 -----          31          L      R1,N(OWNO)(RA1)
0014074          32          EOW          # 12450
                                           -001- 33 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 003034 *****
                                           *

0014074 06 003035 017033 177777          37          CRM     R1,PROCSR,M(OWNO)
0014076          38          IF      CF THEN RGBEGIN # OW NUMBER WAS FOUND
0014076 06 003037 055011 ----- 0014107 -002- 39          BNC     IFS2933
0014077 06 003040 040425 -----          40          L      R1,N(OWSTAT)(RA1)
0014100 06 003041 017420 001403          41          CIRM    R1,OWDEAD,S(OWSTAT),M(OWSTAT)/ES(OWSTAT)
0014102          42          IF      - CF THEN RTNPROC 1 # ACCEPT IT ONLY IF IT IS NOT DEAD
0014102 06 003043 054005 ----- 0014107 -002- 43          BC      IFS2935
0014103 06 003044 003001 -----          -003- 44          LN      RO,1
0014104 06 003045 006212 -----          -003- 45          LR      RTBPM,PROCPM
0014105 06 003046 037000 011154 0011154 -003- 46          BL      BRTBPM
0014107          -002- 47 IFS2935
0014107          48          RGEND
0014107          -001- 49 IFS2933

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 226

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

SEARCH OVERWRITE FILE--OW PROCEDURE

CNRUTL W77D

0014107 06 003050 101460 -----	-005-	01 IOBPTR =		IOBPTR + RO	# INCREMENT POINTER
0014110		02	AR	IOBPTR,RO	
0014110		03 CKIOBPTR			
0014110		04	IF		
0014110 06 003051 106003 -----	-003-	05		IOBPTR < A.OBUFLEN THEN B SRCHSAMBLK	
0014111 06 003052 003400 176304 MASACS	-003-	06	LR	RO,IOBPTR	
0014113 06 003054 055744 ----- 0014057	-001-	07	SI	RO,OBUFLEN	
		08 IOBPTR =	BNC	SRCHSAMBLK	
0014114 06 003055 003460 176304 MASACS	-005-	09		IOBPTR - A.OBUFLEN	
0014116 06 003057 053733 ----- 0014051		10	SI	IOBPTR,OBUFLEN	
			B	SRCHNXTBLK1	

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 227

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

READ ONE RECORD FROM THE OVERWRITE FILE--OW PROCEDURE

CNRUTL W77D

```

0014117 01 # DESCRIPTION:
0014117 02 # READ ONE RECORD (ONE OVERWRITE) FROM THE OVERWRITE FILE
0014117 03 # ON TAPE TO THE OVERWRITE BUFFER IN STORE.
0014117 04
0014117 05 # ENTRY POINT:
0014117 06 # RDOWRCRD
0014117 07
0014117 08 # INPUTS
0014117 09 # IOBPTR = FIRST WORD OF THE RECORD IN I_OBUF
0014117 10 # I_OBUF = FIRST TAPE BLOCK OF RECORD
0014117 11 # TAPE IS POSITIONED AT THE SECOND BLOCK OF RECORD
0014117 12
0014117 13 # OUTPUTS
0014117 14 # RD = RETURN CODE
0014117 15 # 0--END OF FILE, NO RECORDS LEFT TO READ
0014117 16 # 1--NOT END OF FILE, RECORD HAS BEEN READ
0014117 17 # IOBPTR = FIRST WORD OF FOLLOWING RECORD
0014117 18 # I_OBUF = FIRST TAPE BLOCK OF FOLLOWING RECORD
0014117 19 # TAPE POSITIONED AT THE BLOCK FOLLOWING THE ONE IN I_OBUF
    
```

```

0014117 23 RDOWRCRD
0014117 06 0C3060 103040 ----- 24 ZR OWBPTR
0014120 06 003061 031000 045267 CTAPH 25 LAL RD,I_OBUF+I_OBUF,RA0
0014122 06 003063 042263 ----- 26 LX PROCSCR,IOBPTR(RA0)
0014123 27 IF PROCSCR = EOWF THEN RTNPROC 0
0014123 06 003064 003665 177777 -002- 28 CI PROCSCR,EOWF
0014125 06 003066 055005 ----- 0014132 -001- 29 BNC IFS2952
0014126 06 003067 003000 ----- -002- 30 LN RD,0
0014127 06 003070 006212 ----- -002- 31 LR RTBPM,PROCPM
0014130 06 003071 037000 011154 0011154 -002- 32 BL BRTBPM
0014132 -001- 33 IFS2952
0014132 34 RDNXTBLK
0014132 06 003073 131000 045267 CTAPH 35 LAL RD,I_OBUF+I_OBUF,RA0
0014134 06 003075 043003 ----- 36 LAX RD,IOBPTR(RA0)
0014135 06 003076 031400 010052 0010052 37 LAL RD,OWBUFFER,RA1
0014137 06 003100 043402 ----- 38 LAX RD,OWBPTR(RA1)
0014140 06 003101 003421 001474 MASACS -004- 39 R1 = A.OBUFLEN - IOBPTR
0014142 06 003103 005023 ----- -005- 40 LI R1,OBUFLEN
0014143 41 SR R1,IOBPTR
0014143 06 003104 006001 ----- -003- 42 IF PROCSCR <= R1 THEN R1 = PROCSCR
0014144 06 003105 005013 ----- -003- 43 LR RD,R1
0014145 06 003106 0550G2 ----- 0014147 -001- 44 SR RD,PROCSCR
0014146 06 003107 006033 ----- -006- 45 BNC IFS2961
0014147 -001- 46 LR R1,PROCSCR
0014147 06 003110 106001 ----- -004- 47 IFS2961
48 RO =
49 LR R1
RD,R1
    
```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

READ ONE RECORD FROM THE OVERWRITE FILE--OW PROCEDURE

CNRUTL W77D

```

0014150 06 003111 005260 ----- -005- 01 PROCSCR = PROCSCR - RO
0014151 06 003112 001460 ----- -005- 02 SR PROCSCR,RO
0014152 06 003113 001440 ----- -005- 03 IOBPTR = IOBPTR + RO
0014153 06 003114 073033 ----- -005- 04 AR IOBPTR,RO
0014154 06 003115 114273 ----- -005- 05 OWBPTR = OWBPTR + RO
0014155 06 003116 054010 ----- 0014165 -005- 06 AR OWBPTR,RO
0014156 06 003117 003060 ----- -005- 07 CALL MOVST
0014164 06 003125 153746 ----- 0014132 -001- 08 BSAI MMOVST # SUBROUTINE MOVST IS IN PROGRAM CSYSUB
0014165 06 003126 106003 ----- -003- 09 IF PROCSCR = 0 THEN RGBEGIN
0014166 06 003127 003400 176304 MASACS -003- 10 TZ PROCSCR
0014170 06 003131 054006 ----- 0014176 -001- 11 BC IFS2989
0014171 06 003132 031400 045267 CTAPH -003- 12 IOBPTR = 0
0014173 06 003134 042423 ----- -005- 13 ZR IOBPTR
0014174 06 003135 014021 ----- -002- 14 RD1BLK OVWCLNT,DUMUNLOD
0014175 06 003136 055007 ----- 0014204 -001- 15 BSAI RXEQR # SUBROUTINE REQR IS IN PROGRAM CTAPH
0014176 06 003137 103060 ----- -005- 16 ADDR DUMUNLOD,OVWCLNT*(7)+RD1BLK*(3)
0014200 06 003141 014400 011161 0011161 -001- 17 RTB TAPE
0014202 06 003143 137020 014676 0014676 -001- 18 BSA ADVPMTAPE

0014204 06 003145 103001 ----- -001- 21 B RDNXTBLK
0014205 06 003146 006212 ----- -001- 22 RGENG
0014206 06 003147 037000 011154 0011154 -001- 23 IFS2989
0014207 06 003148 000000 000000 000000 -003- 24 IF IOBPTR >= A.OBUFLN THEN B EXTRABLK
0014208 06 003149 000000 000000 000000 -003- 25 LR RO,IOBPTR
0014209 06 003150 000000 000000 000000 -003- 26 SI RO,OBUFLN
0014210 06 003151 000000 000000 000000 -001- 27 BC EXTRABLK
0014211 06 003152 000000 000000 000000 -001- 28 LAL RO,I_OBUF+I_OBUFD,RA1
0014212 06 003153 000000 000000 000000 -001- 29 LK R1,IOBPTR(RA1)
0014213 06 003154 000000 000000 000000 -002- 30 IF R1 = 0 THEN RGBEGIN
0014214 06 003155 000000 000000 000000 -002- 31 TZ R1
0014215 06 003156 000000 000000 000000 -001- 32 BNC IFS3003
0014216 06 003157 000000 000000 000000 -005- 33 EXTRABLK
0014217 06 003158 000000 000000 000000 -005- 34 IOBPTR = 0
0014218 06 003159 000000 000000 000000 -005- 35 ZR IOBPTR
0014219 06 003160 000000 000000 000000 -002- 36 RD1BLK OVWCLNT,DUMUNLOD
0014220 06 003161 000000 000000 000000 -002- 37 BSAI RXEQR # SUBROUTINE REQR IS IN PROGRAM CTAPH
0014221 06 003162 000000 000000 000000 -001- 38 ADDR DUMUNLOD,OVWCLNT*(7)+RD1BLK*(3)
0014222 06 003163 000000 000000 000000 -001- 39 RTB TAPE
0014223 06 003164 000000 000000 000000 -001- 40 BSA ADVPMTAPE

0014224 06 003165 000000 000000 000000 -001- 43 RGENG
0014225 06 003166 000000 000000 000000 -001- 44 IFS3003
0014226 06 003167 000000 000000 000000 -001- 45 RTNPROC 1
0014227 06 003168 000000 000000 000000 -001- 46 LN RO,1
0014228 06 003169 000000 000000 000000 -001- 47 LR RTBPM,PROCPM
0014229 06 003170 000000 000000 000000 -001- 48 BL BRTBPM

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 229

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

APPEND RECORD TO END OF OVERWRITE FILE--OW PROCEDURE

CNRUTL

W77D

```

0014210 01 # DESCRIPTION:
0014210 02 # ADD ONE RECORD TO THE END OF THE OVERWRITE FILE.
0014210 03
0014210 04 # ENTRY POINT:
0014210 05 # WRTOWRCRD
0014210 06
0014210 07 # INPUTS
0014210 08 # IOBPTR = END OF FILE MARK IN I_OBUF
0014210 09 # I_OBUF = BLOCK OF TAPE CONTAINING THE END OF FILE MARK
0014210 10 # TAPE IS POSITIONED AT THE BLOCK FOLLOWING THE ONE IN I_OBUF
0014210 11
0014210 12 # OUTPUTS
0014210 13 # RO = RETURN CODE
0014210 14 # 0--ERROR: IOBPTR DOES NOT POINT AT.EOWF
0014210 15 # 1--SUCCESS: RECORD HAS BEEN WRITTEN
0014210 16 # IOBPTR,I_OBUF, AND TAPE POSITION ARE THE SAME AS ENTRY
0014210 17 # CONDITIONS BUT AFTER RECORD HAS BEEN ADDED.

0014210 21 WRTOWRCRD
0014210 22 BACKSP OVVCLNT # POSITION FOR FIRST WRITE
0014210 06 003151 173047 ----- -002- 23 BSAI RXEQR # SUBROUTINE REQR IS IN PROGRAM CTAPH
0014211 06 003152 016100 137020 -001- 24 VFD 5,OVVCLNT 4,BACKSP 1,1 1,0 5,0
0014212 25 RTB TAPE
0014212 06 003153 137020 014676 0014676 -001- 26 BSA ADVPMTAPE

0014214 06 003155 103040 ----- 29 ZR OWBPTR
0014215 06 003156 031400 045267 CTAPH 30 LAL RO,I_OBUF+I_OBUF,RA1
0014217 06 003160 042663 ----- 31 LX PROCSCR,IOBPTR(RA1)
0014220 32 IF PROCSCR = EOWF THEN RTNPROC 0
0014220 06 003161 003665 177777 -002- 33 CI PROCSCR,EOWF
0014222 06 003163 054005 ----- 0014227 -001- 34 BC IFS3019
0014223 06 003164 003000 ----- -002- 35 LN RO,0
0014224 06 003165 006212 ----- -002- 36 LR RTBPM,PROCPM
0014225 06 003166 037000 011154 0011154 -002- 37 BL BRTBPM
0014227 -001- 38 IFS3019
0014227 06 003170 130660 010052 0010052 39 LL PROCSCR,OWBUFFER # SET UP TOTAL LENGTH OF OVERWRITE
0014231 06 003172 003421 001474 MASACS -004- 40 R1 = A.OBUFLN - IOBPTR
0014233 06 003174 005023 ----- -005- 41 LI R1,OBUFLN
0014234 42 SR R1,IOBPTR
43 IF R1 < N(EOH) THEN RGBEGIN # SKIP TO NEXT BLOCK IF HEADER DOES NOT
FIT

0014234 06 003175 006001 ----- -003- 45 LR RO,R1
0014235 06 003176 003400 177772 -003- 46 SI RO,N(EOH)
0014237 06 003200 054011 ----- 0014250 -001- 47 BC IFS302B
0014240 06 003201 003000 ----- 48 ZR RO
0014241 06 003202 046403 ----- 49 STX RO,IOBPTR(RA1) # FLAG--SKIP TO NEXT BLOCK

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 230

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

APPEND RECORD TO END OF OVERWRITE FILE--OW PROCEDURE

CNRUTL W77D

```

0014242 06 003203 003060 ----- 01 ZR IOBPTR
0014243 06 003204 003000 ----- 02 ZR RO # NORMAL (IE NOT EOF) WRITE
0014244 06 003205 073047 ----- -002- 03 WRITE OVWCLNT
0014245 06 003206 014700 137020 -001- 04 BSAI RXEQR # SUBROUTINE REQR IS IN PROGRAM CTAPH
0014246 06 003207 137020 014676 0014676 -001- 05 VFD 5,OVWCLNT 4,WRITE 1,1 1,0 5,0
0014246 06 003207 137020 014676 0014676 -001- 06 RTB TAPE
0014246 06 003207 137020 014676 0014676 -001- 07 BSA ADVPMTAPE

0014250 10 RGEND
0014250 -001- 11 IFS3028
0014250 12 WRTNXTBLK
0014250 06 003211 131000 010052 0010052 13 LAL RO,OWBUFFER,RAO
0014252 06 003213 043002 ----- 14 LAX RO,OWBPTR(RAO)
0014253 06 003214 031400 045267 CTAPH 15 LAL RO,I_OBUF+I_OBUFD,RA1
0014255 06 003216 043403 ----- 16 LAX RO,IOBPTR(RA1)
0014256 06 003217 003421 001474 MASACS -004- 17 R1 = A.OBUFLEN - IOBPTR
0014260 06 003221 005023 ----- -005- 18 LI R1,OBUFLEN
0014261 06 003222 006001 ----- -003- 19 SR R1,IOBPTR
0014262 06 003223 005013 ----- -003- 20 IF PROCSCR <= R1 THEN R1 = PROCSCR
0014263 06 003224 055002 ----- 0014265 -001- 21 LR RO,R1
0014264 06 003225 006033 ----- -006- 22 SR RO,PROCSCR
0014265 06 003225 006033 ----- -001- 23 BNC IFS3041
0014265 06 003225 006033 ----- -001- 24 LR R1,PROCSCR
0014265 06 003226 106001 ----- -004- 25 IFS3041
0014266 06 003227 005260 ----- -005- 26 RO = R1
0014267 06 003230 001460 ----- -005- 27 LR RO,R1
0014270 06 003231 001440 ----- -005- 28 PROCSCR = PROCSCR - RO
0014271 06 003232 073033 ----- -001- 29 SR PROCSCR,RO
0014272 06 003233 106003 ----- -003- 30 IOBPTR = IOBPTR + RO
0014273 06 003234 003400 176304 MASACS -003- 31 AR IOBPTR,RO
0014275 06 003236 055010 ----- 0014305 -001- 32 OWBPTR = OWBPTR + RO
0014276 06 003237 003060 ----- -005- 33 AR OWBPTR,RO
0014277 06 003240 003000 ----- 34 CALL MOVST
0014278 06 003241 073047 ----- -002- 35 BSAI MXOVST # SUBROUTINE MOVST IS IN PROGRAM CSYSUB
0014300 06 003242 014700 137020 -001- 36 IF IOBPTR >= A.OBUFLEN THEN RGBEGIN
0014301 06 003243 137020 014676 0014676 -001- 37 LR RO,IOBPTR
0014302 06 003243 137020 014676 0014676 -001- 38 SI RO,OBUFLEN
0014302 06 003243 137020 014676 0014676 -001- 39 BNC IFS3069
0014302 06 003243 137020 014676 0014676 -001- 40 IOBPTR = 0
0014302 06 003243 137020 014676 0014676 -001- 41 ZR IOBPTR
0014302 06 003243 137020 014676 0014676 -001- 42 ZR RO # NORMAL (IE NOT EOF) WRITE
0014302 06 003243 137020 014676 0014676 -001- 43 WRITE OVWCLNT
0014302 06 003243 137020 014676 0014676 -001- 44 BSAI RXEQR # SUBROUTINE REQR IS IN PROGRAM CTAPH
0014302 06 003243 137020 014676 0014676 -001- 45 VFD 5,OVWCLNT 4,WRITE 1,1 1,0 5,0
0014302 06 003243 137020 014676 0014676 -001- 46 RTB TAPE
0014302 06 003243 137020 014676 0014676 -001- 47 BSA ADVPMTAPE

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 231

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

APPEND RECORD TO END OF OVERWRITE FILE--OW PROCEDURE

CNRUTL W77D

0014304	06	003245	153744	-----	0014250	01	B	WRTNXTBLK
0014305						02	RGEND	
0014305						-001-	03	IFS3069
0014305	06	003246	131400	045267	CTAPH	04	LAL	RO,I_OBUF+I_OBUFD,RA1
0014307	06	003250	003421	177777		05	LI	R1,E00WF
0014311	06	003252	046423	-----		06	STX	R1,I0BPTR(RA1)
0014312	06	003253	003000	-----		07	ZR	RO
						08	WRITE	OVMCLNT # NORMAL (IE NOT EOF) WRITE
0014313	06	003254	073047	-----		-002-	09	BSAI RXEQR # SUBROUTINE REQR IS IN PROGRAM CTAPH
0014314	06	003255	014700	137020		-001-	10	VFD 5,OVMCLNT 4,WRITE 1,1 1,0 5,0
0014315							11	RTB TAPE
0014315	06	003256	137020	014676	0014676	-001-	12	BSA ADVPMTAPE
0014317							15	RTNPROC 1
0014317	06	003260	103001	-----		-001-	16	LN RO,1
0014320	06	003261	006212	-----		-001-	17	LR RTBPM,PROCPM
0014321	06	003262	037000	011154	0011154	-001-	18	BL BRTBPM

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 232

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

SEARCH TAPE BUFFER FOR A PARTICULAR ADDRESS--SUBROUTINE

CNRUTL

W770

```

0014323      01 # DESCRIPTION:
0014323      02 # SEARCH I_OBUFD FOR A GIVEN ADDRESS
0014323      03
0014323      04 # ENTRY POINT:
0014323      05 # SRCHTB
0014323      06
0014323      07 # INPUTS
0014323      08 # RAO = ADDRESS OF INTEREST
0014323      09 # I_OBUFD CONTAINS A BLOCK FROM THE PAGEMON FILE
0014323      10
0014323      11 # OUTPUTS
0014323      12 # RO = RETURN CODE
0014323      13 # 0--SUCCESS, ADDRESS WAS FOUND
0014323      14 # R1 = BASE ADDRESS OF BLOCK IN WHICH IT WAS FOUND
0014323      15 # R1 = LOGICAL WORD INDEX INTO THE BLOCK
0014323      16 # 1--FAILURE, ADDRESS NOT FOUND
0014323      17 # 2--FAILURE, ADDRESS NOT FOUND IN THIS SEGMENT

0014323      21 SRCHTB
0014323      22 BEGIN
0014323 06 003264 171420 ----- -002- 23 HA
0014324 06 003265 003060 ----- 24 ZR IOBPTR
0014325 06 003266 031500 045267 CTAPH 25 LAL R4,I_OBUF+I_OBUFD,RA1
0014327 06 003270 043503 ----- 26 LAX R4,IOBPTR(RA1)
0014330 06 003271 003502 177760 27 NI R4,M(RCRDLG)
0014332 06 003273 010504 ----- 28 RRN R4,S(RCRDLG) # R4 = LENGTH OF RECORD SEGMENT
0014333 29 IF CF THEN RGBEGIN
0014333 06 003274 055007 ----- 0014342 -002- 30 BNC IFS3090
0014334 31 ADRNOTFD
0014334 06 003275 130420 045266 LAYOUT 32 LL R1,I_OBUF+N(EOF)
0014336 06 003277 024035 ----- 33 TBN R1,S(EOF)
0014337 34 IF CF THEN RETURN 2
0014337 06 003300 055002 ----- 0014341 -002- 35 BNC IFS3092
0014340 06 003301 056442 ----- -003- 36 BTSAGN 2
0014341 -002- 37 IFS3092
0014341 38 RETURN 1
0014341 06 003302 156441 ----- -001- 39 BTSAGN 1
0014342 40 RGEND
0014342 -001- 41 IFS3090

0014342 06 003303 140640 ----- 43 L R10,0(RA1) # LOAD R10,R11 WITH PAGING BUFFER ADDRESS
0014343 06 003304 040661 ----- 44 L R11,1(RA1)
0014344 06 003305 006014 ----- 45 LR R0,R12 # LOAD R0,R1 WITH ADDRESS OF INTEREST
0014345 06 003306 006035 ----- 46 LR R1,R13
0014346 06 003307 005012 ----- 47 SR R0,R10 # PERFORM A 20-BIT SUBTRACT
0014347 06 003310 005033 ----- 48 SR R1,R11 # R1 = INDEX INTO SEGMENT RECORD (IF R0=0)
0014350 06 003311 054002 ----- 0014352 49 BC SUBDONE

```

COMMON NONRESIDENT UTILITIES

PR-10954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 233

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

SEARCH TAPE BUFFER FOR A PARTICULAR ADDRESS--SUBROUTINE

CNRUTL W77D

```

0014351 06 003312 004017 -----          01      SN      RO,1
0014352                                     02 SUBDONE
0014352 06 003313 103402 000017          03      NI      RO,MSK(4)      # CHECK HIGH 4 BITS OF 20-BIT SUBTRACT
0014354                                     04      IF      CF = 0 THEN RETURN 2 # GIVEN ADDRESS AT LEAST 64K FROM PAGING
                                                # BUFFER - FAIL
0014354 06 003315 054002 ----- 0014356 -001- 06      BC      IFS3096
0014355 06 003316 056442 -----          -002- 07      BTSAGN 2
0014356                                     -001- 08 IFS3096
0014356                                     09      IF      R1 >= R4 THEN B ADRNOTFD
0014356 06 003317 106001 -----          -003- 10      LR      RO,R1
0014357 06 003320 005004 -----          -003- 11      SR      RO,R4
0014360 06 003321 054754 ----- 0014334 -001- 12      BC      ADRNOTFD
0014361 06 003322 041402 -----          13      LA      RO,N(PGDATA)(RA1)
0014362 06 003323 072756 -----          14      HN      RA1,RA1      # SET UP RA1 FOR RETURN
0014363 06 003324 072777 -----          15      HN      RA1+1,RA1+1
0014364                                     16      RETURN 0
0014364 06 003325 056440 -----          -001- 17      BTSAGN 0

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 234

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

CALCULATE HASHSUM OVER NONRESIDENT PROGRAM DATA

CNRUTL W77D

```

0014365      01 # DESCRIPTION
0014365      02 # CALCULATE THE HASHSUM FOR A BLOCK OF NONRESIDENT PROGRAM DATA
0014365      03 # DATA IN I_OBUF MUST BE IN 16-BIT FORMAT
0014365      04
0014365      05 # ENTRY
0014365      06 # CALCHASHNR
0014365      07
0014365      08 # INPUTS
0014365      09 # R1 = INITIAL HASHSUM
0014365      10
0014365      11 # OUTPUTS
0014365      12 # RO = RETURN CODE
0014365      13 # 0 - SUCCESS
0014365      14 # 1 - FAILURE, HASHSUM SUBROUTINE FAILED OR ABORT RECEIVED FROM WAIT
0014365      15 # R1 = HASHSUM VALUE

-001- 19 OWPROG OW      0(3326)          # 13056
-001- 20 NOTE          ***** THE FIRST ADDRESS OVERWRITTEN IS 003326 *****

0014365      23 CALCHASHNR
0014365      24 BEGIN      ( )
0014365 06 003326 137000 015023 0015023 -001- 25 OWPROG BGNP      0(3764)          # 13056
-001- 26 BL           XXX3108
-001- 27 NOTE        OWPROG 'CSECT'
-001- 28 NOTE        ***** PATCH AREA BEGINS AT 003764 *****

0015023      -001- 31 XXX3108 PATCHAREA
0015023      32 BEGIN
0015023 06 003764 171420 ----- -002- 33 HA
0015024 06 003765 006141 ----- 34 LR      R6,R1          # SAVE HASHSUM
0015025 06 003766 003000 ----- 35 ZR      RO
0015026      36 ENDP          # 13056
0015026 06 003767 037000 014367 0014367 -001- 37 BL           XXX3113
-001- 38 NOTE        ***** LAST PATCH ADDRESS USED IS 003770 *****
-001- 39 NOTE        ***** NUMBER OF PATCH WORDS USED IS 5 (DECIMAL) *****

0014367      -001- 42 XXX3113 OWCONTINUE
0014367 06 003330 134400 046765 MASACS 43 STL      RO,I_OBUF+BLKSIZE-1 # ZERO LAST WORD IN I_OBUF TO TERMINATE
0014371      45 EOH          # 13056
-001- 46 NOTE        ***** THE LAST ADDRESS OVERWRITTEN IS 003331 *****
*
```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 235

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

CALCULATE HASHSUM OVER NONRESIDENT PROGRAM DATA

CNRUTL W77D

```

0014371 06 003332 031400 045267 CTAPH          01      LAL      RO,I_OBUF+I_OBUFD,RA1 # RA1 = ADDRESS OF FIRST RECORD
0014373                                     03 NEWRECORD
0014373 06 003334 141700 -----                04      LA      RAD,0(RA1)          # LENGTH AND HIGH ADDRESS BITS
0014374 06 003335 041721 -----                05      LA      RAD+1,1(RA1)        # LOW ADDRESS BITS
0014375 06 003336 041401 -----                06      LA      RO,1(RA1)          # RA1 = FIRST DATA WORD
                                                07 OMPROG OW      0(3337)          # 13056
-001- 08      NOTE      ***** THE FIRST ADDRESS OVERWRITTEN IS 003337 *****

0014376 06 003337 037000 015006 0015006 -001- 11 OMPROG BGNP      0(3747)          # 13056
-001- 12      BL      XXX3119
-001- 13      NOTE      OMPROG 'CSECT'
-001- 14      NOTE      ***** PATCH AREA BEGINS AT 003747 *****

0015006                                     -001- 17 XXX3119 PATCHAREA
0015006 06 003747 106254 -----                18      LR      R10,R12
0015007 06 003750 003642 177760                19      NI      R10,M(RCRDLG)
0015011                                     20      ENDP
0015011 06 003752 037000 014400 0014400 -001- 21      BL      XXX3121          # 13056
-001- 22      NOTE      ***** LAST PATCH ADDRESS USED IS 003753 *****
-001- 23      NOTE      ***** NUMBER OF PATCH WORDS USED IS 5 (DECIMAL) *****

0014400                                     -001- 26 XXX3121 OMPROG
0014400 06 003341 110644 -----                27      RRR      R10,S(RCRDLG)          # R10 = TOTAL LENGTH OF NEW RECORD
0014401                                     28      IF
0014401 06 003342 014252 -----                -002- 29      TZ      R10
0014402 06 003343 055003 ----- 0014405 -001- 30      BNC      IFS3123
0014403                                     31      EOW          # 13056
-001- 32      NOTE      ***** THE LAST ADDRESS OVERWRITTEN IS 003343 *****
                          *****

0014403 06 003344 006026 -----                36      LR      R1,R6
-001- 37 OMPROG OW      0(3345)          # 13056
-001- 38      NOTE      ***** THE FIRST ADDRESS OVERWRITTEN IS 003345 *****
                          *****

0014404                                     42      RETURN 0          # DONE
0014404 06 003345 056440 -----                -001- 43      BTSAGN 0
0014405                                     44      RGEN
0014405                                     -001- 45 IFS3123

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 236

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

CALCULATE HASHSUM OVER NONRESIDENT PROGRAM DATA

CNRUTL W77D

```

0014405          01 MORENR
0014405 08 003346 106052 ----- 02      LR      R2,R10
0014406          03      EOW
                                -001- 04      NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 003346 *****
                                *

0014406          08      IF      R2 >= HASHLENMAX+1 THEN LI R2,HASHLENMAX
0014406 06 003347 006002 ----- -003- 09      LR      RO,R2
0014407 06 003350 003400 177677 -003- 10      SI      RO,HASHLENMAX+1
0014411 06 003352 055003 ----- 0014414 -001- 11      BNC     IFS3133
0014412 06 003353 003441 000100 -001- 12      LI      R2,HASHLENMAX #
0014414          -001- 13 IFS3133
0014414 06 003355 106002 ----- 14      LR      RO,R2
0014415 06 003356 006026 ----- 15      LR      R1,R6
0014416          16      CALL   HASHSUMP
0014416 06 003357 037021 016247 MASACS -001- 17      BSA     HASHSUMP
0014420 06 003361 155012 ----- 0014432 18      BNC     CALCHASHNRFAIL
0014421 06 003362 006141 ----- 19      LR      R6,R1
0014422          20      CALL   WAIT # REAL TIME WAIT
0014422 06 003363 073025 ----- -001- 21      BSAI   W%AIT # SUBROUTINE WAIT IS IN PROGRAM CBLM
0014423 06 003364 155007 ----- 0014432 22      BNC     CALCHASHNRFAIL
                                23      OWPROG OW      O(3365) # 13056
                                -001- 24      NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 003365 *****

0014424 06 003365 005242 ----- 27      SR      R10,R2 # R10 = REMAINING WORDS
                                28      OWPROG BGNP   O(3754) # 13056
0014425 06 003366 037000 015013 0015013 -001- 29      BL      XXX3140
                                -001- 30      NOTE   OWPROG 'CSECT'
                                -001- 31      NOTE ***** PATCH AREA BEGINS AT 003754 *****

0015013          -001- 34 XXX3140 PATCHAREA
0015013          35      ARL     RAO,R2 # ADJUST RAO
0015013 06 003754 101722 ----- -001- 36      AR      RAO+1,R2
0015014 06 003755 055002 ----- 0015016 -001- 37      BNC     IFS3142
0015015 06 003756 004701 ----- -001- 38      AN      RAO,1
0015016          39      ARL     RA1,R2 # ADJUST RA1
0015016 06 003757 101762 ----- -001- 40      AR      RA1+1,R2
0015017 06 003760 055002 ----- 0015021 -001- 41      BNC     IFS3143
0015020 06 003761 004741 ----- -001- 42      AN      RA1,1
0015021          43      ENDP
                                -001- 44      BL      XXX3144 # 13056
                                -001- 45      NOTE ***** LAST PATCH ADDRESS USED IS 003763 *****
                                -001- 46      NOTE ***** NUMBER OF PATCH WORDS USED IS 8 (DECIMAL) *****

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 237

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

CALCULATE HASHSUM OVER NONRESIDENT PROGRAM DATA

CNRUTL W77D

```

0014427          -001- 01 XXX3144 OWCONTINUE
0014427          02          IF      R10  = 0 THEN B MORENR
0014427 06 003370 114252 ----- -002- 03          TZ      R10
0014430 06 003371 055755 ----- 0014405 -001- 04          BNC    MORENR
0014431          05          EOW          # 13056
-001- 06          NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 003371 *****
                    *

0014431 06 003372 053742 ----- 0014373    10          B          NEWRECORD

                    14 OWPROG OW      0(3373)          # 13056
-001- 15          NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 003373 *****

0014432          18 CALHASHNRFAIL
0014432          19          RETURN 1          # FAILURE
0014432 06 003373 156441 ----- -001- 20          BTSAGN 1
0014433          21          EOW          # 13056
-001- 22          NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 003373 *****
                    *

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 238

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

CHECK NUMBER ALGORITHM--SUBROUTINE

CNRUTL W77D

```

01 # DESCRIPTION:
02 # Check the validity of the data given in the IN:OWDATA input message by
03 # calculating and matching the message check number. The check number algorithm
04 # implemented here will catch all single occurrences of the most common types
05 # of input errors. The type of errors covered are the following:
06 # 1. Digit in error, e.g., 2345 to 2346
07 # 2. Missing digit, e.g., 2345 to 235
08 # 3. Inserted digit, e.g., 2345 to 23445
09 # 4. Reversal of two adjacent digits, e.g., 2345 to 2435
0014433 10
11 # The check is made over all fields of the TTY input message:
12 #   IN:OWDATA:ck,seg,adr,old,new!
0014433 13
14 # A two digit check number is produced from this algorithm and is matched
15 # against 'ck'. The address (adr), old data (old), and new data (new) fields
16 # are interpreted as octal digits and each digit must be converted to decimal
17 # (BCD) before the algorithm is applied. The segment (seg) and check number
18 # (ck) are inputted as decimal digits directly. It is assumed that invalid
19 # numbers or characters for a particular data field have already been rejected
20 # by previous routines (e.g., the digit 9 in the 'adr' field). The check can
21 # be overridden by substituting a single minus character (-) for the check
0014433 22 # number.
23
24 # The algorithm is defined as follows:
25 #   DEFINITIONS:
26 #   Z(i) = number of significant (embedded) zeros in data field F(i)
27 #         if F(i) = 0.
28 #         = 0 if F(i) = 0.
29 #   F(i) = d(ip)...d(i2) d(i1)
0014433 30
31 #   ALGORITHM:
32 #   X = mod(10) SUM(i=1,n)[(SUM(j=even,p) d(ij)) + Z(i)]
33 #   Y = mod(10) SUM(i=1,n)[(SUM(j=odd,p) d(ij)) + Z(i)]
0014433 34
35 #   C = (10X + Y) (2-digit check number)
0014433 36
0014433 37 #   For this case, n = 4 and F(1) = seg, F(2) = adr, F(3) = old, F(4) = new
0014433 38
39 # ENTRIES:
40 # CHECKNUM

0014433 43 CHECKNUM
0014433 44 # INPUTS
45 # SAME AS INOWDATA
46
47 # OUTPUTS
48 # RO = 0 - CHECK PASSED
49 # RO = 1 - CHECK FAILURE

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 239

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

CHECK NUMBER ALGORITHM--SUBROUTINE

CNRUTL W77D

```

0014433 ,
0014433 06 003374 171420 ----- -002- 02 BEGIN
0014434 06 003375 003545 000015 -002- 03 HA
0014434 06 003377 055002 ----- 0014440 -001- 04 IF R6 = BCD_MI THEN RETURN 0 # NO VALIDITY CHECK
0014437 06 003400 056440 ----- -002- 05 CI R6,BCD_MI
0014440 06 003401 106006 ----- -001- 06 BNC IFS3161
0014441 06 003402 037020 110072 CSYSUB -001- 07 BTSAGN 0
0014441 06 003402 037020 110072 CSYSUB -001- 08 IFS3161
0014443 06 003405 014021 ----- -002- 09 LR R0,R6
0014443 06 003406 054002 ----- 0014447 -001- 10 CALL TENZERO # ZERO THE 'ZERO' DIGITS
0014444 06 003407 056441 ----- -001- 11 BSA TENZERO
0014444 06 003405 014021 ----- -002- 12 LR R6,R0
0014445 06 003406 054002 ----- 0014447 -001- 13 IF R1 = 0 THEN RETURN 1
0014446 06 003407 056441 ----- -002- 14 TZ R1
0014447 06 003410 106007 ----- -001- 15 BC IFS3165
0014447 06 003410 106007 ----- -001- 16 BTSAGN 1
0014450 06 003411 037020 110072 CSYSUB -001- 17 IFS3165
0014450 06 003413 106160 ----- -001- 18 LR R0,R7
0014450 06 003411 037020 110072 CSYSUB -001- 19 CALL TENZERO # ZERO THE 'ZERO' DIGITS
0014452 06 003413 106160 ----- -001- 20 BSA TENZERO
0014453 06 003414 014021 ----- -002- 21 LR R7,R0
0014453 06 003414 014021 ----- -002- 22 IF R1 = 0 THEN RETURN 1
0014454 06 003415 054002 ----- 0014456 -001- 23 TZ R1
0014455 06 003416 056441 ----- -001- 24 BC IFS3169
0014456 06 003417 103340 ----- -001- 25 BTSAGN 1
0014456 06 003417 103340 ----- -001- 26 IFS3169
0014457 06 003420 003360 ----- 27 ZR R14 # EVEN POSITION DIGIT ACCUM.
0014460 06 003421 003040 ----- 28 ZR R15 # ODD POSITION DIGIT ACCUM.
0014461 06 003422 003063 ----- 29 ZR R2 # NONZERO DIGIT SEEN FLAG (BIT 0)
0014461 06 003422 003063 ----- 31 LN R3,3 # LOOP 4 TIMES (4 DECIMAL DIGITS IN SEG NO.
0014462 33 SEGNOLP FIELD)
0014462 06 003423 110574 ----- 34 # R7 CONTAINS BCD NUMBER
0014463 06 003424 006107 ----- 35 RLN R7,4
0014464 06 003425 003502 000017 36 LR R4,R7
0014466 06 003427 055006 ----- 0014474 37 NI R4,MSK(4)
0014467 06 003430 124040 ----- 38 BNC SEGNZERO
0014467 06 003430 124040 ----- 39
0014470 06 003431 055012 ----- 0014502 40 SEGNZERO # ZERO FOUND
0014471 06 003432 004741 ----- 41 TBN R2,0
0014472 06 003433 004761 ----- 42 BNC SEGNEXT
0014473 06 003434 053007 ----- 0014502 43 AN R14,1
0014474 06 003435 126040 ----- 44 AN R15,1
0014475 06 003436 001744 ----- 45 B SEGNEXT
0014476 06 003437 024060 ----- 46 SEGNZERO
0014476 06 003437 024060 ----- 47 SBN R2,0 # SET NONZERO DIGIT SEEN FLAG
0014476 06 003437 024060 ----- 48 AR R14,R4 # ADD TO EVEN ACCUM.
0014476 06 003437 024060 ----- 49 TBN R3,0 # CF = 1 MEANS DIGIT IN EVEN POSITION

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 240

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

CHECK NUMBER ALGORITHM--SUBROUTINE

CNRUTL W77D

0014477 06 003440 054003 ----- 0014502	01	BC	SEGNEXT		
0014500 06 003441 005344 -----	02	SR	R14,R4		
0014501 06 003442 001764 -----	03	AR	R15,R4		# ADD TO ODD ACCUM.
0014502	04	SEGNEXT			
0014502 06 003443 136060 014462 0014462	05	BX	R3,SEGNOLP		
0014504 06 003445 003022 -----	07	LN	R1,2		# LOOP 3 TIMES (3 REG PAIR FIELDS)
0014505	08	FIELDLP			
0014505 06 003446 103040 -----	09	ZR	R2		# NONZERO DIGIT SEEN FLAG (BIT 0)
0014506 06 003447 003067 -----	11	LN	R3,7		# LOOP 8 TIMES (8 OCTAL DIGITS IN ADR/DATA FIELD)
0014507	13	OCTNOLP			
0014507 06 003450 110615 -----	14	# R8,R9	CONTAIN OCTAL NUMBER		
0014510 06 003451 010635 -----	15	RLN	R8,3		# SHIFT NUMBER LEFT ONE DIGIT
0014511 06 003452 016211 000007	16	RLN	R9,3		
0014513 06 003454 006110 -----	17	IRM	R8,R9,MSK(3)		
0014514 06 003455 010510 -----	18	LR	R4,R8		
0014515 06 003456 003502 000007	19	RRN	R4,8		
0014517 06 003460 055006 ----- 0014525	20	NI	R4,MSK(3)		
0014520	21	BNC	OCTNZERO		
0014520	22				
0014520 06 003461 124040 -----	23	OCTZERO			# ZERO FOUND
0014521 06 003462 055072 ----- 0014533	24	TBN	R2,0		
0014522 06 003463 004741 -----	25	BNC	OCTNEXT		
0014523 06 003464 004761 -----	26	AN	R14,1		
0014524 06 003465 053007 ----- 0014533	27	AN	R15,1		
0014525	28	B	OCTNEXT		
0014525 06 003466 126040 -----	29	OCTNZERO			
0014526 06 003467 001744 -----	30	SBN	R2,0		# SET NONZERO DIGIT SEEN FLAG
0014527 06 003470 024060 -----	31	AR	R14,R4		# ADD TO EVEN ACCUM.
0014530 06 003471 054003 ----- 0014533	32	TBN	R3,0		
0014531 06 003472 005344 -----	33	BC	OCTNEXT		
0014532 06 003473 001764 -----	34	SR	R14,R4		
0014533	35	AR	R15,R4		# ADD TO ODD ACCUM.
0014533 06 003474 136060 014507 0014507	36	OCTNEXT			
	37	BX	R3,OCTNOLP		
0014535 06 003476 006212 -----	39	LR	R8,R10		# SHIFT DOWN NEXT REGISTER PAIR
0014536 06 003477 006233 -----	40	LR	R9,R11		
0014537 06 003500 006254 -----	41	LR	R10,R12		
0014540 06 003501 006275 -----	42	LR	R11,R13		
0014541 06 003502 036020 014505 0014505	43	BX	R1,FIELDLP		
0014543 06 003504 006016 -----	45	# R14,R15	CONTAIN CHECK ACCUM. (BINARY)		
0014544	46	LR	R0,R14		
0014544 06 003505 037020 110023 CSYSUB -001-	47	CALL	BINXBCD		
0014546 06 003507 106041 -----	48	BSA	BINXBCD		
	49	LR	R2,R1		

COMMON NONRESIDENT UTILITIES

PR-1C954-50

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

CHECK NUMBER ALGORITHM--SUBROUTINE

CNRUTL W77D

```

0014547 06 003510 010454 -----          01      RLN      R2,4
0014550 06 003511 006017 -----          02      LR       RO,R15
0014551                                     03      CALL     BINXBCD
0014551 06 003512 037020 110023 CSYSUB -001- 04      BSA      BINXBCD
0014553 06 003514 116041 000017          05      IRM     R2,R1,MSK(4)      # COMPUTED CHECK NO.
                                           06 OWPORG OW      0(3516)          # 12449
                                           -001- 07      NOTE    ***** THE FIRST ADDRESS OVERWRITTEN IS 003516 *****

0014555 06 003516 003442 000377          10      NI      R2,MSK(8)      # COMPUTED CHECK NO.
                                           11 OWPORG BGNP   0(3672)          # 12449
0014557 06 003520 037000 014731 0014731 -001- 12      BL      XXX3176
                                           -001- 13      NOTE    OWPORG 'CSECT'
                                           -001- 14      NOTE    ***** PATCH AREA BEGINS AT 003672 *****

0014731                                     -001- 17 XXX3176 PATCHAREA
0014731 06 003672 106006 -----          18      LR      RO,R6      # CHECK NO. FROM TTY INPUT MESSAGE
0014732 06 003673 015002 -----          19      XR      RO,R2      # COMPARE
0014733                                     20      RETURN
0014733 06 003674 056420 -----          -001- 21      BTSAG
0014734                                     22      ENDP    NR          # 12449
                                           -001- 23      NOTE    ***** LAST PATCH ADDRESS USED IS 003674 *****
                                           -001- 24      NOTE    ***** NUMBER OF PATCH WORDS USED IS 3 (DECIMAL) *****

0014561                                     27      EOW
                                           -001- 28      NOTE    ***** THE LAST ADDRESS OVERWRITTEN IS 003521 *****
                                           *

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 242

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

MISCELLANEOUS SUBROUTINES

CNRUTL W77D

```

01 # DESCRIPTION
02 # CHECK IF THE OVERWRITE PROGRAM IS ACTIVE AND IDLE
0014561 03
04 # ENTRIES
05 # FRSTCHK
0014561 06
07 # INPUTS
08 # NONE
0014561 09
10 # OUTPUTS
11 # RO = RETURN CODE
12 # 0 - SUCCESS
13 # RA1 = BASE ADDRESS OF OW CONTROL BLOCK 'OWCTL'
14 # TTY_NG - FAILURE, OW PROGRAM NOT CURRENTLY ACTIVE
15 # TTY_RL - FAILURE, OW PROGRAM BUSY

0014561 19 FRSTCHK
0014561 20 BEGIN ( )
0014561 21 IF OFLUCTL == OWPG THEN RETURN TTY_NG # OW PROGRAM NOT ACTIVE
0014561 06 003522 130400 043177 CTSD -002- 22 LL RO, OFLUCTL
0014563 06 003524 003404 000001 -002- 23 XI RO, OWPG
0014565 06 003526 054002 ----- 0014567 -001- 24 BC IFS3189
0014566 06 003527 056467 ----- TTYTBL -002- 25 BTSAN TTY_NG
0014567 -001- 26 IFS3189
0014567 06 003530 131400 010025 0010025 27 LAL RO, OWCTL, RA1
0014571 06 003532 040406 ----- 28 L RO, N(RTBPM)(RA1)
0014572 29 IF RO == 0 THEN RETURN TTY_RL # OW PROGRAM BUSY
0014572 06 003533 014000 ----- -002- 30 TZ RO
0014573 06 003534 054002 ----- 0014575 -001- 31 BC IFS3192
0014574 06 003535 056466 ----- TTYTBL -002- 32 BTSAN TTY_RL
0014575 -001- 33 IFS3192
0014575 34 RETURN 0
0014575 06 003536 156460 ----- -001- 35 BTSAN 0

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 243

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

MISCELLANEOUS SUBROUTINES

CNRUTL W77D

```

0014576      01 # DESCRIPTION
              02 # PACK A BCD DATE INTO ONE 16-BIT WORD
              03
0014576      04 # ENTRY
              05 # PACKDATE
0014576      06
              07 # INPUTS
              08 # RO = mmdd (BCD)
              09 # R1 = yyXX (BCD)
0014576      10
              11 # OUTPUTS
              12 # RO = PACKED DATE (BINARY)

0014576      14 PACKDATE
              15 # BINARY_DATE = YEAR*E(9)+(MONTH*32+DAY)
0014576      16 BEGIN
0014576 06 003537 171420 ----- -002- 17 HA
0014577 06 003540 006061 ----- 18 LR R3,R1
0014600 06 003541 016440 177400 19 LRM R2,RO,MSK(8,8)
0014602 06 003543 010450 ----- 20 RRN R2,8 # mm
0014603 06 003544 003402 000377 21 NI R0,MSK(8) # dd
0014605      22 CALL BCDXBIN
0014605 06 003546 073030 ----- -001- 23 BSAI BXCDBIN # SUBROUTINE BCDXBIN IS IN PROGRAM CSYSUB
0014606 06 003547 106160 ----- 24 LR R7,R0 # DAY
0014607 06 003550 006002 ----- 25 LR R0,R2
0014610      26 CALL BCDXBIN
0014610 06 003551 073030 ----- -001- 27 BSAI BXCDBIN # SUBROUTINE BCDXBIN IS IN PROGRAM CSYSUB
0014611 06 003552 110413 ----- 28 RLN R0,5
0014612 06 003553 016160 000740 29 IRM R7,RO,MSK(4,5) # MONTH,DAY IN R7
0014614 06 003555 016403 177400 30 LRM R0,R3,MSK(8,8)
0014616 06 003557 010410 ----- 31 RRN R0,8
0014617      32 CALL BCDXBIN
0014617 06 003560 073030 ----- -001- 33 BSAI BXCDBIN # SUBROUTINE BCDXBIN IS IN PROGRAM CSYSUB
0014620 06 003561 110407 ----- 34 RLN R0,9
0014621 06 003562 016160 177000 35 IRM R7,RO,MSK(7,9) # YEAR,MONTH,DAY IN R7
0014623 06 003564 006007 ----- 36 LR R0,R7
0014624      37 RETURN
0014624 06 003565 056420 ----- -001- 38 BTSAG

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 244

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

SAVE AND EXECUTE PROGRESS MARKS

CNRUTL W77D

```

0014625 , 01 REQPASS
0014625 06 003566 103541 000302 TTYTBL -001- 02 SPELL R6,(C,O,M,P,L)
0014627 06 003570 053003 ----- 0014632 04 LI R6,CXOMPL
04 B TTYACK

0014630 06 REQFAIL
0014630 06 003571 103541 000346 TTYTBL -001- 07 SPELL R6,(S,T,O,P,P,E,D)
08 LI R6,SXTOPPED

0014632 10 TTYACK
0014632 11 PRINT FMT=(WRD,WRD,WRD)

-001- 13 # MESSAGE PROTOTYPE
-001- 14 # mm WRD WRD WRD
0014632 06 003573 173053 ----- -002- 15 BSAI PXMRY # SUBROUTINE PMRY IS IN PROGRAM TTYAPP
0014633 06 003574 000200 ----- -002- 16 VFD 1,0 2,0 1,0 3,0 1,0 1,1 1,0 2,0 1,0 3,0
0014634 06 003575 021040 ----- -002- 17 VFD 4,TTYO_4,TTYO_4,TTYO_4,TTYO_WRD
0014635 06 003576 021042 137020 -002- 18 VFD 4,TTYO_4,TTYO_4,TTYO_4,TTYO
-001- 19 NOTE THE VARIABLE PORTION OF THE OUTPUT MESSAGE TO BE PRINTED IS
CONTAINED IN GENERAL REGISTERS R4,R5,R6,

0014636 21 NOTTYACK
0014636 22 RTB
0014636 06 003577 137020 014670 0014670 -001- 23 BSA ADVPM

-001- 26 OMPROG OW 0(3601) #3E790307
-001- 27 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 003601 *****

0014640 06 003601 173047 ----- -002- 30 CLOSE OVWCLNT # ASSURE TAPE CLOSED
0014641 06 003602 015300 ----- -002- 31 BSAI RXEQR # SUBROUTINE REQR IS IN PROGRAM CTAPH
0014642 06 003603 103200 ----- -001- 32 VFD 5,OVWCLNT 4,CLOSE 1,1 1,0 5,0
0014643 33 LN RTBPM,0 # GO TO WAIT STATE
34 EOW #3E790307
-001- 35 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 003603 *****

39 # CHECK FOR 'LOD OW COMPL' MESSAGE
0014643 06 003604 003505 000024 TTYTBL -001- 40 SPELL R4,(L,O,D),OP=CI
0014643 41 CI R4,LXOD
0014645 06 003606 055016 ----- 0014663 -002- 42 IF CF THEN RGBEGIN
43 BNC IFS3227
44 SPELL R6,(C,O,M,P,L),OP=CI
0014646 06 003607 003545 000302 TTYTBL -001- 45 CI R6,CXOMPL
0014650 46 IF CF THEN RGBEGIN
0014650 06 003611 055013 ----- 0014663 -002- 47 BNC IFS3232
48 OMPROG OW 0(3612) # 12438
-001- 49 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 003612

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 245

OVERWRITE MULTISCAN FUNCTION
 SAVE AND EXECUTE PROGRESS MARKS

0:32:20 2/06/81 ****

CNRUTL W77D

0014651 06 003612 024161 -----	04	TBN	NEW_OP,S(NEW_OP)
	05	SPELL	R7,(O,L,D)
0014652 06 003613 003561 001200 TTYTBL	-001- 06	LI	R7,OXLD
0014654	07	IF	CF = 1 THEN SPELL R7,(N,E,W)
0014654 06 003615 055003 ----- 0014657	-001- 08	BNC	IFS3238
0014655 06 003616 003561 001165 TTYTBL	-002- 09	LI	R7,NXEW
0014657	-001- 10		
0014657	11	EOW	# 12438
	-001- 12	NOTE	***** THE LAST ADDRESS OVERWRITTEN IS 003617 *****
0014657 06 003620 103501 000050 TTYTBL	-001- 16	SPELL	R4,(V,E,R)
	17	LI	R4,VXER
	18	OW	O(3622) # 12438
	-001- 19	NOTE	***** THE FIRST ADDRESS OVERWRITTEN IS 003622 *****
0014661 06 003622 037000 014734 0014734	-001- 23	BGNP	O(3675) # 12438
	-001- 24	BL	XXX3249
	-001- 25	NOTE	OWPROG 'CSECT'
	-001- 26	NOTE	***** PATCH AREA BEGINS AT 003675 *****
0014734	-001- 30	PATCHAREA	
0014734	31	CALL	AUTOVEROW
0014734 06 003675 137020 012210 0012210	-001- 32	BSA	AUTOVERCW
0014736	33	RETURN	2
0014736 06 003677 156442 -----	-001- 34	BTSAGN	2
0014737	35	ENDP	NR # 12438
	-001- 36	NOTE	***** LAST PATCH ADDRESS USED IS 003677 *****
			*
	-001- 38	NOTE	**** NUMBER OF PATCH WORDS USED IS 3 (DECIMAL) *****
0014663	41	EOW	# 12438
	-001- 42	NOTE	***** THE LAST ADDRESS OVERWRITTEN IS 003623 *****

COMMON NONRESIDENT UTILITIES

PR-10954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 246

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

SAVE AND EXECUTE PROGRESS MARKS

CNRUTL W77D

```

0014663      01      RGEND
0014663      -001- 02 IFS3232
0014663      03      RGEND
0014663      -001- 04 IFS3227

0014663      06 ADVPMOUT
0014663      07 OWPROG OW 0(3624) #3E790307
0014663      -001- 08 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 003624 *****

0014663 06 003624 131400 010025 0010025      11 LAL RO,OWCTL,RA1
0014665      12 CALL ST2_13
0014665 06 003626 037020 111003 CSYSUB      -001- 13 BSA ST2_13
0014667      14 RETURN 2 # CONTINUE MSF
0014667 06 003630 156442 -----      -001- 15 BTSAGN 2
0014670      16 EOW #3E790307
0014670      -001- 17 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 003630 *****
*

0014670      24 ADVPM
0014670 06 003631 103000 -----      25 LN RO,0
0014671 06 003632 053007 ----- 0014700      26 B ADVPMMERGE
0014672      27 ADVPMTTYOUT
0014672 06 003633 106220 -----      28 LR TTYLINK,RO
0014673 06 003634 003401 100000      29 LI RO,ES(TTYACT)
0014675 06 003636 053003 ----- 0014700      30 B ADVPMMERGE
0014676      31 ADVPMTAPE
0014676      32 OWPROG OW 0(3637) #3E790260
0014676      -001- 33 NOTE ***** THE FIRST ADDRESS OVERWRITTEN IS 003637 *****

0014676 06 003637 137000 121477 0000241      -001- 36 CPATCH7 BGNP 0(241) #3E790260
0014676      -001- 37 BL XXX3267
0014676      -001- 38 NOTE CPATCH7 'CSECT'
0014676      -001- 39 NOTE ***** PATCH AREA BEGINS AT 000241 *****

0121477      -001- 42 XXX3267 PATCHAREA
0121477      43 CALL TEMPINH # ALLOW FULL BASE LEVEL LOOP
0121477 14 000241 137020 147320 BLHMA      -001- 44 BSA TEMPINH_
0121501 14 000243 103401 040000      45 LI RO,ES(TAPEACT)
0121503      46 ENDP #3E790260
0121503 14 000245 037000 014700 0003641      -001- 47 BL XXX3270
0121503      -001- 48 NOTE ***** LAST PATCH ADDRESS USED IS 000246 *****
0121503      -001- 49 NOTE ***** NUMBER OF PATCH WORDS USED IS 6 (DECIMAL) *****

```

COMMON NONRESIDENT UTILITIES

PR-1C954-5D

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 247

OVERWRITE MULTISCAN FUNCTION
SAVE AND EXECUTE PROGRESS MARKS

0:32:20 2/06/81 ****

CNRUTL W77D

```
0014700 -001- 03 XXX3270 OWCONTINUE
0014700 04 EOW #3E790260
-001- 05 NOTE ***** THE LAST ADDRESS OVERWRITTEN IS 003640 *****
*
```

```
0014700 10 ADVPMERGE
11 # A REAL TIME BREAK WILL NOW BE TAKEN. THE DISPLACEMENT FROM
12 # 'RTBPMORG' IS COMPUTED AND SAVED. THE HOLD-GET REGISTER
13 # MUST BE INCREMENTED ONE LEVEL TO ESCAPE THE SUBROUTINE CALL.
0014700 06 003641 172201 ----- 14 GN RTBPM,1
0014701 06 003642 031420 011160 0011160 15 LAL R1,RTBPMORG,RA1
0014703 06 003644 005217 ----- 16 SR RTBPM,RA1+1 # CALCULATE RTB PM AND SAVE
0014704 06 003645 014600 ----- 17 OR RTBPM,RO # SET FLAGS FOR RTB REASON
0014705 18
0014705 19 MIMODE L R1,HG
0014705 06 003646 013000 ----- -001- 20 MIS 0
0014706 06 003647 052465 ----- -002- 21 VFD 8,R1XT 8,HGXF
0014707 06 003650 003420 000020 LAYOUT 22 AI R1,ENTRYSIZ(HGAREA) # ESCAPE SUBROUTINE CALL
0014711 23 MIMODE L HG,R1
0014711 06 003652 013000 ----- -001- 24 MIS 0
0014712 06 003653 032525 ----- -002- 25 VFD 8,HGXT 8,R1XF
0014713 06 003654 053750 ----- 0014663 26 B ADVPMOUT
```

```
0014714 30 ADVPMTTYINZ
0014714 31 IF SEQKEY = 2 THEN RETURN TTY_NG
0014714 06 003655 130400 010041 0010041 -002- 32 LL RO,SEQKEY
0014716 06 003657 003404 000002 -002- 33 XI RO,2
0014720 06 003661 054002 ----- 0014722 -001- 34 BC IFS3278
0014721 06 003662 056447 ----- TTYTBL -002- 35 BTSAGN TTY_NG
0014722 -001- 36 IFS3278
0014722 37 ADVPMTTYIN
0014722 06 003663 131400 010025 0010025 38 LAL RO,OWCTL,RA1
0014724 39 CALL ST2_13 # SAVE TTY INPUTS
0014724 06 003665 037020 111003 CSYSUB -001- 40 BSA ST2_13
0014726 41 CALL PAPEROFF
0014726 06 003667 137020 161223 CTTYH -001- 42 BSA PAPEROFF
0014730 43 RETURN TTY_PF
0014730 06 003671 156443 ----- TTYTBL -001- 44 BTSAGN TTY_PF
```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 248

C01

OVERWRITE MULTISCAN FUNCTION

0:32:20 2/06/81 ****

OVERWRITE PROGRAM PATCH AREA

CNRU*L W77D

0014731
0014731

01 DDELETE NOTE 1
02 BSS 100
03 OWPATCH
04 DINSERT NOTE * DO .OWPATCH I=1,100

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 249

RESIDENT TTY REQUEST ROUTINES

0:32:20 2/06/81 ****

CNRUTL

W77D

0007302

01 NRPRES CSECT
 02 # THIS CSECT CONTAINS THE RESIDENT PROGRAM WHICH TRIGGERS
 03 # THE CALLING IN OF A PARTICULAR NON RESIDENT PROGRAM
 04 # FOR UTILITIES ONLY

0007302

08 ALWTAPE # TAPE UTILITY PROGRAM
 09 R3 =
 0007302 07 000000 103062 ----- -004- 10 LN TUUTIL
 0007303 07 000001 053041 ----- 0007344 11 B R3,TUUTIL
 REQMERGE

0007304

15 ALWOW # OVERWRITE PROGRAM
 16 TBN R7,S(UCL)
 0007304 07 000002 124174 ----- TTYTBL 17 IF - CF THEN RGBEGIN
 0007305 07 000003 054006 ----- 0007313 -002- 18 BC IFS3291
 0007306 07 000004 030400 043026 CTSD 19 LL RO,SYSTATE
 0007310 07 000006 024000 ----- CBLM 20 TBN RO,S(OFL_STBY)
 0007311 07 000007 054002 ----- 0007313 -002- 21 IF - CF THEN RETURN TTY_NG
 0007312 07 000010 056447 ----- TTYTBL -003- 22 BC IFS3293
 0007313 -002- 23 BTSAGN TTY_NG
 0007313 -002- 24 IFS3293
 0007313 -001- 25 RGEND
 0007313 07 000011 103061 ----- -004- 26 IFS3291
 0007314 07 000012 053030 ----- 0007344 27 R3 =
 28 LN OWP
 29 B R3,OWPG
 REQMERGE

0007315

33 DMPREGOF # OFFLINE REGISTER DUMP
 34 R3 =
 0007315 07 000013 103063 ----- -004- 35 LN OFLREGDMP
 0007316 07 000014 053026 ----- 0007344 36 B R3,OFLREGDMP
 REQMERGE

0007317

40 ALWORD # OFFLINE ORDER UTILITY PROGRAM
 41 R3 =
 0007317 07 000015 103064 ----- -004- 42 LN ORDUTL
 0007320 07 000016 053024 ----- 0007344 43 B R3,ORDUTL
 REQMERGE

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 250

RESIDENT TTY REQUEST ROUTINES

0:32:20 2/06/81 ****

CNRUTL W77D

```

0007321          01 ALWDL          # DATA LINK PROGRAM
0007321 07 000017 103065 ----- 02 R3 =          DLPG
0007322 07 000020 053022 ----- 0007344 -004- 03 LN          R3,DLPG
          04 B          REQMERGE

0007323          08 CMPRMS          # MAIN STORE COMPARE PROGRAM
          09 R3 =          CIPRPG
0007323 07 000021 103066 ----- -004- 10 LN          R3,CMPRPG
0007324          11 CALL          ACTMSF          # ANY MSF'S IN PROGRESS ?
0007324 07 000022 037020 003165 CBLM -001- 12 BSA          ACTMSF
0007326          13 IF          RO = 0 THEN RETURN TTY_RL # MSF MAY BE USING PAGSCR
0007326 07 000024 114000 ----- -002- 14 TZ          RO
0007327 07 000025 054002 ----- 0007331 -001- 15 BC          IFS3317
0007330 07 000026 056446 ----- TTYTBL -002- 16 BTSAGN TTY_RL
0007331          -001- 17 IFS3317
0007331 07 000027 103052 ----- CUTIL 18 LN          R2,CMPRDBF          # CLIENT NUMBER FOR UTILITY REQUEST
0007332 07 000030 010454 ----- 19 RLN          R2,4
0007333          20 CALL          UREQ          # REQUEST DISPLAY BUFFER
0007333 07 000031 037020 133235 CUTIL -001- 21 BSA          UREQ
0007335          22 IF          RO = 0 THEN RETURN TTY_RL
0007335 07 000033 114000 ----- -002- 23 TZ          RO
0007336 07 000034 054002 ----- 0007340 -001- 24 BC          IFS3321
0007337 07 000035 056446 ----- TTYTBL -002- 25 BTSAGN TTY_RL
0007340          -001- 26 IFS3321
0007340 07 000036 131400 043102 CTSD 27 LAL          RO,PAGSCR,RA1
0007342          28 CALL          ST2_13          # SAVE INPUT REGISTERS DURING PAGE-IN
0007342 07 000040 037020 111003 CSYSUB -001- 29 BSA          ST2_13

0007344          33 REQMERGE
0007344 07 000042 103441 000007 BLMA -004- 34 R2 =          A.OFLUTIL
0007346          35 LI          R2,OFLUTIL
0007346 07 000044 037020 003031 CBLM -001- 36 CALL          MSFREQN
0007350          37 BSA          MSFREQN
0007350          38 IF          CF THEN RETURN TTY_RL
0007350 07 000046 155002 ----- 0007352 -002- 39 BNC          IFS3331
0007351 07 000047 056446 ----- TTYTBL -003- 40 BTSAGN TTY_RL
0007352          -002- 41 IFS3331
0007352 07 000050 134460 043177 CTSD 42 STL          R3,OFLUCTL
0007354          43 RETURN          TTY_PF
0007354 07 000052 056443 ----- TTYTBL -001- 44 BTSAGN TTY_PF

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 251

CNRUTL INDEX AND WORD COUNTS

0:32:20 2/06/81 ****

CNRUTL W77D

0007354

01 INDEXGEN

	SECTION TITLE	ADDRESS	WORD COUNT
-001- 05 #			
-001- 06 #	NONRESIDENT UTILITY PROGRAM MONITOR	000000	21
-001- 07 #	NONRESIDENT UTILITY TEMPORARY STORE DEFINITION	000000	522
-001- 08 #	TAPE UTILITY MULTISCAN FUNCTION	000000	1693
-001- 09 #	TAPE UTILITY ADMINISTRATIVE CONTROL	000000	52
-001- 10 #	TAPE UTILITY TTY INPUT MESSAGE PROCESSING ROUTINES	000064	279
-001- 11 #	TAPE UTILITY MONITOR ROUTINES	000513	1117
-001- 12 #	TAPE UTILITY SUBROUTINES	002650	75
-001- 13 #	TAPE UTILITY ABORT FUNCTION	002763	70
-001- 14 #	TAPE UTILITY PATCH AREA	003071	100
-001- 15 #	OFF-LINE REGISTER DUMP MULTISCAN FUNCTION	000000	169
-001- 16 #	COMPARE MAIN STORE MULTISCAN FUNCTION	000000	292
-001- 17 #	MAIN FUNCTION	000000	247
-001- 18 #	PATCH AREA	000367	45
-001- 19 #	OVERWRITE MULTISCAN FUNCTION	000000	2078
-001- 20 #	TTY CATALOG TABLE	000444	0
-001- 21 #	ADMINISTRATIVE CONTROL	000000	83
-001- 22 #	INPUT GENERIC IDENTIFIER	000123	10
-001- 23 #	INPUT ISSUE IDENTIFIER	000135	10
-001- 24 #	INPUT OVERWRITE DATA	000147	189
-001- 25 #	INPUT OVERWRITE	000444	108
-001- 26 #	OUTPUT OVERWRITE BUFFER	000620	135
-001- 27 #	CHANGE OVERWRITE STATUS	001027	78
-001- 28 #	LOAD OR VERIFY OVERWRITE	001145	234
-001- 29 #	INITIALIZE, UPDATE, OR OUTPUT THE OVERWRITE FILE	001517	210
-001- 30 #	STOP THE OVERWRITE FUNCTION	002041	12
-001- 31 #	HASHSUM FUNCTION DESCRIPTION	002055	0
-001- 32 #	RESIDENT GENERIC AND TRANSLATION DATA HASHSUMS	002055	155
-001- 33 #	NONRESIDENT GENERIC AND BOOTSTRAP HASHSUMS	002310	189
-001- 34 #	UPDATE AND VERIFY HASHSUM FUNCTIONS	002605	131
-001- 35 #	SEARCH OVERWRITE FILE--OW PROCEDURE	003010	40
-001- 36 #	READ ONE RECORD FROM THE OVERWRITE FILE--OW PROCEDURE	003060	57
-001- 37 #	APPEND RECORD TO END OF OVERWRITE FILE--OW PROCEDURE	003151	75
-001- 38 #	SEARCH TAPE BUFFER FOR A PARTICULAR ADDRESS--SUBROUTINE	003264	34
-001- 39 #	CALCULATE HASHSUM OVER NONRESIDENT PROGRAM DATA	003326	38
-001- 40 #	CHECK NUMBER ALGORITHM--SUBROUTINE	003374	86
-001- 41 #	MISCELLANEOUS SUBROUTINES	003522	36
-001- 42 #	SAVE AND EXECUTE PROGRESS MARKS	003566	68
-001- 43 #	OVERWRITE PROGRAM PATCH AREA	003672	100
-001- 44 #	RESIDENT TTY REQUEST ROUTINES	000000	43

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 252

CNRUTL INDEX AND WORD COUNTS

0:32:20 2/06/81 ****

CNRUTL W77D

-001- 01 # THE TOTAL LENGTH OF THIS ASSEMBLY IS 04818

05 # IM/OM SECTION STRIPPED OUT.
06 CNRUTIL MAXSIZE 0,25
07 NRUTS MAXSIZE 0,1012
08 YAPUTL MAXSIZE 0,3235
09 ENTRDPRG MAXSIZE 0,251
10 CMPRPRG MAXSIZE 0,444
11 OWPROG MAXSIZE 0,4036
12 NRPRES MAXSIZE 0,53

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 253

PATCH HISTORY

0:32:20 2/06/81 ****

LISTING OF INDIVIDUAL PATCHES

CNRUTL W77D

	//**/012281/**/**/**	-002- 01	PBEGIN	PROG=CNRUTL	CSECT=TAPUTL	ORG=	TRNO=12281	SERNOB=65021
		02	# THIS	PATCH	WILL	ALLOW	THE	DMP:TAPE
		03	# THE	DMP:TAPE	BY	BLOCK	AND	
		04	DDELETE	NOTE				
0007354	0001054	05	EXND	EQU		0(1054)		
		06		TCEND				
		-001- 07		NOTE	*****			
	//**/012280/**/**/**	-002- 14	PBEGIN	PROG=CNRUTL			TRNO=12280	SERNOB=63241
		15	# THIS	PATCH	ALLOWS	THE	OP:OW	ROUTINE
		16	# ALSO	ZEROS	THE	GENISS	TABLE	ON
		17		TCEND				
0007354		-001- 18		NOTE	*****			
	//**/012364/**/**/**	-002- 25	PBEGIN	PROG=CNRUTL			TRNO=12364	SERNOB=62679
		26	# THIS	PATCH	ALLOWS	HASHSUMS	TO	WORK
		27	# THIS	PATCH	ALSO	CORRECTS	PRINT	OUT
		28		TCEND			OF	ISSID
0007354		-001- 29		NOTE	*****			

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 254

PATCH HISTORY

0:32:20 2/06/81 ****

LISTING OF INDIVIDUAL PATCHES

CNRUTL W77D

```

          **/**/**/012447/**/**/**
0007354 -002- 01  PBEGIN  PROG=CNRUTL          TRNO=12447  SERNOB=61972
          02 # THIS PATCH ALLOWS THE LOD:OMAS TAPE ROUTINE TO WORK
          03 # WHEN BAD PARITY HAS WORDS ARE IN THE ONLINE.
          04  TCEND
          -001- 05  NOTE *****

```

```

          **/**/**/012436/**/**/**
0007354 -002- 12  PBEGIN  PROG=CNRUTL          TRNO=12436  SERNOB=62840
          13 # THIS PATCH ALLOWS THE LABEL DUMP ROUTINE TO WORK CORRECTLY .
          14  TCEND
          -001- 15  NOTE *****

```

```

          **/**/**/012437/**/**/**
0007354 -002- 22  PBEGIN  PROG=CNRUTL          TRNO=12437  SERNOB=63876
          23 # THIS PATCH ALLOWS THE COPY:TAPE ROUTINES TO WORK CORRECTLY.
          24  TCEND
          -001- 25  NOTE *****

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 256

PATCH HISTORY

0:32:20 2/06/81 ****

LISTING OF INDIVIDUAL PATCHES

			CNRUTL	W77D
	//**/012607/**/**/**	-002- 01	PBEGIN PROG=CNRUTL	TRNO=12607 SERNOB=61472
0007354		02 #	THIS PATCH ALLOWS THE SSP DB LITES TO DISPLAY	
		03 #	THE MAS ADDRESSES CORRECTLY	
		04	TCEND	
		-001- 05	NOTE *****	
	//**/012638/**/**/**	-002- 12	PBEGIN PROG=CNRUTL	TRNO=12638 SERNOB=61052
0007354		13 #	CORRECT LINKAGE TO PUBLIC SYMBOLS CHANGED BY CIPL RELOAD	
		14	TCEND	
		-001- 15	NOTE *****	
	//**/012448/**/**/**	-002- 22	PBEGIN PROG=CNRUTL	TRNO=12448 SERNOB=47643
0007354		23 #	THIS PATCH REMOVES UNUSED CODE	
		24	TCEND	
		-001- 25	NOTE *****	

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 257

PATCH HISTORY

0:32:20 2/06/81 ****

LISTING OF INDIVIDUAL PATCHES

CNRUTL W77D

0007354 , **/**/**/011785/**/**/ -002- 01 PBEGIN PROG=CNRUTL TRNO=11785 SERNOB=60877
 02 # ZERO THE OVERWRITE STATUS BEFORE COPYING TO THE OW FILE.
 03 TCEND
 -001- 04 NOTE *****

0007354 **/**/**/012634/**/**/ -002- 11 PBEGIN PROG=CNRUTL TRNO=12634 SERNOB=61245
 12 # FIXES SEVERAL PROBLEMS IN THE COMPARE MAIN STORE PROGRAM.
 13 # CORRECTS REFERENCES TO FLAG REGISTER DURING INITIAL SETUP.
 14 TCEND
 -001- 15 NOTE *****

0007354 **/**/**/012649/**/**/ -002- 22 PBEGIN PROG=CNRUTL TRNO=12649 SERNOB=62271
 23 # THIS PATCH ALLOWS THE FILE COPYING ROUTINE TO WORK CORRECTLY.
 24 TCEND
 -001- 25 NOTE *****

COMMON NONRESIDENT UTILITIES

PR-1C954-50

PATCH HISTORY

0:32:20 2/06/81 ****

LISTING OF INDIVIDUAL PATCHES

CNRUTL W77D

```

0007354  **/**/**/012650/**/**/
-002- 01  PBEGIN  PROG=CNRUTL  TRNO=12650  SERNOB=61994
02 # THIS PATCH ALLOWS THE SEGMENT DUMP ROUTINE TO WORK .
03 TCEND
-001- 04  NOTE  *****

0007354  **/**/**/013054/**/**/
-002- 11  PBEGIN  PROG=CNRUTL  TRNO=13054  SERNOB=48839
12 # REVERSE SUBROUTINES CALLS FOR QOFLCC AND INITOST .
13 # THIS PATCH COORDINATES WITH TC 59698
14 TCEND
-001- 15  NOTE  *****

0007354  **/**/**/013053/**/**/
-002- 22  PBEGIN  PROG=CNRUTL  TRNO=13053  SERNOB=48840
23 # THIS PATCH CHANGES THE REGISTER ASSIGNMENT FOR FOR TTY INPUT MESSAGE LOD:OMAS.
24 # THIS PATCH MUST COORDINATE WITH TC 59472
25 TCEND
-001- 26  NOTE  *****

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 259

PATCH HISTORY

0:32:20 2/06/81 ****

LISTING OF INDIVIDUAL PATCHES

CNRUTL W77D

```

    **/**/**/012651/**/**/
-002- 01      PBEGIN  PROG=CNRUTL          TRNO=12651  SERNOB=59610
    02 # THIS PATCH PUTS THE BEGINNING ADDRESS IN THE PROPER REGISTER
    03 # FOR A HASHSUM CALCULATION.
0007354      04      TCEND
-001- 05      NOTE *****

    **/**/**/012449/**/**/
-002- 12      PBEGIN  PROG=CNRUTL          TRNO=12449  SERNOB=61585
    13 # THIS PATCH ALLOWS THE CHECK NUMBER ALGORITHM SUBROUTINE
    14 # TO WORK CORRECTLY .
0007354      15      TCEND
-001- 16      NOTE *****

    **/**/**/013056/**/**/
-002- 23      PBEGIN  PROG=CNRUTL          TRNO=13056  SERNOB=59358
    24 # CORRECT CODING ERRORS IN OP:HASHNR ROUTINES.
0007354      25      TCEND
-001- 26      NOTE *****

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 260

PATCH HISTORY

0:32:20 2/06/81 ****

LISTING OF INDIVIDUAL PATCHES

CNRUTL W77D

```

**/**/011845/**/**/
-002- 01          PBEGIN  PROG=CNRUTL          TRNO=11845  SERNOB=57238
      02 # PROBLEM:
      03 # PACTION GIVEN WITH TAPEUTIL STOPPED MESSAGE CONFUSING.
      04 # SOLUTION:
      05 # REMOVE PACTION FROM MESSAGE.
0007354      06          TCEND
-001- 07          NOTE *****

```

```

**/**/013591/**/**/
-002- 14          PBEGIN  PROG=CNRUTL          TRNO=13591  SERNOB=57658
      15 # NOTE! THIS PATCH REPLACES CODE IN TC #48840.
      16 # THIS PATCH COORDINATES WITH TC 57432.
      17 # NOTE! TC 57432 MUST BE MAGED TO PERFORM TEST.
      18 # PROBLEM:   TFA #A45
      19 # NO WAY TO LOAD PATCHES FROM THE PATCH FILE INTO
      20 # THE OFFLINE STORE AFTER A LOD:OMAS GENERIC AND TRANSLATION
      21 # HAVE BEEN DONE.
      22 # SOLUTION:
      23 # LOD:OMAS PATCH ROUTINE.LOADS THE PATCH DATA FROM
      24 # THE PATCH FILE INTO THE OFFLINE STORE.
0007354      25          TCEND
-001- 26          NOTE *****

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 262

PATCH HISTORY

0:32:20 2/06/81 ****

LISTING OF INDIVIDUAL PATCHES

CNRUTL W77D

//*/013059/*/*/*/

```

-002- 01      PBEGIN  PROG=CNRUTL      TRNO=13059  SERNOB=56860
02 # PROBLEM:
03 # A NEED TO CLEAN UP AND RESTORE TDCS TO PRE-AUDIT
04 # STATE WHEN AUDIT:TAPE IS ABORTED.
05 # SOLUTION:
06 # RESTORE TAPE STATUS WORD AND ZERO OUT AUDIT FUNCTION CODE.
07      TCEND
-001- 08      NOTE  *****

```

0007354

0007354

15 END

PATCH HISTORY

0:32:20 2/06/81 ****

VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES
74047624	S	.STOP		
0120770	L	XXX1004	81-41	81-36
0121513	L	XXX1011	83-01	82-46
0121047	L	XXX1013	83-12	83-07
0120754	L	XXX1032	87-15	87-10
01 0017165	L	XXX1034	87-30	87-25
01 0020323	L	XXX1044	89-01	88-41
01 0017232	L	XXX1047	89-15	89-10
0121455	L	XXX1059	90-28	90-23
01 0017274	L	XXX1062	90-39	90-34
0121463	L	XXX1143	99-07	99-02
01 0017546	L	XXX1148	99-19	99-14
0121505	L	XXX1160	100-17	100-12
01 0017564	L	XXX1165	100-29	100-24
01 0020426	L	XXX1186	102-12	102-07
01 0017637	L	XXX1188	102-24	102-19
0115213	L	XXX1223	105-25	105-20
01 0017720	L	XXX1228	105-37	105-32
0121367	L	XXX1234	106-14	106-09
0121602	L	XXX1242	106-37	106-31
0121401	L	XXX1244	107-01	106-42
01 0017723	L	XXX1264	108-22	108-17
0115221	L	XXX1287	110-15	110-10
01 0017775	L	XXX1290	110-25	110-20
0121313	L	XXX1308	111-41	111-36
0114446	L	XXX1327	113-16	113-11
01 0020046	L	XXX1331	113-30	113-25
0121471	L	XXX1346	114-37	114-32
01 0020101	L	XXX1349	115-01	114-42
0114205	L	XXX1405	123-01	122-41
01 0020275	L	XXX1409	123-13	123-07
0113700	L	XXX1426	124-07	124-02
01 0020313	L	XXX1428	124-18	124-13
01 0021143	L	XXX1684	140-24	140-19
01 0021010	L	XXX1686	140-36	140-31
0112033	L	XXX1867	152-03	151-46
0112042	L	XXX1893	153-24	153-18
01 0011152	L	XXX1896	153-37	153-31
0121522	L	XXX2103	168-19	168-13
01 0011566	L	XXX2107	169-01	168-41
01 0014746	L	XXX2151	172-40	172-34
01 0011721	L	XXX2154	173-14	173-08
0111540	L	XXX2509	194-29	194-24
01 0012737	L	XXX2511	194-39	194-34
01 0014774	L	XXX2680	205-39	205-34
01 0013305	L	XXX2682	206-01	205-44
01 0015030	L	XXX2715	209-36	209-31
01 0013371	L	XXX2719	210-01	209-45
01 0015001	L	XXX2807	217-01	216-44

CNRUTL

W77D

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 264

PATCH HISTORY

0:32:20 2/06/81 ****

VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
01	0013602	L XXX2810	217-13	217-08		
01	0014737	L XXX2923	226-15	226-10		
01	0014073	L XXX2928	226-30	226-25		
01	0015023	L XXX3108	235-31	235-26		
01	0014367	L XXX3113	235-42	235-37		
01	0015006	L XXX3119	236-17	236-12		
01	0014400	L XXX3121	236-26	236-21		
01	0015013	L XXX3140	237-34	237-29		
01	0014427	L XXX3144	238-01	237-44		
01	0014731	L XXX3176	242-17	242-12		
01	0014734	L XXX3249	246-30	246-24		
	0121477	L XXX3267	247-42	247-37		
01	0014700	L XXX3270	248-03	247-47		
01	0020436	L XXX440	33-29	33-24		
01	0015402	L XXX442	33-40	33-35		
01	0020444	L XXX449	34-21	34-16		
	0112331	L XXX486	39-10	39-05		
01	0015524	L XXX488	39-25	39-20		
	0112323	L XXX516	41-28	41-23		
01	0015604	L XXX518	41-39	41-34		
01	0020413	L XXX553	44-45	44-40		
01	0015654	L XXX555	45-14	45-09		
	0121352	L XXX583	47-13	47-07		
01	0015672	L XXX588	47-31	47-25		
	0120744	L XXX627	49-27	49-21		
01	0015721	L XXX636	50-03	49-46		
	0112010	L XXX762	59-19	59-14		
01	0016207	L XXX764	59-28	59-23		
	0111741	L XXX786	60-31	60-26		
	0112057	L XXX812	62-37	62-32		
01	0016327	L XXX830	63-29	63-24		
	0121340	L XXX875	68-07	68-02		
01	0016467	L XXX878	68-17	68-12		
	0121345	L XXX885	68-38	68-33		
01	0016475	L XXX887	69-01	68-43		
01	0020340	L XXX896	70-32	70-27		
	0121611	L XXX941	78-23	78-18		
01	0017102	L XXX946	78-34	78-29		
	0121326	L XXX952	79-07	79-02		
	0120763	L XXX994	81-07	81-02		
01	0017151	L XXX996	81-16	81-11		
	0000201	A XBICNT		1-08		
	1	J XBOP		1-08		
	0000002	A XCLAS	LIBNUM=13	1-08		
	0000006	A XMAXWRD	LIBNUM=13	1-08		
'CNRUTL'		T XNAMEX				
	0	J XOWX	1-10			
	0	J XPFTX				
'ALL'		T XSAVREGS				

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 265

PATCH HISTORY

0:32:20 2/06/81 ****

VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
01	0017456	L ABORTTU	96-05	95-40, 97-33, 98-05, 98-27, 98-43, 99-35, 100-49, 101-15, 101-29, 101-32, 101-41		
	0121113	L ABORTTUT	84-29	82-06, 84-23, 84-38		
01	0015615	L ABOVE	42-12	41-44		
		D R ABTB	11-18	W=1 S=0 N=0 CL=1 127-23, 134-29, 150-15		
01	0011047	L ABTCONT	150-26	150-22, 150-23		
01	0016705	L ACEPTCK	75-13	77-47		
		CBLM V ACTMSF	6-08	251-12		
01	0012066	L ACTOW	177-01	5-01		
01	0017007	L ADCNT1	77-09	77-02		
		CSYSUB V ADD16	6-43	204-37		
01	0016700	L ADRETN	74-48	73-21, 75-15, 75-40, 75-46, 87-42, 89-29		
01	0012417	L ADRFND	185-12	185-08		
01	0014334	L ADRNOTFD	233-31	234-12		
01	0021106	L ADVANCE	144-46	137-45		
01	0014670	L ADVPM	247-24	206-39, 218-19, 222-14, 222-29, 245-23		
01	0014700	L ADVPMERGE	248-10	247-26, 247-30		
01	0014663	L ADVPHOUT	247-06	248-26		
01	0014676	L ADVPHTAPE	247-31	167-20, 167-31, 169-11, 172-25, 177-45, 178-43, 179-05, 183-47, 184-18, 184-25, 184-37, 184-48, 186-31, 186-38, 187-18, 187-25, 191-46, 192-05, 192-35, 192-42, 212-20, 213-05, 217-04, 217-25, 220-39, 220-46, 223-49, 224-07, 224-14, 225-39, 229-18, 229-40, 230-26, 231-07, 231-47, 232-12		
01	0014722	L ADVPHTTYIN	248-37	167-05, 191-30, 204-16, 211-44, 216-07, 220-21		
01	0014714	L ADVPHTTYIN2	248-30	172-09, 177-33, 181-25		
01	0014672	L ADVPHTTYOUT	247-27	174-29, 175-48, 193-36, 194-14, 195-18, 197-23		
01	0013531	L ADVSEGMR	214-29	214-01		
01	0020077	L ADVSUBST	114-30	91-27, 104-48, 105-42, 108-38, 109-14, 111-08, 112-24, 114-07		
01	0017315	L ADVSUBST	91-26	80-38, 81-42		
	0000243	A AIXF		LIBNUM=5 132-37		
	0000234	A AKXF		LIBNUM=5 132-38		
	TTYTBL	V ALL	9-06	135-10		
	10	R ALL_OP	18-06	W=1 S=3 N=0 CL=1 135-16, 137-33		
	CIPL	V ALLMAS	6-26	111-27		
	TTYTBL	V ALM	9-07	135-21		
	10	R ALM_OP	18-07	W=1 S=4 N=0 CL=1 135-27, 142-15, 143-27		
	0007321	L ALWDL	251-01	5-02		
	CTAPH	V ALWERRCV	7-20	121-16		
	0007317	L ALWORD	250-40	5-03		
	0007304	L ALWOW	250-15	5-04		
	0007302	L ALWTAPE	250-08	5-05		
	0000161	A ARXF		LIBNUM=5 132-39		
	0000000	A ASC		LIBNUM=13 58-38, 66-38, 80-35, 82-05, 104-46, 167-17, 172-22, 177-42, 183-44, 191-43, 212-17, 216-22, 216-35		
	0000101	A ASC_A		LIBNUM=13 58-35, 66-36, 82-03, 167-15, 172-20, 177-40, 183-41, 191-41, 212-14		
	0000102	A ASC_B		LIBNUM=13 66-37, 104-43, 216-19, 216-33		
	0000303	A ASC_C		LIBNUM=13 80-35, 82-04, 167-16, 172-21, 177-41, 191-42, 220-33, 220-34		
	0000305	A ASC_E		LIBNUM=13 58-36, 66-37, 80-32, 80-33, 183-42, 212-15, 220-34		
	0000107	A ASC_G		LIBNUM=13 58-36, 80-32, 183-42, 212-15		
	0000110	A ASC_H		LIBNUM=13 82-05, 167-17, 172-22, 177-42, 191-43, 220-33		
	0000311	A ASC_I		LIBNUM=13 80-34		
	0000113	A ASC_K		LIBNUM=13 220-35		

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 267

PATCH HISTORY

0:32:20 2/06/81 ****

VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
0000314	A	ASC_L		LIBNUM=13 66-36, 66-38, 81-28		
0000115	A	ASC_M		LIBNUM=13 58-37, 183-43, 212-16, 220-36		
0000116	A	ASC_N		LIBNUM=13 58-38, 80-33, 81-27, 81-28, 183-44, 212-17		
0000317	A	ASC_O		LIBNUM=13 58-37, 104-43, 104-44, 183-43, 212-16, 216-19, 216-20, 216-33, 216-34		
0000120	A	ASC_P		LIBNUM=13 58-35, 82-03, 104-46, 167-15, 172-20, 177-40, 183-41, 191-41, 212-14, 216-22		
0000322	A	ASC_R		LIBNUM=13 80-34, 81-26		
0000123	A	ASC_S		LIBNUM=13 81-27, 104-45, 216-21, 220-35		
0000324	A	ASC_T		LIBNUM=13 81-26, 82-04, 104-44, 104-45, 167-16, 172-21, 177-41, 191-42, 216-20, 216-21, 216-34		
0000125	A	ASC_U		LIBNUM=13 220-36		
0000262	A	ASC_2		LIBNUM=13 216-35		
01 0015622	L	ATCFY	42-26	39-14		
01 0015456	L	AUDITAPE	37-01	5-06		
0000007	A	AUDITFN	29-30	37-23, 121-35		
01 0016631	L	AUDITMON	74-01	29-31		
CTSD	V	AUMASCTL	7-30	106-38		
01 0012210	L	AUTOVEROM	180-49	246-32		
'TUUTCTL+8'	T	AUX1		W=20 S=0 N=10 CL=2 33-10, 47-18, 56-21, 59-04, 61-37, 62-08, 62-12, 70-19, 71-14, 106-17, 107-30, 107-35		
'TUUTCTL+9'	T	AUX2		W=20 S=0 N=11 CL=2 40-22, 42-47, 47-19, 53-31, 54-27, 54-36, 60-07, 70-24, 71-21, 71-30, 94-47, 94-49, 98-44, 99-36, 102-17, 106-21, 107-11, 107-16		
CTVTAB	V	BXCDXBIN		LIBNUM=15 33-17, 36-10, 38-28, 38-34, 48-34, 117-28, 117-38, 117-45, 159-13, 209-22, 210-09, 244-23, 244-27, 244-33		
14	P	BXCDXBINX_XC				
		SYSUB		LIBNUM=15		
TTYTBL	X	BXLK	32-36	32-36, 53-24, 76-35		
TTYTBL	X	BXOOT	46-28	46-28, 209-10		
0000010	A	BACKSP		LIBNUM=13 169-09, 178-41, 184-16, 186-29, 187-16, 192-33, 223-47, 230-24		
0121424	L	BACKX	107-40	106-16		
0121447	L	BACK1	108-12	107-41, 111-43		
0112104	L	BAKGO	63-03	62-38, 62-42, 62-46, 63-01		
0	J	BBX		1-08		
0000015	A	BCD_MI		LIBNUM=10 240-05		
CSYSUB	V	BCDXBIN	6-44			
CBLM	V	BGNPSAU	6-09			
01 0016620	L	BGNWRIT	73-12	73-06, 94-36		
CSYSUB	V	BINXBCD	6-45	34-25, 35-13, 53-11, 59-36, 241-48, 242-04		
'TUUTCTL+1'	T	BKNO		W=20 S=0 N=1 CL=2 37-22, 52-27, 53-07, 58-26, 60-34, 74-39, 75-33, 76-36, 77-04, 77-12, 77-14, 77-24, 77-33, 118-05		
0000000	A	BLKADR		W=13 S=0 N=0 CL=3 LIBNUM=13 34-29, 39-44, 40-04, 59-21, 64-13, 64-24, 77-15, 77-22, 77-35, 89-47, 94-45, 101-33, 101-34, 101-36, 101-37, 102-14, 102-25, 102-36		
7	R	BLKCHGD	16-12	W=1 S=2 N=5 CL=1 181-22, 184-12, 184-42, 185-14, 186-25, 187-12		
CTAPH	V	BLKDATA	7-21	197-36		
MASACS	V	BLKMAX	8-16	40-37, 40-45, 42-44, 64-29, 77-16, 117-40		
01 0016723	L	BLKPOSrst	75-32	76-01		
MASACS	V	BLKSIZE	8-15	53-47, 76-08, 76-26, 235-43		
'I_OBUF+I_OB						
UFD+2+BTLODO						
FS'	T	BOOTLOADADR		112-15		
01 0010006	L	BPAXORG	24-22	24-26, 24-28, 24-30, 24-32, 24-34, 24-36		

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL. ISSUE 05 PAGE 268

PATCH HISTORY

0:32:20 2/06/81 ****

VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W770
01	0015266	L BPAKTUTL	29-07	29-12, 29-15, 29-18, 29-21, 29-24, 29-27, 29-30, 29-33, 29-36, 29-39, 29-42		
	0000342	A BRXF		LIBNUM=5 132-40		
	0000161	A BRXT		LIBNUM=5 109-39		
01	0011154	L BRTBPM	154-06	152-44, 226-02, 226-46, 228-32, 229-48, 230-37, 232-18		
		CIPL		6-27 112-15		
		V BTLDOFNS				
01	0010056	L BUFPATCH	27-03	83-22, 85-24, 85-34		
01	0017605	L BYBLK	101-24	100-02, 100-04		
		O U C				
	TTYTBL	X CXMPR	142-07	142-07, 145-24		
	TTYTBL	X CXNL	178-11	178-11		
	TTYTBL	X CXOMPL	28-28	28-28, 57-11, 91-14, 95-37, 103-12, 130-34, 145-07, 151-32, 245-03, 245-45		
	TTYTBL	X CXOPY	95-35	95-35, 103-10		
	TTYTBL	X CXURR	198-08	198-08		
01	0020445	L CALBXB	34-23	34-09		
01	0014365	L CALCHASHNR	235-23	213-10, 217-30		
01	0014432	L CALCHASHNRFA				
		IL	238-18	237-18, 237-22		
	0000011	A CARCNT	58-35	58-36, 58-37, 58-38, 58-39, 66-36, 66-37, 66-38, 66-39, 80-32, 80-33, 80-34, 80-35, 80-36, 81-26, 81-27, 81-28, 81-29, 82-03, 82-04, 82-05, 82-06, 104-43, 104-44, 104-45, 104-46, 104-47, 167-15, 167-16, 167-17, 167-18, 172-20, 172-21, 172-22, 172-23, 177-40, 177-41, 177-42, 177-43, 183-41, 183-42, 183-43, 183-44, 183-45, 191-41, 191-42, 191-43, 191-44, 212-14, 212-15, 212-16, 212-17, 212-18, 216-19, 216-20, 216-21, 216-22, 216-23, 216-33, 216-34, 216-35, 216-36, 220-33, 220-34, 220-35, 220-36, 220-37		
		'TUCOPYCTL+3				
		T CBKNO	W=20 S=0 N=3 CL=2	40-20, 42-43, 93-20, 95-07, 95-10, 102-42		
01	0017272	L CCONT	90-17	90-12		
		CDATH	6-35	24-35		
01	0017772	L CHECKHALT1	110-01	104-24		
01	0014433	L CHECKNUM	239-43	159-05		
01	0020675	L CHECKTS	137-28	137-23		
01	0012202	L CHGOWFAIL	179-14	178-05, 178-19, 178-36		
01	0017773	L CHKHLTMERGE	110-04	112-49		
	0121127	L CHOOSE	84-44	84-37		
	CBLM	V CK_OST	6-10	113-43, 122-20, 123-26, 150-28		
01	0014110	L CKIOBPTR	227-03	225-42		
01	0016145	L CLEAR	57-17	57-20		
	0000005	A CLOSE	LIBNUM=13	56-45, 90-10, 99-10, 100-20, 105-28, 121-29, 150-20, 218-13, 245-32		
01	0017716	L CLOSEBOOT	105-13	104-11		
01	0017343	L CLOTPU	93-01	92-14, 92-19		
	0114452	L CLR_MNT	113-21	113-18		
	CSYSUB	V CLR_WRDS	6-46			
	CSYSUB	V CLR_16	6-47			
	CTAPH	V CLRMAINT	7-22	113-23, 123-03		
	'L1DATA'	T CLRTAB				
01	0015257	L CLR_X	28-38	28-40		
01	0020163	L CMPCH	119-24	120-13, 120-23		
01	0013305	L CMPRADR	206-02	204-45		
01	0021113	L CMPRCOMPL	145-05	137-44, 144-41		
	CUTIL	V CMPRDBF	8-01	251-18		

COMMON NONRESIDENT UTILITIES

PR-1C954-50

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PATCH HISTORY

0:32:20 2/06/81 ****

VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
01	0020672	L CMPRLOOP	137-25	145-03		
	0007323	L CMPRMAS	251-08	5-07		
	0000000	L CMPRPATCH	147-03			
	0000006	A CMPRPG	24-36	251-10		
01	0020554	L CMPRPROG	1-35	24-37,140-19		
01	0021116	L CMPRSTOP	145-10	134-30,137-11,137-31,140-48,143-19		
	CSYSUB	V CMPR20	6-48	137-04,137-42,202-34,202-47,203-16,203-27,205-11,206-04		
01	0016655	L CMPSTCK	74-26	74-08		
01	0012066	L CNLOW	177-02	5-08		
01	0010000	L CNRUTIL	1-31			
	TTYTBL	V COMP	9-08	135-32		
	10	R COMP_OP	18-08	W=1 S=5 N=0 CL=1 135-38,138-21,139-20		
01	0017547	L COMPADR	99-30	97-14		
01	0016115	L COMPO	56-20	54-22		
01	0016120	L COMPO1	56-24	60-16, 62-10, 69-08		
	0000000	A CONPROK	14-05	W=1 S=14 N=0 CL=3 LIBNUM=13 78-11, 78-12,122-02		
01	0016376	L CONHERE	64-30	64-28		

```

t.<(+18
!S*);
~/
%_>?
:#@'=" ab
cdefghi n<(+
+ jklmnopqr~
x)z=-stuvw
xyz+Lr[≥e012
3456789+J_]z
-(abcdefghi
)jklmno
pqr \ s
tuvwxyz
0123456789
T CONLC LIBNUM=15
01 0016016 L CONOUT 53-37 52-19, 58-20
'n

```

```

z
te<hplx
v$fgs
-al

```

COMMON NONRESIDENT UTILITIES

PR-1C954-50

PATCH HISTORY

0:32:20 2/06/81 ****

VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W770
iX.>k Jo#b'd' ab cdefghi n<(+ + jklmnopqr- x)z=-stuvw xyz+Lr[3e012 3456789+J,j]# -(ABCDEFGH)JKLMNO PQR \ S TUVWXYZ 0123456789						
	T	CONSC		LIBNUM=15		
01	0020226	L	CONTABT	121-26	121-21,121-22	
01	0011333	L	CONTSRCH	161-36	161-28	
01	0015372	L	CONVSEG	33-01	32-28	
01	0017646	L	COPFIN	103-01	97-19	
	0000006	A	COPY		LIBNUM=13	101-08,224-12
01	0017444	L	COPYCMP	95-26	95-02	
01	0015640	L	COPYFILE	44-01	5-09	
	0000010	A	COPYFILEFN	29-33	45-15	
01	0017460	L	COPYFILEMON	97-01	29-34	
	0000011	A	COPYFN	29-36	42-49,102-05	
01	0017577	L	COPYMAC	101-05	97-17	
01	0017317	L	COPYMON	92-01	29-37	
01	0017335	L	COPYSZ	92-29	92-06	
01	0015471	L	COPYTAPE	38-01	5-10	
	TTYTBL	V	CORR	9-09	77-01	
01	0016777	L	CORRCHK	76-49	76-32	
	0111432	L	CPATCH	1-42	39-05, 41-23, 59-14, 60-26, 62-32,151-46,153-18,194-24	
	0112562	L	CPATCH1	1-43	124-02	
	0114107	L	CPATCH2	1-44	113-11,122-41	
	0115073	L	CPATCH3	1-45	105-20,110-10	
	0121236	L	CPATCH7	1-46	47-07, 68-02, 68-33, 78-18, 79-02, 82-46, 90-23, 99-02,100-12,106-09,106-31,111-36,114-32,168-13,247-37	
	0	U	CR			
	0000063	A	CRXF		LIBNUM=5	132-41
01	0017562	L	CTAPEU	100-06	93-04,102-43	
	0	U	CTAPH			
	MASACS	V	CVTINDEX	8-17		
	0	U	D			
	TTYTBL	X	DXMP	53-22	53-22, 59-47, 61-27, 67-14,127-35,129-11,130-31	
01	0020647	L	DEFAULTRAD	136-45	136-40	

COMMON NONRESIDENT UTILITIES

PR-1C954-50

D:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL . ISSUE 05 PAGE 271

PATCH HISTORY

0:32:20 2/06/81 ****

VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
0123456789	T	DELLC		LIBNUM=15		
TTTTBL	V	DETL	9-10	76-31		
0000246	A	DIXF		LIBNUM=5	132-19	
01 0015417	L	DIRDMP	35-03	32-34		
MASACS	V	DIRLOC	8-18	35-11, 97-28		
01 0020157	L	DIRSER	119-19	98-42, 99-34		
MASACS	V	DIRTRK	8-19	35-07, 97-27		
01 0017163	L	DISECT	87-08	80-11		
0000245	A	DKXF		LIBNUM=5	132-20	
00J0005	A	DLPG	24-34	5-11, 251-03		
0000002	A	DMPDFN	29-15	35-18		
01 0016241	L	DMPDNON	61-01	29-16		
0000001	A	DMPFN	29-12	32-41		
0000003	A	DMPLFN	29-18	36-16		
01 0016414	L	DMPLMON	66-01	29-19		
01 0015745	L	DMPMON	52-10	29-13		
0007315	L	DMPREGOF	250-33	5-12		
0000004	A	DMPSFN	29-21	34-33, 56-05		
01 0016157	L	DMPSPON	58-01	29-22		
01 0015345	L	DMPTAPE	32-01	5-13		
0121520	L	DO_MORE	83-05	83-02		
01 0017062	L	DONPO	78-01	77-20		
01 0017223	L	DOTHEM	88-27	89-24		
01 0016563	L	DUMPIT	70-16	69-41		
01 0011161	L	DUMUNLOD	154-17	167-29, 184-46, 192-03, 213-03, 217-23, 220-44, 225-37, 229-16, 229-38		
0001054	A	EXND	254-05	64-18		
TTTTBL	X	EXRASE	47-21	47-21		
TTTTBL	X	EXRR	141-30	141-30, 141-48, 163-11, 187-47, 193-20		
01 0021120	L	ENDCMPR	145-13	145-08		
01 0022611	L	ENTRDPRG	1-34	24-31		
01 0013764	L	ENTRYDONE	222-21	221-38		
01 0012467	L	EOBFND	186-16	185-09		
0000000	A	EOF		W=1 S=15 N=0 CL=3 LIBNUM=13 60-15, 73-16, 77-19, 213-16, 217-36, 233-32, 233-33		
0000006	A	EOH	22-15	W=20 S=0 N=6 CL=3 160-34, 160-35, 170-08, 173-42, 181-28, 230-46		

COMMON NONRESIDENT UTILITIES

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PATCH HISTORY

0:32:20 2/06/81 ****

VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W770
7777777	A	E00WF	15-13	82-40,225-47,228-28,230-33,232-05		
	0	U EOS				
'TUUTCTL+7'	T	ERCT		W=20 S=0 N=7 CL=2 77-10, 78-07		
	0	J ESS2	1-10			
	1	J ESS2E	1-09			
CSYSUB	V	EXCMCH	6-49	109-13		
CSYSUB	V	EXCOFLPG	7-01	112-23		
01 0011123	L	EXCRTBPM	152-32			
01 0014176	L	EXTRABLK	229-33	229-27		
	0	U F				
TTYTBL	X	FXILE	67-17	67-17,103-11		
TTYTBL	X	FXULL	46-41	46-41		
	1	J FIELD	1-09			
01 0014505	L	FIELDLP	241-08	241-43		
01 0017251	L	FINECH	89-42	80-13		
01 0011620	L	FMTONBUFFER	169-44	169-27		
01 0014561	L	FRSTCHK	243-19	156-12,157-12,158-55,166-25,171-26,177-17,180-44,191-11,201-27,209-03,219-42		
	0	121177 L FST_PASS	85-43	85-31		
01 0020102	L	FSTCHK	116-18	30-15, 31-16, 32-24, 37-16, 38-22, 44-17, 46-20		
01 0015672	L	FULONLY	47-32	47-16		
	0	U G				
TTYTBL	X	GXENERIC	48-44	48-44,201-34,219-49		
TTYTBL	X	GXENID	194-08	194-08		
01 0010042	L	GENISS	25-36	TBLSIZ=10 25-38,152-05,156-17,157-17,167-34,192-27,192-28		
01 0011560	L	GENISSLP	168-01	168-20		
01 0023051	L	GETRG	133-01	129-44		
01 0020714	L	GOAHEAD	138-05	137-27		
01 0020201	L	GOBAK	119-48	120-21		
01 0022637	L	GTNXT16	128-12	128-24		
01 0022660	L	GTNXT20	128-29	128-45		
CIPL	V	HASHLEN	6-28	221-35		
0000100	A	HASHLENMAX	15-21	205-09,221-41,221-43,237-10,237-12		
MASACS	V	HASHSUMF	8-20	205-27		
MASACS	V	HASHSUMN	8-21	222-10		
MASACS	V	HASHSUMP	8-22	237-17		
0000065	A	HGXF		LIBNUM=5 132-21,248-21		
0000065	A	HGXT		LIBNUM=5 248-25		
LAYOUT	V	HGAREA	8-10	248-22		
	17	R HLT		W=1 S=5 N=0 CL=1 LIBNUM=5 109-30,110-35		
TTYTBL	X	IXN	163-02	163-02,164-21,174-17,175-22,175-40		
TTYTBL	X	IXNIT	192-19	192-19		
TTYTBL	X	IXSSID	195-12	195-12		
LAYOUT	V	I_OBUF	8-11	54-37, 59-20, 60-14, 61-35, 62-14, 64-04, 67-38, 71-22, 73-15, 76-08, 76-26, 82-16, 82-27, 83-19, 85-05, 87-23, 87-31, 87-37, 88-05, 89-45, 94-43, 108-15, 110-43, 111-18, 112-15, 112-35, 119-23, 167-35, 178-06, 192-16, 193-16, 193-41, 194-30, 213-15, 217-35, 221-07, 225-44, 228-25, 228-35, 229-28, 230-30, 231-15, 232-04, 233-25, 233-32, 235-43, 236-01		
CTAPH	V	I_OBUFD	7-23	82-16, 82-27, 83-19, 85-05, 108-15, 110-43, 111-18, 112-15, 112-35, 167-35, 178-06, 192-16, 193-16, 193-41, 194-30, 221-07, 225-44, 228-25, 228-35, 229-28, 230-30, 231-15, 232-04, 233-25, 236-01		
0000306	A	IBXF		LIBNUM=5 132-22		

COMMON NONRESIDENT UTILITIES

PR-1C954-50

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PATCH HISTORY

0:32:20 2/06/81 ****

VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
01 0017712	L	IDLESTATE	105-01	104-08, 104-10		
01 0016703	L	IDLSTATE	75-06	57-32, 66-07, 66-09, 72-07, 73-07, 74-09, 74-11, 74-13, 74-15, 74-17, 74-19, 74-21, 80-08, 80-10, 96-04, 105-03		
01 0016153	L	IDLSTATE	57-31	52-17, 58-16, 58-18, 61-07		
01 0017454	L	IDLSTATE	96-03	92-07, 92-13, 92-16, 92-18, 97-06, 97-08, 97-11, 97-13, 97-16, 97-18		
'ILLEGAL CON						
DITIONAL IN						
THE IF MACRO 'T IFERROR1						
'DATA > 0 OR						
DATA < 0 IS						
MEANINGLESS						
, USE DATA =						
= 0' T IFERROR2						
'TWO CONSTAN						
TS ARE BEING						
COMPARED IN						
IF MACRO ' T IFERROR3						
'AN ITEM WAS						
COMPARED TO						
SOMETHING O						
THER THAN A						
CONSTANT' T IFERROR4						
'DESTINATION						
OF AN = STA						
TEMENT IS A						
CONSTANT' T IFERROR5						
'ATTEMPTING						
TO SET ITEM						
= TO SOMETHI						
NG OTHER THA						
N A CONSTANT' T IFERROR6						
'ITEM MAY ON						
LY USE THE =						
AND = COND						
ITIONALS' T IFERROR7						
01 0014744	L	IFST1	226-23			
01 0017222	L	IFS1039	88-26	88-24		
01 0017312	L	IFS1081	91-21	91-19		
0121421	L	IFS1236	107-34	106-20		
0121406	L	IFS1238	107-15	106-24		
01 0020020	L	IFS1305	111-28	111-26		
01 0020252	L	IFS1388	122-09	121-37		
01 0020266	L	IFS1394	122-26	122-15		
01 0020266	L	IFS1398	122-24	122-22		
01 0020310	L	IFS1401	123-42	122-32		
01 0020310	L	IFS1419	123-33	123-33		
01 0022624	L	IFS1455	127-44	127-24		
01 0022716	L	IFS1477	129-23	128-03		
01 0020614	L	IFS1588	136-05	136-03		

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 274

PATCH HISTORY

0:32:20 2/06/81 ****

VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
01	0020625	L IFS1591	136-19	136-10		
01	0020625	L IFS1593	136-17	136-13		
01	0020635	L IFS1597	136-31	136-22		
01	0020635	L IFS1599	136-29	136-25		
01	0020653	L IFS1607	136-49	136-44		
01	0020671	L IFS1617	137-22	137-20		
01	0020714	L IFS1622	137-49	137-34		
01	0020714	L IFS1626	137-47	137-39		
01	0020746	L IFS1633	139-02	138-09		
01	0020733	L IFS1638	138-30	138-19		
01	0020733	L IFS1640	138-28	138-22		
01	0020741	L IFS1647	138-40	138-34		
01	0020746	L IFS1654	138-49	138-47		
01	0020776	L IFS1657	140-01	139-08		
01	0020763	L IFS1662	139-29	139-18		
01	0020763	L IFS1664	139-27	139-21		
01	0020771	L IFS1671	139-39	139-33		
01	0020776	L IFS1678	139-48	139-46		
01	0021102	L IFS1688	144-31	140-38		
01	0021031	L IFS1699	141-31	141-29		
01	0021040	L IFS1707	141-49	141-47		
01	0021063	L IFS1721	143-26	142-17		
01	0021054	L IFS1722	142-45	142-20		
01	0021062	L IFS1732	143-18	142-48		
01	0021101	L IFS1743	144-28	143-29		
01	0021073	L IFS1744	144-06	143-32		
01	0021101	L IFS1754	144-26	144-09		
01	0021106	L IFS1764	144-43	144-38		
01	0021112	L IFS1769	145-03	145-01		
01	0021135	L IFS1791	146-22	146-20		
01	0011102	L IFS1813	151-18	150-16		
01	0011067	L IFS1820	150-45	150-32		
01	0011123	L IFS1848	152-25	151-21		
01	0011142	L IFS1879	153-01	152-38		
01	0011154	L IFS1887	154-02	153-07		
01	0011166	L IFS1917	156-16	156-14		
01	0011200	L IFS1927	157-16	157-14		
01	0011212	L IFS1938	159-03	159-01		
01	0011235	L IFS1947	159-32	159-27		
01	0011265	L IFS1951	160-15	159-47		
01	0011264	L IFS1955	160-11	160-07		
01	0011272	L IFS1960	160-22	160-20		
01	0011323	L IFS1965	161-25	161-23		
01	0011341	L IFS1969	161-47	161-31		
01	0011341	L IFS1971	161-45	161-35		
01	0011356	L IFS1987	162-22	162-10		
01	0011356	L IFS1989	162-20	162-14		
01	0011410	L IFS2002	163-15	162-35		
01	0011424	L IFS2022	163-38	163-36		

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0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 275

PATCH HISTORY

0:32:20 2/06/81 ****

VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
01	0011433	L IFS2023	164-03	163-40		
01	0011433	L IFS2025	164-01	163-43		
01	0011451	L IFS2034	164-29	164-12		
01	0011457	L IFS2052	164-39	164-37		
01	0011474	L IFS2060	165-08	165-02		
01	0011507	L IFS2071	166-29	166-27		
01	0011515	L IFS2076	166-38	166-34		
01	0011522	L IFS2081	166-46	166-42		
01	0011572	L IFS2089	169-15	167-25		
	0121536	L IFS2105	168-39	168-34		
01	0011663	L IFS2128	171-34	171-32		
01	0011671	L IFS2133	171-43	171-39		
01	0011676	L IFS2138	172-02	171-47		
01	0011737	L IFS2143	173-35	172-14		
01	0011755	L IFS2161	174-03	174-01		
01	0012027	L IFS2181	175-29	175-11		
01	0012044	L IFS2210	176-05	176-03		
01	0012072	L IFS2231	177-21	177-19		
01	0012100	L IFS2236	177-29	177-27		
01	0012142	L IFS2245	178-16	178-14		
01	0012153	L IFS2250	178-26	178-24		
01	0012164	L IFS2253	178-38	178-34		
01	0012210	L IFS2268	180-48	180-46		
01	0012216	L IFS2273	181-09	181-05		
01	0012223	L IFS2278	181-17	181-13		
01	0012330	L IFS2301	183-18	182-15		
01	0012273	L IFS2303	182-29	182-25		
01	0012303	L IFS2310	182-41	182-34		
01	0012322	L IFS2318	183-11	182-46		
01	0012411	L IFS2328	185-02	183-27		
01	0012360	L IFS2330	184-03	183-35		
01	0012376	L IFS2338	184-31	184-10		
01	0012376	L IFS2341	184-29	184-13		
01	0013417	L IFS2356	210-49	210-47		
01	0012440	L IFS2362	185-32	185-28		
01	0013424	L IFS2365_TC	211-20	211-18		
01	0012445	L IFS2369	185-41	185-37		
01	0012462	L IFS2375	186-10	185-46		
01	0012505	L IFS2385	186-44	186-23		
01	0012505	L IFS2388	186-42	186-26		
01	0012524	L IFS2402	187-31	187-10		
01	0012524	L IFS2405	187-29	187-13		
01	0012550	L IFS2420	188-26	188-02		
01	0012562	L IFS2445	191-15	191-13		
01	0012663	L IFS2461	192-47	192-12		
01	0012645	L IFS2466	192-25	192-23		
01	0012671	L IFS2476	193-10	193-08		
01	0012675	L IFS2481	193-15	193-13		
01	0012703	L IFS2487	193-21	193-19		

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VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W770
01	0012774	L IFS2532	195-46	195-35		
01	0013054	L IFS2537	197-29	196-04		
01	0013054	L IFS2543	197-27	196-10		
01	0013043	L IFS2549	197-06	197-04		
01	0013106	L IFS2586	199-14	199-12		
01	0013113	L IFS2591	199-22	199-20		
01	0013120	L IFS2604	201-31	201-29		
01	0013125	L IFS2609	201-40	201-36		
01	0013132	L IFS2614	201-48	201-44		
01	0013150	L IFS2617	202-18	202-16		
01	0013154	L IFS2621	202-26	202-22		
01	0013200	L IFS2626	203-07	202-29		
01	0013164	L IFS2630	202-38	202-36		
01	0013200	L IFS2633	203-05	202-41		
01	0013200	L IFS2637	203-03	203-01		
01	0013212	L IFS2643	203-21	203-19		
01	0013226	L IFS2646	203-45	203-24		
01	0013261	L IFS2660	205-08	204-28		
01	0013261	L IFS2664	205-06	204-33		
01	0013267	L IFS2675	205-15	205-13		
01	0013276	L IFS2676	205-24	205-22		
01	0013353	L IFS2702	209-07	209-05		
01	0013362	L IFS2710	209-17	209-15		
01	0015034	L IFS2717	209-43	209-39		
01	0013377	L IFS2726	210-19	210-17		
01	0013402	L IFS2729	210-29	210-27		
01	0013407	L IFS2731	210-34	210-32		
01	0013417	L IFS2732	211-07	210-37		
01	0013432	L IFS2743	211-32	211-30		
01	0013436	L IFS2745	211-41	211-39		
01	0013467	L IFS2757	212-39	212-37		
01	0013531	L IFS2773	214-27	213-35		
01	0013521	L IFS2776	214-08	213-38		
01	0013565	L IFS2795	216-25	216-14		
01	0013600	L IFS2800	216-38	216-28		
01	0013650	L IFS2836	219-46	219-44		
01	0013655	L IFS2841	220-06	220-02		
01	0013662	L IFS2846	220-14	220-10		
01	0013722	L IFS2861	221-21	221-15		
01	0013742	L IFS2867	221-44	221-42		
01	0013751	L IFS2870	222-04	222-02		
01	0013763	L IFS2871	222-18	222-06		
01	0013770	L IFS2875	222-33	222-26		
01	0014015	L IFS2885	223-29	222-48		
01	0014015	L IFS2886	223-27	223-02		
01	0014004	L IFS2888	223-11	223-09		
01	0014022	L IFS2895	223-36	223-34		
01	0014071	L IFS2918	226-03	225-48		
01	0014744	L IFS2925	226-22	226-18		

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VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	M77D
01	0014107	L IFS2933	226-49	226-39		
01	0014107	L IFS2935	226-47	226-43		
01	0014132	L IFS2952	228-33	228-29		
01	0014147	L IFS2961	228-47	228-45		
01	0014165	L IFS2989	229-23	229-11		
01	0014204	L IFS3003	229-44	229-32		
01	0014227	L IFS3019	230-38	230-34		
01	0014250	L IFS3028	231-11	230-47		
01	0014265	L IFS3041	231-25	231-23		
01	0014305	L IFS3069	232-03	231-39		
01	0014342	L IFS3090	233-41	233-30		
01	0014341	L IFS3092	233-37	233-35		
01	0014356	L IFS3096	234-08	234-06		
01	0014405	L IFS3123	236-45	236-30		
01	0014414	L IFS3133	237-13	237-11		
01	0015016	L IFS3142	237-39	237-37		
01	0015021	L IFS3143	237-43	237-41		
01	0014440	L IFS3161	240-08	240-06		
01	0014447	L IFS3165	240-17	240-15		
01	0014456	L IFS3169	240-26	240-24		
01	0014567	L IFS3189	243-26	243-24		
01	0014575	L IFS3192	243-33	243-31		
01	0014663	L IFS3227	247-04	245-43		
01	0014663	L IFS3232	247-02	245-47		
01	0014657	L IFS3238	246-10	246-08		
01	0014722	L IFS3278	248-36	248-34		
	0007313	L IFS3291	250-26	250-18		
	0007313	L IFS3293	250-24	250-22		
	0007331	L IFS3317	251-17	251-15		
	0007340	L IFS3321	251-26	251-24		
	0007352	L IFS3331	251-41	251-39		
01	0015722	L IFS494	50-11	49-44		
01	0015676	L IFS573	47-44	46-34		
01	0015733	L IFS601	50-25	48-09		
01	0015730	L IFS640	50-19	50-17		
	0120772	L IFS712	81-43	81-08		
01	0016113	L IFS718	56-08	56-06		
01	0017146	L IFS988	80-40	80-26		
	0000207	A IMXF	LIBNUM=5	132-23		
01	0016520	L INCR	69-27	69-13, 69-15, 69-17, 69-19, 69-21, 69-23, 69-25		
	1	R INDEX	15-01	128-11, 128-13, 128-23, 128-24, 128-28, 128-30, 128-40, 128-45		
	0000050	A INDEXCNTR	23-31	24-40, 27-06, 28-01, 29-44, 51-15, 115-10, 120-24, 125-03, 126-05, 133-13, 134-01, 146-40, 147-05, 148-01, 149-29, 155-45, 156-23, 157-23, 165-17, 170-26, 176-31, 179-16, 189-03, 198-19, 199-25, 200-15, 207-03, 218-31, 224-22, 227-11, 229-49, 232-19, 234-18, 238-26, 242-32, 244-39, 248-45, 249-05, 252-02		

*NONRESIDENT
UTILITY PRO
GRAM MONITOR 'T INDEXTITLE1
'OFF-LINE RE
GISTER DUMP

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VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
MULTISCAN FU 'NCTION'	T	INDEXTITLE10				
'COMPARE MAI N STORE MULT ISCAN FUNCTI ON'	T	INDEXTITLE11				
'MAIN FUNCTI ON'	T	INDEXTITLE12				
'PATCH AREA'	T	INDEXTITLE13				
'OVERWRITE M ULTISCAN FUN CTION'	T	INDEXTITLE14				
'TTY CATALOG TABLE'	T	INDEXTITLE15				
'ADMINISTRAT IVE CONTROL'	T	INDEXTITLE16				
'INPUT GENER IC IDENTIFIE R'	T	INDEXTITLE17				
'INPUT ISSUE IDENTIFIER'	T	INDEXTITLE18				
'INPUT OVERW RITE DATA'	T	INDEXTITLE19				
'NONRESIDENT UTILITY TEM PORARY STORE DEFINITION'	T	INDEXTITLE2				
'INPUT OVERW RITE'	T	INDEXTITLE20				
'OUTPUT OVER WRITE BUFFER'	T	INDEXTITLE21				
'CHANGE OVER WRITE STATUS'	T	INDEXTITLE22				
'LOAD OR VER IFY OVERWRI TE'	T	INDEXTITLE23				
'INITIALIZE, UPDATE, OR OUTPUT THE O VERWRITE FIL E'	T	INDEXTITLE24				
'STOP THE OV ERWRITE FUNC TION'	T	INDEXTITLE25				
'HASHSUM FUN CTION DESCI PTION'	T	INDEXTITLE26				
'RESIDENT GE NERIC AND TR						

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VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
ANSLATION DA TA HASHSUMS'	T	INDEXTITLE27				
'NONRESIDENT GENERIC AND BOOTSTRAP H ASHSUMS'	T	INDEXTITLE28				
'UPDATE AND VERIFY HASHS UM FUNCTIONS'	T	INDEXTITLE29				
'TAPE UTILIT Y MULTISCAN FUNCTION'	T	INDEXTITLE3				
'SEARCH OVER WRITE FILE-- OW PROCEDURE'	T	INDEXTITLE30				
'READ ONE RE CORD FROM TH E OVERWRITE FILE--OW PRO CEDURE'	T	INDEXTITLE31				
'APPEND RECO RD TO END OF OVERWRITE F ILE--OW PROC EDURE'	T	INDEXTITLE32				
'SEARCH TAPE BUFFER FOR A PARTICULAR ADDRESS--SU BROUTINE'	T	INDEXTITLE33				
'CALCULATE H ASHSUM OVER NONRESIDENT PROGRAM DATA'	T	INDEXTITLE34				
'CHECK NUMBE R ALGORITHM- SUBROUTINE'	T	INDEXTITLE35				
'MISCELLANEO US SUBROUTIN ES'	T	INDEXTITLE36				
'SAVE AND EX ECUTE PROGRE SS MARKS'	T	INDEXTITLE37				
'OVERWRITE P ROGRAM PATCH AREA'	T	INDEXTITLE38				
'RESIDENT TT Y REQUEST RO UTINES'	T	INDEXTITLE39				

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0:32:20 2/06/81 ****

VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
'TAPE UTILIT Y ADMINISTRA TIVE CONTROL'	T	INDEXTITLE4				
'TAPE UTILIT Y TTY INPUT MESSAGE PROC ESSING ROUTI NES'	T	INDEXTITLE5				
'TAPE UTILIT Y MONITOR RO UTINES'	T	INDEXTITLE6				
'TAPE UTILIT Y SUBROUTINE S'	T	INDEXTITLE7				
'TAPE UTILIT Y ABORT FUNC TION'	T	INDEXTITLE8				
'TAPE UTILIT Y PATCH AREA'	T	INDEXTITLE9				
0000005	A	INFN	29-24	30-20		
01 0011162	L	INGENID	156-01	5-14		
CTAPH	V	INHERRCV	7-24	28-32		
01 0011174	L	INISSID	157-01	5-15		
CSYSUB	V	INIT_OCC	7-02	123-20,128-47		
CSYSUB	V	INITOST	7-03	80-23,108-14,109-05,113-39		
01 0012556	L	INITOWFI	190-02	5-16		
CTAPH	V	INITTAPE	7-25	123-05		
01 0016602	L	INMON	72-01	29-25		
01 0011503	L	INOW	166-01	5-17		
01 0011523	L	INOWCONT	167-01	166-36,166-44		
01 0011206	L	INOWDATA	158-01	5-18		
01 0011374	L	INOWDATAERR	162-42	163-13		
01 0011404	L	INOWDATANG	163-09	159-08		
01 0011605	L	INOWFAIL	169-28	168-06,168-36,169-25		
01 0011433	L	INSERTDATA	164-04	161-01,163-24		
01 0015316	L	INTAPE	30-01	5-19		
13	R	IOBNDX	27-01	82-15, 82-25, 82-28, 82-31, 83-21, 83-27, 83-39, 85-02, 85-06, 85-13		
3	R	IOBPTR	16-76	W=20 S=0 N=1 CL=1 174-37,176-07,178-07,195-23,225-28,225-45,226-19,227-02,227-05,227-09,228-26,228-36,228-41,229-04,229-13,229-25,229-29,229-35,230-31,230-42,230-49,231-01,231-16,231-19,231-31,231-37,231-41,232-06,233-24,233-26		
0001472	A	IPL		LIBNUM=5 109-40		
0000213	A	ISXF		LIBNUM=5 132-24		
0121025	L	IS_EOOWF	82-26	82-21		
0121527	L	ISSLP	168-29	168-35		
CTAPH	V	JAMTU	7-26	93-27, 94-23, 94-35		
	O	U				
TTYT8L	X	LXABEL	32-30	32-30, 67-16		
TTYT8L	X	LXLENGTH	197-40	197-40		

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VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
TTYTBL	X	LXOD	91-12	91-12,182-31,184-07,185-34,186-20,187-07,245-41		
CTVTAB	V	LXPMRY		LIBNUM=15 55-15, 55-38, 56-30, 63-14, 64-40,130-08,130-25,131-03,175-17,175-35,176-21,194-03,195-07,197-12,198-03		
	14	P LXPMRYX_XTTY				
		APP		LIBNUM=15		
01 0015437	L	LABDMP	36-01	32-31		
0121065	L	LARGER	83-34	83-32		
'TUCOPYCTL+8						
	T	LASBLK		W=20 S=0 N=10 CL=2 40-47, 42-45, 94-44, 98-45, 99-41,102-15		
0000007	A	LASTBLK		W=13 S=0 N=7 CL=3 LIBNUM=13 89-46		
01 0022757	L	LASTLNK	130-19	129-49		
0121147	L	LD_OMAS	85-20	84-46		
0121212	L	LD_OS_LP	86-10	86-25		
0000115	A	LDMAR		LIBNUM=5 109-40		
0000231	A	LDMCHB		LIBNUM=5 109-28,109-30		
0000035	A	LDMIRL		LIBNUM=5 109-29,109-31,109-39		
01 0016477	L	LDRGS	69-09	69-38		
MASACS	V	LDWORD	8-23			
'TUCOPYCTL+7						
	T	LENGTH		W=20 S=0 N=7 CL=2		
'TUUTCTL+3'	T	LENO		W=20 S=0 N=3 CL=2 47-33, 50-14, 70-18, 71-13, 74-38, 78-10, 80-24, 80-37, 80-41, 81-30, 81-44, 82-07, 82-08, 82-38, 85-25, 85-35, 87-21, 91-17,106-15,111-24,113-17,121-38		
	5	R LENOB	27-02	85-37, 85-38, 85-40, 85-45, 85-46, 86-25		
TTYAPP	V	LINKRDY	8-44	53-41, 62-03, 63-47, 68-10,129-29,153-10		
'PAGSCR+0'	T	LINKWRD		W=20 S=0 N=0 CL=2 129-17,129-27,129-45		
'TUUTCTL+4'	T	LNKS		W=20 S=0 N=4 CL=2 53-28, 53-39, 55-07, 55-33, 56-25, 60-04, 61-39, 62-01, 63-08, 63-45, 64-35, 67-21, 67-41, 70-43, 76-09, 76-27		
CUTIL	V	LOADDB	8-02	146-35		
0121013	L	LOD_CON	82-12	84-47		
01 0015657	L	LODOMAS	46-01	5-20		
01 0012204	L	LODOW	180-01	5-21		
0000005	A	LOGBLK		W=13 S=0 N=5 CL=3 LIBNUM=13 75-39, 77-26		
0000013	A	LOMASBTFN	29-42	47-39,122-31		
01 0017656	L	LOMASBTMON	104-01	29-43		
01 0017275	L	LOMASCOMPL	91-01	81-45, 83-04,113-44,114-22		
0000012	A	LOMASFN	29-39	50-20,122-14		
01 0017115	L	LOMASMON	80-01	29-40		
'R0'	T	LONAM_ABTB				
'R8'	T	LONAM_ALL_OP				
'R8'	T	LONAM_ALM_OP				
'TUUTCTL'	T	LONAM_AUX1				
'TUUTCTL'	T	LONAM_AUX2				
'TUUTCTL'	T	LONAM_BKNO				
'R2'	T	LONAM_BLKCHG				
	D					
'TUCOPYCTL'	T	LONAM_CBKNO				
'R8'	T	LONAM_COMP_0				
	P					
'TUSTAT'	T	LONAM_COMPRO				

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VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
				K		
				LIBNUM=13		
'OWBUF'	T	LONAM_EOH				
'TUUTCTL'	T	LONAM_ERCT				
'R2'	T	LONAM_IOBPTR				
'TUCOPYCTL'	T	LONAM_LASBLK				
'TUCOPYCTL'	T	LONAM_LENGTH				
'TUUTCTL'	T	LONAM_LENO				
'PAGSCR'	T	LONAM_LINKWR				
				D		
'TUUTCTL'	T	LONAM_LNKS				
'TUCOPYCTL'	T	LONAM_MBKNO				
'R2'	T	LONAM_NEW_OP				
'ORGBLK'	T	LONAM_NEWDH				
'ORGBLK'	T	LONAM_NEWDL				
'R2'	T	LONAM_NOBGN				
'R2'	T	LONAM_NOLAST				
'ORGBLK'	T	LONAM_OBLKAD				
				R		
'ORGBLK'	T	LONAM_OBLKLG				
'ORGBLK'	T	LONAM_OBLKSE				
				G		
'R8'	T	LONAM_OFF_CO				
				N		
'R8'	T	LONAM_OFL_ER				
				R		
'R1'	T	LONAM_OFLUNO				
'ORGBLK'	T	LONAM_OLDDH				
'ORGBLK'	T	LONAM_OLDDL				
'R8'	T	LONAM_ON_CON				
'R8'	T	LONAM_ON_OFF				
'R8'	T	LONAM_ONL_ER				
				R		
'R2'	T	LONAM_OWBPTR				
'R2'	T	LONAM_OWFILS				
				W		
'OWBUF'	T	LONAM_OWNO				
'R2'	T	LONAM_OWNUM				
'OWBUF'	T	LONAM_OWSTAT				
'OWBUF'	T	LONAM_OWTLEN				
'OWBUF'	T	LONAM_OWTYPE				
'R0'	T	LONAM_PGDATA				
'TUSTAT'	T	LONAM_POSOK				
				LIBNUM=13		
'R2'	T	LONAM_PROCPM				
'R2'	T	LONAM_PROCS				
				R		
'TUSTAT'	T	LONAM_PTP				
				LIBNUM=13		
'R0'	T	LONAM_RCRDLG				
'TUSTAT'	T	LONAM_REDON				
				LIBNUM=13		
'PAGSCR'	T	LONAM_RGCOUN				

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VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
		T				
'R2'	T	LONAM_RTBPB				
'TUSTAT'	T	LONAM_SEQERR				
'TUUTCTL'	T	LONAM_SGNO				
'TUUTCTL'	T	LONAM_SUBST				
'R2'	T	LONAM_TAPEAC				
		T				
'TUUTCTL'	T	LONAM_TPNO				
'R2'	T	LONAM_TRN_OP				
'TUSTAT'	T	LONAM_TSTATE	LIBNUM=13			
'R2'	T	LONAM_TTY_OP				
'R2'	T	LONAM_TTYACT				
'R2'	T	LONAM_TTYID1				
'R2'	T	LONAM_TTYLIN				
		K				
'R2'	T	LONAM_TTYVER				
		B				
'R2'	T	LONAM_UCL_OP				
'TUUTCTL'	T	LONAM_UTCTL				
'R8'	T	LONAM_WIDE_O				
		P				
'R0'	T	LONAM_1STB				
TTYAPP	V	LPHRY	55-15 55-38, 56-30, 63-14, 64-40, 70-48, 130-08, 130-25, 131-03, 175-17, 175-35, 176-21, 194-03, 195-07, 197-12, 198-03			
01 0016230	L	LSGBLK	60-13 56-23			
01 0017413	L	LSTCOPYCK	94-40 92-20			
01 0012506	L	LVCOMPL	187-01 182-04			
01 0012224	L	LVOWCONT	181-21 181-07, 181-15			
CSYSUB	V	L2_13	7-06 134-33, 152-35			
CSYSUB	V	L2_5	7-04 172-44			
CSYSUB	V	L2_7	7-05 169-49			
		U M				
TTYTBL	X	MXAS	142-09 142-09, 145-25			
TTYTBL	X	MXATCH	78-27 78-27			
CTVTAB	V	MXOVST	LIBNUM=15 164-48, 192-30, 229-08, 231-35			
14 P		MXOVSTX_XCSY				
		SUB	LIBNUM=15			
CTVTAB	V	MXSFBT	LIBNUM=15 51-12, 199-18			
14 P		MXSFBTX_XCB				
		LM	LIBNUM=15			
MASACS	V	MASCIOSC	8-30 107-49			
'TUCOPYCTL+1	T	MBKNO	W=20 S=0 N=1 CL=2 39-48, 42-42, 92-35, 95-03, 95-06, 95-09, 97-29, 98-01, 102-31			
	3 R	MCHB	LIBNUM=5 110-34, 128-22, 128-39			
0000231	A	MCHBXF	LIBNUM=5 109-29, 109-31			
0000231	A	MCHBXT	LIBNUM=5 132-03, 132-04, 132-05, 132-06, 132-07, 132-08, 132-09, 132-10, 132-11, 132-12, 132-13, 132-14, 132-15, 132-16, 132-17, 132-18, 132-19, 132-20, 132-21, 132-22, 132-23, 132-24, 132-25, 132-26, 132-27, 132-28, 132-29, 132-30, 132-31, 132-32, 132-33, 132-34, 132-37, 132-38, 132-39, 132-40, 132-41, 132-42, 132-43, 132-44			

COMMON NONRESIDENT UTILITIES

PR-1C954-50

0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 284

PATCH HISTORY

0:32:20 2/06/81 ****

VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES
0 R MCHTR				LIBNUM=5 128-14,128-31
TTYAPP V MFAD			8-45	

CNRUTL W77D

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	T	MICODETR		LIBNUM=5	
01 0017747	L	MICROBOOTBL	109-20	109-11,109-21	
01 0017770	L	MICROEND	109-42	109-21	
01 0017247	L	MORAGN	89-36	89-33	
01 0014405	L	MORENR	237-01	238-04	
01 0013730	L	MORERES	221-34	222-19	
01 0017213	L	MOR297	88-15	88-12	
0121073	L	MOV_ST	83-43	83-41	
01 0017177	L	MOVEOVER	88-01	80-12	
CSYSUB	V	MOVST	7-07	83-49	
'3E790260'	T	MRNO			
0000215	A	MSXF		LIBNUM=5 132-25	
0000215	A	MSXT		LIBNUM=5 109-29	
CBLM	V	MSFABT	6-12		
CTSD	V	MSFPROG	7-31	75-34, 93-22	
CBLM	V	MSFREQN	6-13	251-37	
0000311	A	MSTART		LIBNUM=5 109-41	
0000321	A	MSTOP		LIBNUM=5 109-27,128-05	
CTTYH	V	MTTYIDLE	7-41	141-01	
TTYTBL	X	NXEW	181-03	181-03,246-09	
7	R	NEW_OP	16-11	W=1 S=1 N=5 CL=1 181-06,181-14,182-24,185-27,246-04	
0121143	L	NEWBLK	85-12	85-04	
01 0013552	L	NEWBOOTFILE	216-11	218-28	
'ORGBLK+4'	T	NEWDH		W=10 S=10 N=4 CL=2 86-15,175-04,175-05,182-21	
'ORGBLK+3'	T	NEWDL		W=20 S=0 N=3 CL=2 86-16,175-06,182-22,185-30	
01 0014373	L	NEWRECORD	236-03	238-10	

COMMON NONRESIDENT UTILITIES

PR-1C954-50

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PATCH HISTORY

0:32:20 2/06/81 ****

VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
01	0013237	L NEWR10R11	204-23	206-43		
01	0017523	L NEXSTAT	98-06	57-30, 98-26, 101-14		
01	0016151	L NEXSTAT	57-29	52-32, 52-43, 58-45		
01	0013602	L NEXTBLKBOOT	217-19	217-37, 217-40		
01	0013467	L NEXTBLKNR	212-45	213-21		
01	0013726	L NEXTENTRYLP	221-30	223-37		
01	0017263	L NEXTFILE	90-07	89-48, 90-16		
01	0013462	L NEXTSEGMR	212-28	214-34		
01	0020156	L NGBACK	118-08	117-26, 117-32, 117-36, 117-42, 117-47, 118-02		
01	0020101	L NOADVSUBST	115-07	110-33, 110-36, 114-18		
		7 R NOBGN	16-15	W=1 S=5 N=5 CL=1 202-06, 202-28, 203-22, 204-27, 206-46, 209-37, 210-30, 213-36, 214-39		
01	0015262	L NOCLR	29-02	28-35, 77-39		
01	0022740	L NOFLOW	129-42	129-40		
		7 R NOLAST	16-16	W=1 S=6 N=5 CL=1 202-10, 202-21, 203-22, 206-46, 210-15, 210-30, 213-36, 214-39		
01	0016674	L NOOVERIDE	74-42	92-37, 93-32		
	0000360	A NOPXF		LIBNUM=5 132-30, 132-31, 132-32, 132-33, 132-34		
01	0014636	L NOTTYACK	245-21	206-47, 214-45		
	0112341	L NOTIRO	39-18	39-16		
01	0015253	L NOT1ST	28-33	28-17		
	0007302	L NRPRES	1-37			
01	0010000	L NRUBGN	24-15	5-22		
01	0010025	L NRUTS	1-32			
	SEG000	V NUM_SEGS	8-33	210-33, 210-45, 211-16		
	0121435	L NX_ST	108-01	108-08		
01	0017033	L NXB	77-25	77-17		
01	0017435	L NXBLK	95-08	94-46		
	0121145	L NXT_OW	85-15	85-10		
	0121132	L NXT_OWNO	85-01	84-04		
01	0020370	L NXTIM	71-12	71-40		
01	0016600	L NXTIM	71-39	66-17		
	0121163	L NXTORGBLK	85-32	86-09, 86-29		
01	0022772	L NXT16	130-43	129-47		
	0	U 0				
	TTYTBL	X OXFL	127-37	127-37, 129-13, 130-33, 135-04		
	TTYTBL	X OXLD	181-11	181-11, 246-06		
	TTYTBL	X OXMAS	91-13	91-13		
	TTYTBL	X OXNL	135-01	135-01		
	TTYTBL	X OXP	192-09	192-09		
	TTYTBL	X OXW	151-08	151-08, 151-31, 174-18, 197-17		
	TTYTBL	X OXWDATA	163-03	163-03, 164-22, 175-23, 175-41		
'ORGBLK+1'	T	OBLKADR	W=4 S=0 N=1 CL=2	86-05, 86-06, 161-19, 161-20, 162-02, 162-03, 163-32, 163-33, 174-38, 174-39, 182-06, 182-07		
'ORGBLK+0'	T	OBLKLG	W=20 S=0 N=0 CL=2	163-44		
'ORGBLK+1'	T	OBLKSEG	W=14 S=4 N=1 CL=2	86-07, 86-08, 174-47, 174-48, 182-11, 182-12, 183-23, 183-28, 183-32, 187-41, 187-42		
	MASACS	V OBUFLN	8-24	83-26, 85-03, 227-06, 227-09, 228-40, 229-26, 230-41, 231-18, 231-38		
01	0014533	L OCTNEXT	241-36	241-25, 241-28, 241-33		
01	0014507	L OCTNOLP	241-13	241-37		
01	0014525	L OCTNZERO	241-29	241-21		

COMMON NONRESIDENT UTILITIES

PR-1C954-50

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PATCH HISTORY

0:32:20 2/06/81 ****

VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
01 0014520	L	OCTZERO	241-23			
	10 R	OFF_CON	18-05	W=1 S=2 N=0 CL=1 135-05,138-08		
	10 R	OFL_ERR	18-10	W=1 S=7 N=0 CL=1 138-06,139-16,139-25,139-47,140-05,141-45		
	CBLM	V OFL_STBY	6-14	250-20		
'I_OBUF+I_OB						
UFD+2+OFLBTO						
FS'	T	OFLBO0TTBL		108-15,110-43,111-18		
	V	OFLBTOFS	6-29	108-15,110-43,111-18		
	0000003 A	OFLREGDMP	24-30	250-35		
'I_OBUF+I_OB						
UFD+2+SYSTEMO						
FS'	T	OFLSYSTEM		112-35		
	V	OFLUCTL	7-32	24-18, 51-06,116-20,121-31,151-14,199-10,243-22,251-42		
	1 R	OFLUNO	11-04	W=3 S=0 N=0 CL=1 24-19		
	BLMMA	V OFLUTIL	6-01	51-10,199-16,251-35		
01 0015342	L	OKGO	31-26	31-23		
01 0017105	L	OKINS	79-34	78-35		
'ORGBLK+4'	T	OLDDH		W=10 S=0 N=4 CL=2 175-02,185-24		
'ORGBLK+5'	T	OLDDL		W=20 S=0 N=5 CL=2 175-03,182-27,185-25		
	CBLM	V OMASUPD	6-15	150-36		
	10 R	ON_CON	18-04	W=1 S=1 N=0 CL=1 135-02,139-07		
	10 R	ON_OFF	18-03	W=1 S=0 N=0 CL=1 134-46,134-48,136-39,140-27,140-28,140-29		
01 0016464	L	ONCEAGN	67-40	71-25		
	10 R	ONL_ERR	18-09	W=1 S=6 N=0 CL=1 138-06,138-17,138-26,138-48,140-05,141-27		
01 0017675	L	OPENBOOT	104-33	104-07		
01 0016426	L	OPENLF	66-28	66-06		
01 0017125	L	OPENL0K	80-17	80-07		
	CTAPH	V OPENM	100-48	100-48		
01 0017565	L	OPENMAST	100-40	97-15		
01 0016166	L	OPENPM	58-23	58-15		
	CTAPH	V OPENTCB	52-29	52-29, 58-33, 66-34, 74-45, 80-30, 81-24, 82-01, 97-31, 98-03,104-41,167-13,172-18,177-38,183-39,191-39,212-12,216-17,216-31,220-31		
	0000006 A	OPFN	29-27	31-27		
01 0013114	L	OPHASH	201-17	5-23		
01 0013133	L	OPHASHCONT	202-03	201-38,201-46		
01 0013345	L	OPHASHFAIL	207-01	205-28		
01 0013347	L	OPHASHNR	208-38	5-24		
01 0013545	L	OPHASHNRBOOT	216-02	209-11		
01 0013543	L	OPHASHNRFAIL	215-01	212-18,213-11,216-23,216-36,217-31		
01 0013333	L	OPHASHRTB	206-37	206-16		
01 0016613	L	OPMON	73-01	29-28		
	0120775	L OPN_PACH		81-46		
01 0011657	L	OPOW	171-05	5-25		
01 0012036	L	OPOWCONT	175-45	175-27		
01 0011735	L	OPOWFAIL	173-32	173-23,173-27		
01 0012556	L	OPOWFILE	190-01	5-26		
01 0013055	L	OPOWFILECOMP				
	L		197-34	195-28		
01 0013076	L	OPOWFILEFAIL	198-17	193-34		

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PATCH HISTORY

0:32:20 2/06/81 ****

VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES
01	0013074	L OPOWFILEPASS	198-12	192-45
01	0011677	L OPOWGOON	172-06	171-41,171-49
01	0012045	L OPOWTTYDEC	176-06	174-40
01	0011774	L OPOWTTYLP	174-42	176-07
01	0015327	L OPTAPE	31-01	5-27

CNRUTL W77D

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T	OPTR			
COUTIL	V	ORDMSF	6-40	24-33
0000004	A	ORDUTL	24-32	5-28,250-42
0003050	A	ORG_000023	135-07	
0003054	A	ORG_000025	135-18	
0003060	A	ORG_000027	135-29	
0002434	A	ORG_000055	111-42	
0003511	A	ORG_000061	151-41	
0001670	A	ORG_000070	79-08	
0002575	A	ORG_000076	123-02	
0001553	A	ORG_000102	68-08	
0003112	A	ORG_000105	137-06	
0004715	A	ORG_000106	194-30	
0001565	A	ORG_000107	68-39	
0003543	A	ORG_000111	153-13	
0001107	A	ORG_000114	47-14	
0002307	A	ORG_000120	105-26	
0002407	A	ORG_000126	110-16	
0002322	A	ORG_000131	106-15	
0002330	A	ORG_000141	106-26	
0000661	A	ORG_000142	33-07	
0000666	A	ORG_000145	33-19	
0000676	A	ORG_000153	34-04	

COMMON NONRESIDENT UTILITIES

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PATCH HISTORY

0:32:20 2/06/81 ****

VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
0002043	A	ORG_000217	90-29			
0002167	A	ORG_000225	99-08			
0003222	A	ORG_000232	140-15			
0002502	A	ORG_000233	114-38			
0000727	A	ORG_000236	37-26			
0006303	A	ORG_000241	247-43			
0003235	A	ORG_000246	141-10			
0002210	A	ORG_000247	100-18			
0003241	A	ORG_000251	141-23			
0001763	A	ORG_000255	83-02			
0003251	A	ORG_000260	141-41			
0004067	A	ORG_000264	168-20			
0003267	A	ORG_000270	39-01	142-11		
0003301	A	ORG_000300	142-40			
0003314	A	ORG_000307	60-32	143-21		
0003327	A	ORG_000317	40-01	144-01		
0000760	A	ORG_000323	40-12			
0000764	A	ORG_000327	40-26			
0000773	A	ORG_000335	40-40			
0002457	A	ORG_000337	113-17			
0002332	A	ORG_000344	106-38			
0001002	A	ORG_000350	41-19			
0001655	A	ORG_000353	78-24			
0001372	A	ORG_000356	59-20			
0003402	A	ORG_000361	146-24			
0001020	A	ORG_000363	42-09			
0003224	A	ORG_000367	140-25			
0001027	A	ORG_000372	42-33			
0003513	A	ORG_000401	152-04			
0003545	A	ORG_000410	153-25			
0001042	A	ORG_000411	44-20			
0001047	A	ORG_000420	44-36			
0001454	A	ORG_000425	62-38			
0001066	A	ORG_000431	46-24			
0001076	A	ORG_000434	46-36			
0001105	A	ORG_000436	47-02			
0001122	A	ORG_000444	47-46			
0001132	A	ORG_000447	48-11			
0001136	A	ORG_000451	48-23			
0001143	A	ORG_000457	48-39			
0001152	A	ORG_000462	49-03			
0001161	A	ORG_000465	49-16			
0004057	A	ORG_000520	167-37			
0004065	A	ORG_000525	168-08			
0001247	A	ORG_000576	54-01			
0001257	A	ORG_000612	54-24			
0004111	A	ORG_000620	171-02			
0001263	A	ORG_000621	54-39			
0001314	A	ORG_000655	56-01			

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PATCH HISTORY

0:32:20 2/06/81 ****

VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
0004145	A	ORG_000660	172-29			
0001004	A	ORG_000671	41-29			
0000746	A	ORG_000677	39-11			
0004165	A	ORG_000716	174-06			
0001352	A	ORG_000725	58-06			
0001356	A	ORG_000736	58-29			
0001367	A	ORG_000752	59-08			
0001417	A	ORG_001004	60-20			
0001451	A	ORG_001066	62-23			
0002622	A	ORG_001116	124-08			
0001505	A	ORG_001124	64-15			
0001517	A	ORG_001171	66-13			
0001547	A	ORG_001225	67-29			
0001551	A	ORG_001233	67-43			
0001563	A	ORG_001241	68-29			
0004565	A	ORG_001504	188-04			
0004576	A	ORG_001511	188-28			
0001653	A	ORG_001646	78-14			
0001666	A	ORG_001651	78-43			
0004713	A	ORG_001676	194-20			
0001740	A	ORG_001715	80-43			
0001752	A	ORG_001727	81-32			
0002006	A	ORG_001731	87-05			
0004760	A	ORG_001743	196-12			
0001165	A	ORG_001750	49-28	49-29		
0002010	A	ORG_001760	87-16			
0001742	A	ORG_001767	81-08			
0001754	A	ORG_001774	81-42			
0002022	A	ORG_001776	88-37			
0002041	A	ORG_002040	90-19			
0001761	A	ORG_002051	82-42			
0002073	A	ORG_002072	92-09			
0001771	A	ORG_002104	84-08			
0002077	A	ORG_002111	92-45			
0002105	A	ORG_002127	93-29			
0002112	A	ORG_002142	94-02			
0005130	A	ORG_002162	203-29			
0005135	A	ORG_002167	204-01			
0002121	A	ORG_002207	95-12			
0005153	A	ORG_002217	204-41			
0005166	A	ORG_002244	205-30			
0002146	A	ORG_002263	97-39			
0002157	A	ORG_002300	98-23			
0002165	A	ORG_002312	98-48			
0002202	A	ORG_002321	99-38			
0005231	A	ORG_002327	209-26			
0002206	A	ORG_002330	100-08			
0005244	A	ORG_002335	210-12			
0002227	A	ORG_002350	101-11			

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PATCH HISTORY

0:32:20 2/06/81 ****

VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES
0005256	A	ORG_002353	210-39	
0005263	A	ORG_002360	211-11	
0002240	A	ORG_002375	101-44	
0002250	A	ORG_002410	102-33	
0005301	A	ORG_002423	212-25	
0005307	A	ORG_002430	212-42	
0002276	A	ORG_002432	104-13	
0005317	A	ORG_002445	213-18	
0005331	A	ORG_002461	213-42	
0002305	A	ORG_002464	105-16	
0002320	A	ORG_002467	106-05	
0005346	A	ORG_002476	214-36	
0002366	A	ORG_002504	108-48	
0002375	A	ORG_002515	109-17	
0002401	A	ORG_002530	109-36	
0005365	A	ORG_002541	110-06	216-40
0002417	A	ORG_002551	110-39	
0002425	A	ORG_002561	111-13	
0002432	A	ORG_002570	111-32	
0002442	A	ORG_002572	112-10	
0005410	A	ORG_002577	218-15	
0002447	A	ORG_002600	112-29	
0002455	A	ORG_002612	113-07	
0002500	A	ORG_002645	114-27	
0005450	A	ORG_002652	221-04	
0005476	A	ORG_002731	222-35	
0002532	A	ORG_002740	119-34	
0002537	A	ORG_002750	120-04	
0005537	A	ORG_003011	225-25	
0002555	A	ORG_003015	121-44	
0005551	A	ORG_003032	226-05	
0002573	A	ORG_003041	122-36	
0002611	A	ORG_003053	123-28	
0002620	A	ORG_003057	123-47	
0002630	A	ORG_003062	124-26	
0002024	A	ORG_003071	89-02	
0001600	A	ORG_003106	70-33	
0001051	A	ORG_003161	44-46	
0002242	A	ORG_003174	102-13	
0000670	A	ORG_003204	33-30	
0000701	A	ORG_003212	34-22	
0006037	A	ORG_003326	235-20	
0006055	A	ORG_003337	236-08	
0006067	A	ORG_003345	236-38	
0006102	A	ORG_003365	237-24	
0006116	A	ORG_003373	238-15	
0006146	A	ORG_003516	242-07	
0006221	A	ORG_003601	245-27	
0006241	A	ORG_003612	245-49	

CNRUTL

W77D

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PATCH HISTORY

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VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
0006257	A	ORG_003622	246-19			
0006273	A	ORG_003624	247-08			
0006301	A	ORG_003637	247-33			
0006150	A	ORG_003672	242-18			
0006261	A	ORG_003675	246-31			
0005553	A	ORG_003700	226-16			
0004147	A	ORG_003707	172-41			
0005170	A	ORG_003735	205-40			
0005367	A	ORG_003742	217-02			
0006057	A	ORG_003747	236-18			
0006104	A	ORG_003754	237-35			
0006044	A	ORG_003764	235-32			
0005233	A	ORG_003771	209-37			
CBLM	V	OTSUPD	6-16	114-06,114-15		
01 0020367	L	OUTOUT	71-09	71-07		
01 0017731	L	OVERWRDEC	108-36	108-28		
01 0017721	L	OVERWRITE1	106-01	104-22		
01 0020013	L	OVERWRITE2	111-16	104-25		
01 0017724	L	OVERWRLP	108-29	108-37		
16	R	OVLOF	W=1 S=0 N=0	CL=1 LIBNUM=5 109-28		
0000003	A	OVVCLNT	LIBNUM=13	150-20,152-41,167-14,167-29,169-09,172-19,177-39,178-41,179-03,183-40,184-16,184-23,184-35,184-46,186-29,186-36,187-16,187-23,191-40,192-03,192-33,192-40,212-13,213-03,216-18,216-32,217-23,218-13,220-32,220-44,223-47,224-05,224-12,225-37,229-16,229-38,230-24,231-05,231-45,232-10,245-32		
12	R	OW_LEN	27-05	82-28, 82-29, 82-40, 83-31, 83-33, 83-38, 84-03, 84-45		
0000001	A	OWACT	15-15	178-09,178-31		
6	R	OWBNDX	27-04	83-18, 83-23, 83-44, 85-23, 85-37, 85-42, 85-45, 85-49		
2	R	OWBPTR	16-04	W=20 S=0 N=0 CL=1 173-42,174-37,174-44,176-05,176-08,176-12,181-28,181-37,181-45,181-47,182-02,185-17,228-24,228-38,229-06,230-29,231-14,231-33		
01 0010052	L	OWBUFFER	26-28	TBLSIZ=765 26-30,159-49,160-17,160-33,164-11,164-30,170-11,172-49,173-40,174-36,174-43,176-09,177-30,179-08,181-29,181-36,185-16,195-29,228-37,230-39,231-13		
01 0010025	L	OWCTL	25-08	TBLSIZ=14 25-10,151-35,152-33,243-27,247-11,248-38		
0000003	A	OWDEAD	15-16	178-25,226-41		
0121020	L	OWF_END	82-18	86-34		
7	R	OWFILSW	16-17	W=1 S=7 N=5 CL=1 193-04,195-34,195-42,196-03		
0000000	A	OWINACT	15-14	170-09,178-15		
01 0011037	L	OWMSF	150-12	24-27		
0000001	A	OWNO	22-04	W=20 S=0 N=1 CL=3 170-07,173-05,173-41,177-30,196-45,226-31,226-37		
6	R	OWNUM	16-09	W=20 S=0 N=4 CL=1 169-16,170-07,177-30,178-01		
0000000	L	OWPATCH	249-03			
0000001	A	OWPG	24-26	199-11,243-23,250-28		
01 0011037	L	OWPROG	1-36	172-34,205-34,209-31,216-44,226-10,235-26,236-12,237-29,242-12,246-24		
0000005	A	OWSTAT	22-11	W=2 S=0 N=5 CL=3 170-09,173-04,173-43,173-44,178-08,178-09,178-15,178-17,178-25,178-27,178-30,178-31,179-09,196-46,196-47,226-40,226-41		
0000000	A	OWTLEN	22-03	W=20 S=0 N=0 CL=3 170-08,176-09		
0000005	A	OWTYPE	22-12	W=1 S=2 N=5 CL=3 160-01,160-08,160-18,170-09,173-48,178-31,196-08,197-02		
TTYTBL	X	PXATCH	49-34	49-34		
CTVTAB	V	PXMRV	LIBNUM=15	28-22, 53-18, 57-06, 59-43, 61-23, 67-10, 76-41, 79-14, 79-39, 91-08, 95-31, 103-06,124-33,127-31,129-07,142-31,143-10,143-42,144-19,145-20,151-03,151-26,162-47,164-17,		

COMMON NONRESIDENT UTILITIES

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PATCH HISTORY

0:32:20 2/06/81 ****

VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
				174-13,188-12,188-35,193-26,206-29,214-19,218-03,223-18,245-15		
14	P	PXMRYX_XTTYA				
		PP		LIBNUM=15		
0000226	A	PAXF		LIBNUM=5 132-42		
01 0014576	L	PACKDATE	244-14	191-22,195-39		
CTSD	V	PAGSCR	7-33	129-17,129-19,129-27,129-34,129-37,129-45,134-31,251-27		
CTTYH	V	PAPEROFF	7-42	248-42		
CTTYH	V	PAPERON	7-43	170-19		
01 0011272	L	PASSED_CK	160-25	160-03,160-09		
TTYTBL	V	PATCH	9-11			
01 0016076	L	PAUSE	55-29	54-35		
	2	R PGDATA	19-06	W=20 S=0 N=2 CL=1 234-13		
01 0017734	L	PHASEONE	108-42	104-23		
01 0020024	L	PHASETWO	112-13	104-26		
CBLM	V	PKEYM	6-17	106-39,106-39		
TTYAPP	V	PMRY	28-22	53-18, 57-06, 59-43, 61-23, 67-10, 76-41, 79-14, 79-39, 91-08, 95-31,103-06,124-33,127-31,129-07,142-31,143-10,143-42,144-19,145-20,151-03,151-26,162-47,164-17,174-13,188-12,188-35,193-26,206-29,214-19,218-03,223-18,245-15		
01 0016711	L	POSCOMPR	75-22	74-10, 77-08		
01 0017350	L	POSCOPY	93-16	92-15		
01 0016735	L	POSITI	75-41	75-36, 75-38		
0000004	A	POSITION		LIBNUM=13 75-44,184-35		
0000000	A	POSOK	14-06	W=1 S=15 N=0 CL=3 LIBNUM=13 75-35, 75-37		
01 0016712	L	POSREQ	75-26	74-14, 77-36		
01 0017343	L	POSSTD	92-41			
01 0016532	L	PRGS	69-39	69-35		
01 0016535	L	PRGS1	69-42	70-15		
01 0021011	L	PRINTDATA	140-44	140-07,141-02		
01 0015635	L	PRINTIP	42-48	41-07, 41-14, 42-07, 42-23		
01 0013316	L	PRINTOPHASH	206-17	206-14		
01 0013002	L	PRINTOWFILE	196-16	196-07		
01 0013521	L	PRINTSEGHASH	214-11	213-31		
01 0016135	L	PRNTCOMP	57-01	56-47		
	12	R PROCPM	16-23	W=20 S=0 N=10 CL=1 169-18,169-36,173-16,173-25,178-03,195-26,226-01,226-45,228-31,229-47,230-36,232-17		
13	R	PROCSER	16-24	W=20 S=0 N=11 CL=1 181-37,181-40,181-42,181-47,181-48,183-15,185-19,186-13,225-23,226-37,228-26,228-28,228-44,228-46,229-02,229-10,230-31,230-33,230-39,231-22,231-24,231-29		
CIPL	V	PROGBLKS	6-30	221-07		
01 0011766	L	PRTXTORGBLK	174-32	176-14		
0000000	A	PTP	14-03	W=13 S=0 N=0 CL=3 LIBNUM=13		
01 0017103	L	PUTOOS	78-41	78-09		
CBLM	V	QOFLCC	6-18	105-30,109-03		
	O	U R				
TTYTBL	X	RXEG	127-36	127-36,129-12,130-32		
TTYTBL	X	RXEPT	79-09	79-09		
CTVTAB	V	RXEQR		LIBNUM=15 52-40, 56-44, 73-18, 75-11, 75-43, 77-45, 84-12, 90-09, 98-19, 99-09,100-19,101-07,105-27,121-18,121-28,150-19,152-40,167-28,169-08,178-40,179-02,184-15,184-22,184-34,184-45,186-28,186-35,187-15,187-22,192-02,192-32,192-39,213-02,217-22,218-12,220-43,223-46,224-04,224-11,225-36,229-15,229-37,230-23,231-04,231-44,232-09,245-31		

COMMON NONRESIDENT UTILITIES

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PATCH HISTORY

0:32:20 2/06/81 ****

VALUE T NAME DEF/REF ATTRIBUTES AND REFERENCES CNRUTL W77D

14 P RXEQRX_XCTAP
H
TTTTBL X RXMV
0000027 A RARXF
14 P RAO

LIBNUM=15
178-21 178-21
LIBNUM=5 132-43
LIBNUM=3 28-12, 28-39, 29-03, 29-04, 30-21, 31-28, 32-42, 33-10, 34-34, 35-19, 36-15,
36-17, 37-19, 37-20, 37-22, 37-24, 38-42, 39-48, 40-20, 40-22, 40-47, 42-42, 42-43, 42-45,
42-47, 43-01, 44-33, 44-34, 45-05, 45-06, 45-07, 45-20, 47-18, 47-19, 47-33, 47-40, 48-35,
50-14, 50-21, 52-26, 52-27, 53-07, 53-28, 53-31, 53-39, 53-46, 53-48, 54-27, 54-36, 54-44,
55-07, 55-33, 55-47, 56-14, 56-21, 56-25, 57-19, 58-26, 58-27, 59-04, 60-04, 60-07, 60-18,
60-33, 61-17, 61-34, 61-37, 61-39, 62-01, 62-08, 62-12, 62-13, 62-17, 63-08, 63-45, 64-03,
64-07, 64-35, 65-08, 66-31, 67-04, 67-21, 67-41, 68-27, 71-13, 71-14, 71-19, 71-21, 71-27,
71-30, 74-05, 74-06, 74-38, 74-39, 75-29, 75-30, 75-31, 75-33, 76-09, 76-27, 76-30, 76-33,
76-36, 77-03, 77-04, 77-12, 77-14, 77-24, 77-28, 77-29, 77-33, 77-38, 78-03, 78-07, 78-10,
78-25, 80-24, 80-27, 80-37, 80-41, 81-09, 81-30, 81-44, 81-48, 82-07, 82-08, 82-16, 82-27,
82-28, 82-33, 83-03, 83-19, 83-21, 85-05, 85-06, 85-25, 85-35, 86-05, 86-06, 86-13, 86-14,
86-15, 86-16, 86-23, 87-21, 87-31, 88-17, 88-18, 88-23, 88-25, 88-34, 90-01, 90-30, 91-03,
91-17, 92-33, 92-35, 93-20, 93-21, 94-21, 94-32, 94-44, 94-47, 94-49, 95-03, 95-06, 95-07,
95-21, 97-29, 98-01, 98-44, 98-45, 99-36, 99-41, 102-02, 102-04, 102-13, 102-15, 102-17, 102-31,
102-42, 106-15, 106-17, 106-21, 107-11, 107-16, 107-30, 107-35, 108-30, 108-31, 108-34, 110-43, 111-01,
111-03, 111-24, 112-15, 112-21, 112-35, 112-41, 113-17, 116-24, 117-33, 118-05, 119-22, 119-28, 119-44,
120-08, 121-34, 121-38, 121-40, 123-45, 124-09, 124-10, 124-11, 124-19, 128-08, 128-23, 128-25, 128-42,
128-44, 134-41, 134-42, 136-34, 136-35, 136-36, 136-37, 136-41, 136-42, 136-46, 136-47, 137-01, 160-42,
160-43, 164-38, 164-41, 164-42, 165-03, 165-04, 165-05, 165-06, 165-09, 165-10, 165-11, 167-34, 168-02,
168-26, 168-30, 172-49, 173-01, 173-02, 173-04, 173-05, 182-06, 182-07, 182-19, 182-20, 182-21, 182-22,
182-27, 183-13, 185-16, 185-17, 185-21, 185-22, 185-23, 185-24, 185-25, 185-30, 186-12, 192-27, 193-41,
193-42, 193-43, 193-44, 194-30, 194-31, 194-32, 194-40, 195-01, 195-29, 195-36, 195-37, 196-08, 196-45,
196-46, 196-48, 196-49, 197-02, 202-12, 202-13, 202-31, 202-32, 203-11, 203-12, 203-37, 203-38, 204-12,
204-13, 221-07, 221-17, 221-18, 221-19, 221-31, 221-32, 222-38, 228-25, 228-26, 228-35, 228-36, 231-13,
231-14, 236-04, 236-05, 237-36, 237-38
LIBNUM=3 33-05, 34-02, 54-37, 54-42, 55-01, 55-02, 55-03, 55-04, 55-05, 55-06, 55-08,
55-09, 60-14, 61-35, 62-14, 62-15, 62-18, 62-19, 62-20, 62-21, 64-04, 64-05, 64-08, 64-19,
67-38, 67-39, 69-12, 69-14, 69-16, 69-18, 69-20, 69-22, 69-24, 69-26, 70-17, 70-18, 70-19,
70-20, 70-24, 70-43, 70-44, 70-46, 71-05, 71-22, 71-23, 74-04, 74-30, 74-34, 74-35, 74-40,
75-28, 76-11, 77-23, 77-26, 77-30, 77-32, 77-34, 78-02, 78-06, 78-12, 83-22, 83-23, 85-24,
85-34, 85-37, 85-45, 86-05, 86-06, 86-07, 86-13, 86-14, 86-24, 87-23, 88-05, 88-17, 88-18,
88-19, 88-32, 92-04, 100-45, 106-38, 106-39, 107-49, 108-03, 108-15, 108-30, 108-31, 108-32, 109-11,
110-43, 111-01, 111-18, 111-27, 111-30, 111-42, 112-15, 112-21, 112-35, 112-41, 112-46, 119-23, 119-29,
119-45, 119-46, 120-11, 120-22, 121-39, 122-01, 122-02, 128-09, 128-13, 128-26, 128-30, 129-38, 133-03,
133-04, 133-05, 133-06, 133-07, 133-08, 133-09, 133-10, 134-31, 134-43, 134-44, 137-02, 138-15, 138-24,
139-14, 139-23, 141-07, 141-08, 144-49, 145-02, 146-27, 146-28, 151-35, 152-05, 152-33, 156-17, 156-18,
156-19, 156-20, 157-17, 157-18, 157-19, 157-20, 159-09, 159-10, 159-24, 159-38, 159-39, 159-49, 160-01,
160-08, 160-17, 160-18, 160-33, 160-41, 160-42, 160-43, 161-19, 161-20, 162-02, 162-03, 162-36, 162-37,
162-38, 163-20, 163-32, 163-33, 163-44, 164-41, 164-42, 164-43, 167-35, 168-03, 168-28, 169-47, 170-11,
172-42, 173-40, 173-41, 173-43, 173-45, 173-46, 173-48, 174-36, 174-37, 174-38, 174-39, 174-43, 174-44,
175-02, 175-03, 175-04, 175-06, 178-06, 178-07, 178-08, 178-27, 178-30, 179-08, 179-09, 181-29, 181-36,
181-37, 181-47, 182-06, 182-07, 182-11, 182-19, 182-20, 183-14, 183-30, 183-31, 185-39, 186-01, 192-16,
192-17, 192-24, 192-26, 202-12, 202-13, 202-17, 202-23, 202-24, 202-42, 202-43, 202-45, 203-13, 203-14,
204-24, 204-25, 204-38, 204-39, 206-23, 206-24, 212-06, 212-09, 221-02, 221-16, 221-26, 221-27, 221-47,
221-48, 225-44, 225-45, 226-31, 226-40, 228-37, 228-38, 229-28, 229-29, 230-30, 230-31, 230-49, 231-15,

16 P RA1

COMMON NONRESIDENT UTILITIES

PR-1C954-50

PATCH HISTORY

0:32:20 2/06/81 ****

VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
				231-16,232-04,232-06,233-25,233-26,233-43,233-44,234-13,234-14,234-15,236-01,236-04,236-05, 236-06,237-40,237-42,243-27,243-28,247-11,248-15,248-16,248-38,251-27		
				19-04 W=14 S=4 N=0 CL=1 233-27,233-28,236-19,236-27		
01	0020165	L RCDLG		119-27 119-43		
01	0014132	L RDNXTBLK		228-34 229-21		
	0121052	L RDNXTBLK		83-20 82-17		
	MASACS	V RDOPS		8-25 183-01		
01	0014117	L RDOWRCRD		228-23 169-37,195-27		
01	0012753	L RDRCDLP		195-24 197-30		
01	0011607	L RDRECORD		169-33 169-26		
	0000002	A RD1BLK		LIBNUM=13 52-41, 84-13, 98-20,167-29,184-46,192-03,213-03,217-23,220-44,225-37,229-16, 229-38		
01	0015762	L RD1MON		52-36 52-16, 58-17, 61-06, 66-24, 76-12, 91-25, 94-24,105-09		
01	0017313	L RD1MON		91-24 80-09		
01	0016424	L RD1MON		66-23 66-08, 72-06		
01	0017714	L RD1STBLK		105-07 104-09		
01	0017526	L READFC		98-14 97-12		
01	0017526	L READFM		98-13 97-07		
01	0016755	L READOTHER		76-22 74-18		
01	0017400	L READSTD		94-18 92-12		
01	0016744	L REDCOMR		76-05 74-16		
01	0016747	L REDITI		76-10 76-18		
01	0017011	L REDMORE		77-11 74-22, 76-29		
	0000000	A REDON		14-07 W=1 S=16 N=0 CL=3 LIBNUM=13 74-37, 78-12,122-02		
	0121425	L REFRESH		107-44 107-13,107-32		
	0006070	A REFSTOP		15-08 106-40		
	0006060	A REFSTR		15-09 107-25		
01	0010052	L REGBUF		26-01 128-08,128-25,129-38		
01	0017355	L REPOS		93-24		
01	0014630	L REQFAIL		245-06 152-46,153-26,169-29,170-25,173-33,179-15,183-45,189-02,191-44,198-18,207-02,215-02,224-21		
01	0011655	L REQFAIL		170-24 167-18,172-23,174-27,177-43		
	0007344	L REQMERGE		251-33 250-11,250-29,250-36,250-43,251-04		
01	0014625	L REQPASS		245-01 169-40,170-20,173-28,176-30,179-10,187-32,198-13,206-48,214-46,218-30,224-18		
	CTAPH	V REQR		52-40 84-34		
	CSYSUB	V RGCHKADR		7-08		
'PAGSCR+1'		T RGCOUNT		W=20 S=0 N=1 CL=2 129-19,129-34,129-37		
	5	R RGCOUNTR		15-02 129-34,129-35,129-39,129-46,129-48		
' ABORTING M		T RMK_ABTB				
SF'						
' DO NOT SKI						
P TEMPORARY						
STORE'		T RMK_ALL_OP				
' ALARM A MI						
SMATCH'		T RMK_ALM_OP				
' 2 WORDS FO						
R EXTRA STOR						
AGE'		T RMK_AUX1				
'		T RMK_AUX2				
' BLOCK-TRAC						

COMMON NONRESIDENT UTILITIES

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PATCH HISTORY

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VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
' K NUMBER'	T	RMK_BKNO				
' DATA CHANG ED IN THIS T APE BLOCK (L OD:OH)'	T	RMK_BLKCHGD				
' SECOND BLO CK-TRACK NUM BER'	T	RMK_CBKNO				
' READ WITH COMPLEMENT C ORRECT STORE READS'	T	RMK_COMP_OP				
'	T	RMK_COMPROK	LIBNUM=13			
' BEGINNING OF FIRST ORG BLK - N(EOH) IS THE LENG TH OF THE HE ADER'	T	RMK_EOH				
' ERROR COUN T'	T	RMK_ERCT				
' POINTER TO CURRENT POS ITION IN THE INPUT-OUTPU T BUFFER'	T	RMK_IOBPTR				
' LAST BLOCK TO COPY'	T	RMK_LASBLK				
' NUMBER OF BLOCKS TO CO PY'	T	RMK_LENGTH				
' NUMSER OF BLOCKS'	T	RMK_LENO				
' BUFFER FOR TTY LINK POI NTER'	T	RMK_LINKWRD				
' LINK NUMBE R SAVE AREA'	T	RMK_LNKS				
' FIRST BLOC K-TRACK NUMB ER'	T	RMK_MBKNO				
' NEW OPTION WAS REQUEST ED.'	T	RMK_NEW_OP				
' HIGH 8 BIT S OF NEW DAT A'	T	RMK_NEWDH				
' LOW 16 BIT S OF NEW DAT						

COMMON NONRESIDENT UTILITIES

PR-1C954-50

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PATCH HISTORY

0:32:20 2/06/81 ****

VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
A'		T RMK_NEWDL				
' NO BEGINNING ADDRESS SPECIFIED'		T RMK_NOBGN				
' NO LAST ADDRESS SPECIFIED'		T RMK_NOLAST				
' FIRST ADDRESS OF BLOCK'		T RMK_OBLKADR				
' TOTAL NUMBER OF MAS WORDS TO NEXT BLOCK'		T RMK_OBLKLG				
' SEGMENT NUMBER OF BLOCK'		T RMK_OBLKSEG				
' COMPARE OFFLINE TO CONSTANT'		T RMK_OFF_CON				
' OFFLINE PARITY ERROR'		T RMK_OFL_ERR				
' NUMBER IDENTIFIES WHICH OFFLINE UTILITY TO RUN'		T RMK_OFLUNO				
' HIGH 8 BITS OF OLD DATA'		T RMK_OLDDH				
' LOW 16 BITS OF OLD DATA'		T RMK_OLDDL				
' COMPARE ONLINE TO CONSTANT'		T RMK_ON_CON				
' COMPARE ONLINE TO OFFLINE'		T RMK_ON_OFF				
' ONLINE PARITY ERROR'		T RMK_ONL_ERR				
' POINTER TO CURRENT POSITION IN THE OW BUFFER'		T RMK_OWBPTR				
' OWFILE PRINT SWITCH'		T RMK_OWFILSW				
' OW NUMBER'		T RMK_OWNO				
' OW NUMBER IDENTIFIER'		T RMK_OWNUM				
' OW STATUS'		T RMK_OWSTAT				

COMMON NONRESIDENT UTILITIES

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PATCH HISTORY

0:32:20 2/06/81 ****

VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
' TOTAL LENG TH OF OW (IN CLUDES HEADE R, ETC.)'	T	RMK_OWTLEN				
' TYPE OF OW (GENERIC OR TRANSLATION)'	T	RMK_OWTYPE				
' BEGINNING OF DATA, N(P GDATA)=LENGT H OF HEADER'	T	RMK_PGDATA				
'	T	RMK_POSOK		LIBNUM=13		
' 'RETURN AD DRESS' OF A PROCEDURE'	T	RMK_PROCPM				
' SCRATCH RE GISTER FOR U SE BY PROCED URES'	T	RMK_PROCSCR				
'	T	RMK_PTP		LIBNUM=13		
' LENGTH OF RECORD'	T	RMK_RCRDLG				
'	T	RMK_REDON		LIBNUM=13		
' POINTER INT O REGISTER S TORED IN ON- LINE BUFFER'	T	RMK_RGCOUNT				
' OW PROGRES S MARK'	T	RMK_RT BPM				
'	T	RMK_SEQERR				
' POINTER TO IOBUFFER(IN DEX)'	T	RMK_SGNO				
' SUBSTATE I NDEX'	T	RMK_SUBST				
' REQUEST TO TAPE HANDLE R IS ACTIVE'	T	RMK_TAPEACT				
' TAPE NUMBE R'	T	RMK_TPNO				
' REQUEST TY PE (GENERIC OR TRNSLN)'	T	RMK_TRN_OP				
'	T	RMK_TSTATE		LIBNUM=13		
' TTY OPTION WAS REQUEST ED.'	T	RMK_TTY_OP				
' TTY LINKED						

COMMON NONRESIDENT UTILITIES

PR-1C954-50

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VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	#77D
OUTPUT IS A CTIVE'	T	RMK_TTYACT				
' SECOND DICTIONARY WORD OF TTY INPU	T	RMK_TTYID1				
T MESSAGE'	T	RMK_TTYLINK				
' INFORMATIO N FOR TTY LI NKED OUTPUT'	T	RMK_TTYVERB				
' FIRST DICT IONARY WORD OF TTY INPUT MESSAGE'	T	RMK_UCL_OP				
' UNCONDITIO NAL ACT:OW R EQUEST'	T	RMK_UTCTL				
' UTILITY CO NTROL MAJOR STATE'	T	RMK_WIDE_OP				
' WIDE STORE FLAG'	T	RMK_1STB				
' FIRST ENTR Y TO MSF'	T	RMK_1STB				
01 0012066	L	RHVOW	177-03	5-29		
01 0020344	L	RPRNT	70-37	70-23, 70-33		
01 0020350	L	RPRNTIT	70-42	70-36		
10	R	RTBPM	16-19	W=16 S=0 N=6 CL=1		
01 0011160	L	RTBPMORG	154-11	154-07,154-10,167-04,172-08,177-32,181-24,191-29,204-15,211-43,216-06,220-20,226-01,226-45,228-31,229-47,230-36,232-17,243-28,245-33,248-14,248-16,248-17,167-04,169-18,169-36,172-08,173-16,173-25,177-32,178-03,181-24,191-29,195-26,204-15,211-43,216-06,220-20,248-15		
01 0020116	L	RTN	116-29	116-23,116-27		
0121411	L	RTN_LP	107-21	107-39		
01 0011234	L	RTN_NG	159-28	159-19,159-23		
0000261	A	RTNMCHB		LIBNUM=5 128-19,128-36		
0121446	L	RTNNOW	108-09	108-07		
0000223	A	RTNSS		LIBNUM=5 110-18		
01 0023001	L	RTNTBL16	132-01	128-09		
01 0023041	L	RTNTBL20	132-35	128-26		
0	R	RO		LIBNUM=3 11-18, 11-19, 19-04, 19-06, 28-13, 28-15, 28-16, 28-36, 28-39, 29-03, 29-05, 29-06, 30-20, 30-21, 31-20, 31-27, 31-28, 32-41, 32-42, 33-05, 33-11, 33-22, 33-32, 34-02, 34-07, 34-33, 34-34, 35-07, 35-08, 35-09, 35-10, 35-11, 35-18, 35-19, 36-06, 36-07, 36-13, 36-15, 36-16, 36-17, 37-23, 37-24, 38-26, 38-29, 38-32, 38-36, 38-40, 38-41, 38-42, 39-40, 39-41, 40-04, 40-09, 40-21, 40-22, 40-36, 40-37, 40-44, 40-45, 41-11, 41-13, 41-42, 41-43, 41-48, 41-49, 42-15, 42-16, 42-36, 42-42, 42-43, 42-46, 42-47, 42-49, 43-01, 44-24, 44-48, 45-03, 45-05, 45-15, 45-20, 47-17, 47-18, 47-19, 48-27, 48-35, 48-36, 51-06, 51-07, 51-09, 51-10, 52-26, 52-42, 53-07, 53-08, 53-09, 53-28, 53-39, 53-42, 53-48, 54-20, 54-21, 55-07, 55-33, 55-47, 56-05, 56-21, 56-22, 56-25, 56-46, 57-15, 57-19, 58-27, 59-20, 59-21, 59-29, 60-04, 60-14, 60-15, 60-17, 60-18, 60-32, 60-33, 61-39, 62-01, 62-04, 62-13, 62-15, 62-16, 62-17, 63-08, 63-45, 63-48, 64-03, 64-05, 64-06, 64-07, 64-35, 65-07, 65-08, 66-31, 67-21,		

COMMON NONRESIDENT UTILITIES

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VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
67-41				68-23, 69-33, 69-34, 70-17, 70-43, 71-16, 71-17, 73-15, 73-16, 73-20, 74-30, 74-31,		
74-34				74-40, 75-14, 75-29, 75-31, 75-45, 76-08, 76-09, 76-26, 76-28, 77-27, 77-28, 77-30,		
77-34				77-37, 77-38, 78-02, 80-27, 81-09, 81-48, 82-16, 82-27, 82-33, 82-34, 82-36, 83-03,		
83-19				83-21, 83-22, 83-23, 83-30, 83-31, 83-37, 83-38, 83-39, 83-42, 83-44, 84-21, 84-27,		
84-36				84-42, 85-02, 85-03, 85-05, 85-24, 85-34, 85-38, 85-39, 85-40, 85-41, 85-42, 85-49,		
86-01				86-07, 86-08, 86-15, 86-23, 86-24, 87-23, 87-31, 87-37, 87-38, 87-39, 88-05, 88-08,		
88-09				88-10, 88-11, 88-14, 88-16, 88-19, 88-32, 89-31, 89-32, 89-35, 89-37, 89-45, 89-47,		
89-49				90-01, 90-11, 90-29, 90-30, 91-02, 91-03, 92-04, 92-33, 92-34, 93-21, 93-23, 93-25,		
94-21				94-32, 94-33, 94-47, 94-48, 94-49, 95-01, 95-15, 95-21, 97-26, 97-45, 98-21, 100-43,		
101-09				104-35, 104-37, 104-38, 106-17, 106-19, 106-21, 106-23, 106-38, 107-11, 107-16, 107-30, 107-35,		
108-32				110-18, 111-05, 112-42, 114-04, 114-13, 114-17, 116-22, 116-25, 116-28, 117-24, 117-25, 117-31,		
117-33				117-34, 117-35, 117-39, 117-41, 117-43, 117-46, 117-48, 117-49, 118-03, 118-04, 119-21, 119-32,		
119-37				119-47, 120-10, 120-12, 121-20, 121-30, 121-31, 121-34, 121-35, 121-39, 122-13, 122-14, 122-30,		
122-31				128-05, 128-08, 128-09, 128-19, 128-25, 128-36, 129-17, 129-18, 129-19, 129-27, 129-30,		
129-35				129-36, 129-37, 129-38, 129-45, 134-31, 135-39, 135-40, 136-41, 136-42, 137-10, 137-38, 138-31,		
139-30				140-27, 140-28, 140-29, 146-17, 146-19, 146-28, 150-21, 150-30, 150-31, 150-33, 150-38, 150-42,		
151-35				151-36, 151-39, 152-04, 152-05, 152-06, 152-33, 152-42, 152-43, 153-08, 153-11, 153-25, 154-08,		
159-07				159-11, 159-14, 159-20, 159-21, 159-24, 159-26, 159-38, 159-45, 159-46, 159-49, 160-05, 160-06,		
160-17				160-48, 160-49, 161-26, 161-27, 161-33, 161-34, 162-05, 162-06, 162-12, 162-13, 163-06, 163-20,		
163-32				163-35, 163-37, 163-39, 163-44, 163-45, 164-10, 164-11, 164-45, 164-46, 165-06, 165-12, 165-13,		
167-08				167-09, 167-34, 167-35, 167-42, 168-02, 168-03, 168-20, 168-24, 168-30, 168-35, 169-16, 169-22,		
169-24				169-38, 169-39, 169-47, 170-15, 170-16, 172-42, 172-49, 173-05, 173-40, 174-36, 174-44, 174-46,		
174-46				176-12, 176-13, 176-15, 178-01, 178-06, 178-07, 178-08, 178-17, 179-08, 181-40, 181-41, 181-42,		
181-43				181-45, 182-02, 182-03, 182-11, 182-12, 182-21, 182-26, 182-47, 183-02, 183-04, 183-13, 183-14,		
183-23				183-28, 183-29, 183-31, 184-07, 184-09, 185-07, 185-16, 185-17, 185-19, 185-20, 185-21, 185-22,		
185-23				185-24, 185-29, 185-47, 186-02, 186-03, 186-12, 186-20, 186-22, 187-07, 187-09, 187-43, 187-48,		
187-49				191-16, 191-17, 191-18, 191-23, 191-35, 191-36, 192-09, 192-11, 192-14, 192-16, 192-24, 192-26,		
192-27				192-28, 193-16, 193-17, 193-40, 194-18, 195-29, 195-36, 195-40, 196-44, 197-37, 197-43, 199-10,		
199-11				199-15, 199-16, 202-04, 202-05, 202-08, 202-09, 202-17, 202-42, 202-49, 203-18, 203-35, 204-32,		
205-17				205-18, 205-21, 206-11, 206-13, 209-20, 209-23, 210-07, 210-10, 210-45, 210-46, 211-16, 211-17,		
211-37				211-38, 212-06, 212-07, 212-08, 212-09, 212-29, 212-36, 213-15, 213-16, 213-33, 213-34, 213-39,		
213-40				214-32, 214-33, 217-35, 217-36, 221-02, 221-16, 221-17, 221-18, 221-40, 221-41, 221-46, 222-01,		
223-31				223-33, 225-23, 225-44, 225-45, 225-47, 225-49, 226-17, 226-44, 227-02, 227-05, 227-06, 228-25,		
228-30				228-35, 228-36, 228-37, 228-38, 228-43, 228-44, 228-49, 229-02, 229-04, 229-06, 229-25, 229-26,		
229-28				229-46, 230-30, 230-35, 230-45, 230-46, 230-48, 230-49, 231-02, 231-13, 231-14, 231-15, 231-16,		
231-21				231-22, 231-27, 231-29, 231-31, 231-33, 231-37, 231-38, 231-42, 232-04, 232-07, 232-16, 233-45,		
233-47				234-01, 234-03, 234-10, 234-11, 234-13, 235-35, 235-43, 236-01, 236-06, 237-09, 237-10, 237-14,		
240-09				240-12, 240-18, 240-21, 241-46, 242-02, 242-18, 242-19, 243-22, 243-23, 243-27, 243-28, 243-30,		
244-19				244-21, 244-24, 244-25, 244-28, 244-29, 244-30, 244-31, 244-34, 244-35, 244-36, 247-11, 247-25,		
247-28				247-29, 247-45, 248-17, 248-32, 248-33, 248-38, 250-19, 250-20, 251-14, 251-23, 251-27		
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1 R R1				LIBNUM=3 11-04, 15-01, 24-18, 24-19, 24-20, 24-21, 29-04, 34-26, 35-14, 36-11, 36-12,		
				36-13, 38-46, 38-47, 38-48, 39-13, 39-36, 39-37, 39-44, 39-45, 41-12, 41-13, 42-44, 42-45,		
				47-39, 47-40, 50-20, 50-21, 52-14, 52-27, 53-12, 54-37, 54-42, 57-16, 57-19, 57-20, 58-09,		
				58-26, 59-37, 61-04, 61-33, 61-34, 61-35, 61-36, 61-37, 62-08, 62-09, 62-11, 62-12, 62-14,		
				62-15, 64-04, 64-05, 66-05, 66-32, 67-37, 68-08, 68-39, 69-30, 69-33, 70-19, 71-14, 71-16,		
				72-04, 73-04, 74-05, 74-31, 74-32, 74-33, 74-39, 75-25, 75-27, 75-28, 75-30, 75-33, 75-34,		
				75-39, 76-11, 76-17, 77-03, 77-12, 77-13, 77-14, 77-15, 77-18, 77-19, 77-22, 77-23, 77-24,		
				77-26, 77-29, 77-31, 78-03, 78-04, 78-05, 78-06, 78-10, 78-11, 78-12, 80-06, 80-28, 81-17,		

COMMON NONRESIDENT UTILITIES

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PATCH HISTORY

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VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
				81-47, 83-26, 83-27, 83-30, 83-33, 83-37, 85-06, 85-09, 86-16, 89-46, 89-47, 92-05, 92-35, 93-20, 93-22, 94-43, 94-45, 95-03, 95-04, 95-05, 95-06, 95-07, 97-04, 97-27, 97-28, 97-29, 98-01, 98-44, 100-01, 100-44, 101-27, 101-33, 102-36, 102-42, 104-06, 109-11, 116-20, 116-21, 116-24, 116-26, 117-29, 117-30, 117-31, 117-40, 117-41, 117-49, 118-01, 119-22, 119-25, 119-28, 119-30, 119-46, 120-08, 121-38, 122-02, 144-47, 144-49, 146-27, 151-13, 151-14, 160-41, 161-22, 161-38, 161-40, 162-34, 163-18, 163-33, 163-42, 164-07, 164-08, 164-10, 164-30, 164-43, 167-11, 168-02, 168-05, 168-28, 168-31, 172-16, 173-03, 173-04, 175-08, 175-09, 176-09, 176-13, 177-36, 178-09, 178-15, 178-17, 178-25, 178-27, 178-28, 178-30, 178-31, 181-29, 181-36, 182-03, 182-05, 182-22, 182-27, 182-48, 183-08, 183-23, 183-32, 183-37, 184-32, 185-18, 185-21, 185-22, 185-23, 185-25, 185-30, 185-39, 185-48, 186-01, 186-07, 187-44, 191-19, 191-20, 191-37, 192-15, 192-17, 192-24, 195-37, 197-41, 204-35, 205-24, 205-40, 206-19, 209-24, 210-25, 212-09, 213-08, 213-12, 216-15, 216-29, 217-28, 217-32, 220-29, 222-07, 222-12, 223-06, 223-08, 226-31, 226-37, 226-40, 226-41, 228-40, 228-41, 228-43, 228-46, 228-49, 229-29, 229-31, 230-4, 230-42, 230-45, 231-18, 231-19, 231-21, 231-24, 231-27, 232-05, 232-06, 233-32, 233-33, 233-46, 233-48, 234-10, 235-34, 236-36, 237-15, 237-19, 240-14, 240-23, 241-07, 241-43, 241-49, 242-05, 244-18, 248-15, 248-22		
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12	R	R10		LIBNUM=3 27-05, 37-21, 37-22, 38-30, 38-32, 55-05, 59-29, 63-05, 64-20, 64-24, 64-25, 69-20, 70-04, 106-40, 107-25, 133-07, 134-41, 136-04, 136-06, 136-14, 136-26, 137-12, 137-21, 140-13, 141-21, 141-30, 160-31, 162-37, 165-10, 173-47, 174-02, 175-02, 187-43, 197-01, 197-05, 202-04, 202-43, 203-13, 203-37, 204-24, 204-38, 205-21, 205-23, 205-41, 209-23, 209-41, 210-18, 210-36, 211-17, 211-26, 211-38, 213-34, 221-26, 221-47, 222-01, 222-03, 223-08, 223-10, 223-11, 233-43, 233-47, 236-18, 236-19, 236-27, 236-29, 237-02, 237-27, 238-03, 241-39, 241-41		
0000152	A	R10XT		LIBNUM=5 132-13		
13	R	R11		LIBNUM=3 27-01, 38-47, 39-33, 39-34, 39-40, 39-43, 40-15, 40-20, 46-41, 47-21, 48-44, 49-08, 49-34, 49-43, 55-06, 63-07, 64-25, 64-29, 64-31, 64-32, 69-22, 70-06, 133-08, 134-42, 136-04, 136-07, 136-15, 136-27, 140-25, 141-37, 162-38, 165-11, 175-03, 187-44, 202-05, 202-45, 203-14, 203-38, 204-25, 204-39, 205-16, 205-19, 205-42, 210-10, 210-18, 210-33, 210-46, 211-37, 213-30, 214-32, 221-27, 221-48, 223-12, 223-31, 233-44, 233-48, 241-40, 241-42		
0000154	A	R11XT		LIBNUM=5 132-14		
14	R	R12		LIBNUM=3 55-08, 69-24, 70-08, 89-07, 133-09, 141-38, 144-40, 160-30, 160-31, 174-38, 174-47, 174-49, 175-04, 175-05, 176-02, 176-04, 181-30, 182-05, 182-31, 182-33, 182-43, 182-45, 182-47, 183-03, 183-04, 185-34, 185-36, 185-43, 185-45, 185-47, 186-03, 233-45, 236-18, 241-41		
0000107	A	R12XT		LIBNUM=5 132-15		
15	R	R13		LIBNUM=3 55-09, 69-26, 70-10, 89-05, 133-10, 141-39, 141-48, 144-37, 160-29, 164-40, 165-01, 174-39, 175-01, 175-06, 182-48, 183-08, 185-48, 186-07, 203-25, 205-14, 233-46, 241-42		
0000113	A	R13XT		LIBNUM=5 132-16		
16	R	R14		LIBNUM=3 129-41, 144-40, 159-41, 159-42, 159-43, 159-45, 205-41, 240-27, 240-43, 240-48, 241-02, 241-26, 241-31, 241-34, 241-46		
0000115	A	R14XT		LIBNUM=5 132-17		
17	R	R15		LIBNUM=3 129-39, 137-26, 137-40, 144-37, 159-40, 159-46, 204-34, 205-09, 205-14, 205-16, 205-17, 205-19, 205-42, 206-11, 221-35, 221-37, 221-40, 221-43, 221-45, 221-46, 240-28, 240-44, 241-03, 241-27, 241-35, 242-02		
0000116	A	R15XT		LIBNUM=5 132-18		
2	R	R2		LIBNUM=3 16-04, 16-06, 16-07, 16-08, 16-09, 16-10, 16-11, 16-12, 16-13, 16-14, 16-15, 16-16, 16-17, 16-19, 16-20, 16-21, 16-22, 16-23, 16-24, 28-12, 39-11, 39-13, 40-04, 40-15, 40-29, 40-44, 40-47, 41-29, 41-32, 41-43, 41-49, 42-15, 46-22, 47-14, 47-15, 47-22, 47-23, 47-33, 49-01, 49-14, 49-40, 50-04, 50-12, 50-13, 50-14, 50-16, 55-48, 56-07, 56-14, 62-28, 62-39, 62-43, 62-47, 63-02, 67-35, 67-39, 68-27, 70-20, 70-21, 70-24, 70-25, 70-44, 70-45, 70-46, 71-19, 71-23, 71-27, 71-28, 74-06, 74-07, 74-33, 74-35, 74-40, 75-30, 75-35, 75-37,		

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0:32:20 2/06/81 TRADE SECRET - SEE TRADE SECRET RESTRICTIVE NOTICE ON COVER SHEET CNRUTL ISSUE 05 PAGE 301

PATCH HISTORY

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VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
0000126	A	R2XT		75-39, 76-27, 76-28, 77-04, 77-05, 77-32, 77-35, 88-06, 88-11, 88-13, 89-24, 89-30, 89-32, 89-34, 94-44, 94-45, 98-45, 100-03, 100-45, 101-27, 101-34, 102-14, 102-15, 107-49, 119-23, 119-25, 119-29, 119-30, 119-45, 120-11, 120-20, 120-22, 121-40, 121-41, 121-42, 122-01, 128-13, 128-14, 128-30, 128-31, 128-42, 136-34, 138-38, 140-09, 141-14, 141-27, 141-45, 142-15, 142-18, 142-46, 143-27, 143-30, 144-07, 160-33, 160-49, 163-23, 164-07, 164-45, 166-30, 166-32, 166-40, 168-03, 168-05, 168-26, 168-30, 168-31, 170-03, 170-04, 170-07, 170-08, 170-09, 170-11, 171-35, 171-37, 171-45, 172-47, 172-48, 177-22, 177-25, 178-11, 178-13, 178-21, 178-23, 178-28, 179-09, 181-01, 181-03, 181-11, 185-18, 185-39, 186-01, 192-19, 192-22, 209-24, 209-40, 210-25, 221-31, 221-35, 221-45, 222-04, 222-24, 237-02, 237-09, 237-12, 237-14, 237-27, 237-36, 237-40, 240-29, 240-41, 240-47, 241-09, 241-24, 241-30, 241-49, 242-01, 242-05, 242-10, 242-19, 244-19, 244-20, 244-25, 251-18, 251-19, 251-35		
		3 R R3		LIBNUM=5 132-05, 138-37 LIBNUM=3 28-15, 28-34, 28-37, 28-39, 28-40, 39-12, 39-15, 39-17, 39-26, 40-29, 40-30, 41-30, 41-45, 42-13, 53-30, 53-31, 54-27, 54-33, 54-34, 54-36, 60-06, 60-07, 62-29, 62-30, 62-40, 62-41, 62-44, 62-45, 62-48, 62-49, 68-08, 68-39, 68-40, 69-29, 69-37, 70-45, 71-20, 71-21, 71-22, 71-23, 71-29, 71-30, 74-04, 74-34, 74-36, 74-37, 74-38, 77-15, 77-16, 77-21, 77-22, 77-31, 77-32, 77-33, 77-35, 82-14, 82-20, 82-24, 83-40, 88-10, 88-13, 88-16, 89-28, 89-31, 89-34, 89-37, 99-36, 100-01, 101-30, 101-36, 102-25, 102-31, 107-45, 107-46, 107-47, 107-48, 108-02, 108-03, 108-06, 108-08, 110-35, 128-23, 128-44, 136-35, 138-31, 140-10, 141-20, 160-34, 160-48, 161-42, 163-21, 163-23, 164-46, 170-01, 170-02, 172-45, 172-46, 209-29, 209-40, 221-32, 223-01, 223-13, 223-25, 240-31, 240-49, 241-05, 241-11, 241-32, 241-37, 244-18, 244-30, 250-10, 250-28, 250-35, 250-42, 251-03, 251-10, 251-42		
0000131	A	R3XT		LIBNUM=5 132-06 LIBNUM=3 38-35, 38-37, 38-38, 64-33, 67-38, 67-39, 69-07, 69-34, 70-18, 70-34, 70-39, 71-13, 71-17, 74-35, 74-37, 76-30, 76-31, 77-01, 85-25, 85-26, 85-28, 85-30, 85-35, 85-36, 86-01, 99-41, 100-03, 101-30, 101-37, 119-44, 122-01, 128-40, 128-41, 128-42, 128-43, 128-44, 136-36, 139-37, 140-11, 141-37, 142-07, 160-35, 160-41, 160-44, 161-19, 161-22, 161-24, 161-26, 161-30, 161-38, 161-39, 161-40, 161-41, 161-42, 162-02, 162-06, 162-09, 162-16, 162-25, 162-26, 162-29, 162-31, 162-34, 163-22, 163-47, 164-08, 164-36, 164-43, 170-02, 172-46, 173-01, 222-46, 223-40, 233-25, 233-26, 233-27, 237-28, 234-11, 240-36, 240-37, 240-48, 241-02, 241-03, 241-18, 241-19, 241-20, 241-31, 241-34, 241-35, 245-41, 246-17		
		4 R R4		LIBNUM=5 132-07, 139-36 LIBNUM=3 15-02, 27-02, 38-36, 38-37, 41-06, 42-30, 64-34, 68-41, 69-10, 69-11, 69-28, 69-31, 69-40, 69-43, 69-44, 70-12, 70-13, 70-14, 70-35, 70-41, 71-05, 71-06, 101-33, 101-35, 108-15, 108-37, 110-03, 111-05, 111-18, 111-29, 111-30, 111-42, 112-48, 120-09, 120-10, 120-11, 136-37, 139-30, 140-12, 141-38, 142-09, 161-20, 161-33, 162-03, 162-13, 162-26, 162-29, 162-30, 162-31, 162-32, 162-36, 163-20, 163-21, 164-40, 165-01, 170-04, 172-48, 173-02		
0000132	A	R4XT		LIBNUM=5 132-08 LIBNUM=3 27-04, 36-06, 38-24, 38-26, 38-29, 38-35, 38-41, 41-06, 42-30, 44-33, 53-46, 54-20, 54-42, 54-43, 54-44, 55-01, 62-18, 64-08, 64-09, 64-10, 64-11, 64-12, 64-27, 69-12, 69-45, 76-33, 78-24, 78-25, 78-27, 79-09, 101-34, 101-35, 101-40, 117-24, 123-45, 133-03, 134-47, 135-01, 135-04, 136-06, 136-12, 136-24, 140-09, 140-11, 140-13, 140-26, 141-07, 145-07, 145-12, 156-17, 157-17, 160-46, 162-17, 162-40, 163-11, 163-18, 163-19, 163-45, 164-38, 165-03, 170-05, 170-06, 173-41, 187-47, 191-16, 191-23, 193-07, 193-09, 193-14, 193-20, 193-41, 194-30, 194-31, 195-40, 195-43, 196-45, 197-37, 197-38, 204-22, 205-24, 205-40, 206-22, 206-23, 206-36, 209-10, 209-13, 212-23, 212-38, 213-08, 213-12, 214-13, 214-14, 217-02, 217-28, 217-32, 217-45, 217-47, 221-28, 222-07, 222-12, 222-38, 223-01, 223-05, 223-11, 223-25, 223-35, 235-34, 236-36, 237-15, 237-19, 240-05, 240-09, 240-12, 242-18, 245-03, 245-08, 245-45		
		6 R R6		LIBNUM=5 132-09 LIBNUM=3 32-27, 32-30, 32-33, 32-36, 37-20, 38-46, 39-32, 39-36, 39-39, 39-47, 39-48,		
0000143	A	R6XT				
		7 R R7				

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VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
0000145	A	R7XT		44-34, 53-12, 53-47, 54-21, 55-02, 59-04, 61-17, 62-19, 64-09, 64-13, 64-31, 69-14, 69-47, 76-35, 78-06, 78-07, 78-08, 82-29, 82-30, 82-35, 82-37, 82-38, 101-36, 101-38, 102-01, 102-02, 102-03, 102-04, 102-05, 102-13, 102-16, 102-17, 124-08, 124-09, 124-10, 133-04, 135-10, 135-21, 135-32, 136-07, 136-09, 136-21, 140-10, 140-12, 140-25, 140-26, 141-08, 156-18, 157-18, 159-11, 159-14, 159-21, 160-26, 160-27, 161-27, 161-30, 162-05, 162-09, 162-41, 163-06, 163-12, 163-39, 165-04, 166-30, 170-06, 171-35, 173-43, 173-44, 174-47, 174-48, 177-22, 181-01, 187-41, 187-42, 191-18, 193-42, 194-32, 196-46, 196-47, 197-40, 201-34, 201-42, 206-24, 209-20, 209-29, 214-13, 217-45, 219-49, 220-08, 223-12, 240-18, 240-21, 240-35, 240-36, 244-24, 244-29, 244-35, 244-36, 246-06, 246-09, 250-16		
		10 R R8		LIBNUM=5 132-10		
				LIBNUM=3 18-03, 18-04, 18-05, 18-06, 18-07, 18-08, 18-09, 18-10, 18-11, 31-22, 33-10, 33-11, 34-10, 34-28, 35-10, 38-48, 39-44, 39-47, 40-30, 40-36, 41-31, 41-32, 41-42, 41-45, 41-48, 42-13, 42-16, 44-46, 45-06, 46-28, 48-02, 53-09, 55-03, 59-06, 62-20, 62-44, 62-47, 62-48, 63-02, 64-18, 67-04, 69-16, 69-49, 76-36, 101-37, 101-38, 101-40, 117-43, 124-11, 133-05, 134-43, 141-14, 156-19, 157-19, 159-09, 159-42, 160-27, 160-28, 161-34, 162-12, 162-25, 163-42, 165-05, 173-45, 174-49, 187-39, 187-41, 191-19, 193-43, 194-40, 196-48, 197-41, 197-42, 202-08, 202-23, 202-31, 203-11, 204-12, 206-22, 210-07, 223-13, 241-15, 241-17, 241-18, 241-39		
0000146	A	R8XT		LIBNUM=5 132-11		
		11 R R9		LIBNUM=3 33-32, 33-33, 33-41, 34-01, 34-02, 34-12, 34-26, 34-29, 35-14, 37-18, 37-19, 45-01, 45-07, 48-15, 48-27, 55-04, 59-37, 62-21, 62-29, 62-39, 62-40, 62-43, 64-19, 64-20, 64-21, 64-22, 64-23, 64-27, 69-18, 70-02, 82-31, 82-32, 82-33, 108-03, 117-34, 117-39, 118-04, 118-05, 124-19, 133-06, 134-44, 141-20, 156-20, 157-20, 159-10, 159-41, 160-28, 160-29, 162-36, 165-09, 173-46, 175-01, 187-40, 191-26, 193-44, 195-01, 196-49, 202-09, 202-24, 202-32, 203-12, 204-13, 206-10, 206-15, 206-42, 211-26, 211-27, 211-29, 211-31, 212-07, 212-29, 213-30, 213-33, 213-39, 214-14, 214-30, 214-33, 216-04, 216-13, 216-27, 217-38, 217-39, 217-46, 217-47, 218-27, 221-07, 221-17, 221-18, 221-19, 221-25, 223-05, 223-37, 241-16, 241-17, 241-40		
0000151	A	R9XT		LIBNUM=5 132-12		
		0 U S				
TTYTBL	X	SXEG	32-27	32-27, 59-49, 209-13		
TTYTBL	X	SXELCT	193-09	193-09, 193-14		
CTVTAB	V	SXMCH		LIBNUM=15 128-07, 128-21, 128-38		
		14 P SXMCH_XCSYS				
		UB		LIBNUM=15		
TTYTBL	X	SXTART	63-07	63-07		
TTYTBL	X	SXTOPPED	124-38	124-38, 127-38, 145-12, 151-09, 164-23, 245-08		
CTVTAB	V	SXTPUTIL		LIBNUM=15 145-15		
		14 P SXTPUTIL_XC				
		UTIL		LIBNUM=15		
0000225	A	SARXF		LIBNUM=5 132-44		
01 0016753	L	SAVECRC	76-16	74-12		
0000056	A	SDRXF		LIBNUM=5 132-26		
0000055	A	SDR1XF		LIBNUM=5 132-27, 138-37, 139-36		
01 0014047	L	SEARCH	225-22	169-19, 173-17, 178-04		
01 0016201	L	SEGHDR	59-01	58-19		
01 0014502	L	SEGNEXT	241-04	240-42, 240-45, 241-01		
01 0014462	L	SEGNOLP	240-33	241-05		
01 0014474	L	SEGNZERO	240-46	240-38		
SEG000	V	SEGTAB	8-34	33-05, 183-30, 212-06		
01 0014467	L	SEGZERO	240-40			
CSYSUB	V	SENDMIO	7-17	108-05		

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VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
0000000	A	SERERR	14-08	W=1 S=17 N=0 CL=3 74-37		
01 0010041	L	SERKEY	25-22	TBLSIZ=1 25-24,152-04,159-24,160-05,165-13,167-09,169-39,170-16,191-36,248-32		
0006473	A	SERNO_047643	257-23			
0006517	A	SERNO_048839	259-12			
0006523	A	SERNO_048840	259-23			
0006553	A	SERNO_049638	261-24			
0006567	A	SERNO_056860	263-02			
0006557	A	SERNO_057238	262-02			
0006563	A	SERNO_057658	262-15			
0006547	A	SERNO_059165	261-14			
0006543	A	SERNO_059176	261-02			
0006537	A	SERNO_059358	260-24			
0006527	A	SERNO_059610	260-02			
0006477	A	SERNO_060877	258-02			
0006467	A	SERNO_061052	257-13			
0006503	A	SERNO_061245	258-12			
0006463	A	SERNO_061472	257-02			
0006533	A	SERNO_061585	260-13			
0006437	A	SERNO_061610	255-13			
0006443	A	SERNO_061892	255-24			
0006447	A	SERNO_061972	256-02			
0006513	A	SERNO_061994	259-02			
0006507	A	SERNO_062271	258-23			
0006433	A	SERNO_062635	255-02			
0006427	A	SERNO_062679	254-26			
0006453	A	SERNO_062840	256-13			
0006423	A	SERNO_063241	254-15			
0006457	A	SERNO_063876	256-23			
0006417	A	SERNO_065021	254-02			
CTAPH	V	SETMAINT	7-27	108-46		
MASACS	V	SETRCBAP	8-26	91-20		
01 0017515	L	SEZC	97-42	97-10		
01 0017500	L	SEZM	97-23	97-05		
01 0015753	L	SEZTU	52-23	52-15, 61-05, 72-16		
01 0016607	L	SEZTU_	72-15	72-05, 73-05		
'TUUTCTL+5'	T	SGNO		W=20 S=0 N=5 CL=2 37-20, 53-46, 54-44, 60-18, 61-34, 62-13, 62-17, 64-03, 64-07, 68-27, 70-44, 70-46, 71-19, 71-27, 76-30		
0000036	A	SIRXF		LIBNUM=5 132-28		
0000035	A	SIR1XF		LIBNUM=5 132-29		
CSYSUB	V	SLOMIRL	128-16	128-17,128-33,128-34		
CSYSUB	V	SMCH	128-06	110-32,128-20,128-37		
	D	U SP				
01 0011417	L	SPECCASE	163-31	162-18		
'VXER'	T	SPWORD				
01 0014051	L	SRCHNXTBLK1	225-34	226-20,227-10		
01 0014057	L	SRCHSAMPLK	225-43	227-07		
01 0014323	L	SRCHTB	233-21	185-06		
0000216	A	SSXF		LIBNUM=5 109-39		
0000216	A	SS_RXT		LIBNUM=5 109-31		

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VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
01	0015771	L STALST	52-47	52-41, 84-13, 98-20		
01	0010025	L STARTCLRBLK	25-08			
	0000011	A STATST		LIBNUM=13 75-12,121-19,152-41		
01	0020421	L STCOU	45-04	45-02		
01	0017535	L STMADR	98-38	97-09		
01	0013100	L STOPOW	199-01	5-30		
	CBLM	V STOPPSAU	6-11	80-21, 86-21,114-21,182-39		
01	0015734	L STOPTAP	51-01	5-31		
01	0020117	L STORTBT	117-22	30-18, 31-19, 32-39, 34-31, 35-16		
01	0015772	L STOUT	53-04	52-18		
	CUTIL	V STPUTIL	8-03			
	TDATA	V STRLIM	8-37	8-41,107-45,135-39,136-46,136-47,202-12		
01	0020202	L STRTOV	120-07	119-31		
	0121412	L STRTREF	107-24	107-20		
	MASACS	V STWORD	8-27			
	CSYSUB	V ST2_13	7-10	247-13,248-40,251-29		
	CSYSUB	V ST2_7	7-09	170-13		
01	0014352	L SUBDONE	234-02	233-49		
'TUUTCTL+2'	T	SUBST		W=20 S=0 N=2 CL=2 29-04, 53-29, 56-14, 60-05, 60-33, 61-38, 63-35, 65-08, 66-40, 67-22, 70-20, 71-05, 71-08, 74-06, 74-49, 77-28, 77-38, 82-09, 90-01, 90-30, 93-03, 95-21, 97-34, 98-07, 98-46,100-05,101-01,102-04,114-38		
01	0017233	L SUB1	89-23	88-26, 89-38		
01	0020330	L SUB1_TC	89-08	89-06		
	CSYSUB	V SUB10	7-11	206-21		
	0000000	A SV_REG				
	CTSD	V SYSTATE	7-34	250-19		
	CIPL	V SYSTMDFS	6-31	112-35		
	O	U				
	TTYTBL	X TXAPE	48-02	48-02, 53-23, 59-48, 61-28, 67-15, 76-46, 79-19, 79-44, 95-36,166-40,171-45		
	CTVTAB	V TXIMCHK		LIBNUM=15 107-19,107-38		
	14	P TXIMCHKX_XCS				
		YSUB		LIBNUM=15		
	CTVTAB	V TXIMOUT		LIBNUM=15 107-09,107-28		
	14	P TXIMOUTX_XCS				
		YSUB		LIBNUM=15		
	TTYTBL	X TXRNSLN	49-08	49-08,174-02,191-26,197-05,201-42,220-08		
	TTYTBL	X TXTY	166-32	166-32,171-37		
	10	R TAPEACT	16-20	W=1 S=16 N=6 CL=1 152-37,247-45		
	TDATA	V TAPETBL	8-38	36-11,117-29		
	0000010	A TAPNO		W=? S=0 N=10 CL=3 LIBNUM=13 37-18, 38-38, 38-40, 38-41, 74-31, 74-32, 74-33, 75-25, 75-27, 75-28, 76-11, 77-31, 78-04, 78-05, 92-34, 93-23, 93-25, 94-33,121-41,121-42		
	0000002	A TAPUCLNT		LIBNUM=13 44-24, 52-30, 52-41, 56-45, 58-34, 66-35, 73-19, 74-46, 75-12, 75-44, 77-46, 80-31, 81-25, 82-02, 84-13, 90-10, 97-32, 98-04, 98-20, 99-10,100-20,101-08,104-42,105-28, 121-19,121-29		
01	0015232	L TAPUMON	28-09	24-29		
01	0015232	L TAPUTL	1-33	33-24, 34-16, 44-40, 70-27, 88-41,102-07		
01	0016127	L TAPUTLCOM	56-42	53-43, 62-05, 63-49, 72-18		
01	0016611	L TAPUTLCOM	72-17	72-08, 73-08		
01	0013226	L TC_LABEL	203-47	203-36		

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VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
CTSD	V	TCBADR	7-35	74-04, 77-34, 89-46, 92-04		
TDATA	V	TDATA	8-39	159-38, 202-17, 202-42, 221-16		
BLMMA	V	TEMPINH	6-03	6-04, 6-05, 90-32, 99-12, 100-22, 110-17, 114-40, 247-44		
CSYSUB	V	TENZERO	7-12	240-11, 240-20		
01	0011306	L	160-36	161-43		
	0116774	L	2-01	49-21, 81-02, 81-36, 87-10		
CSYSUB	V	TFAPCH2	7-15	107-18, 107-37		
CSYSUB	V	TIMCHK	7-16	107-08, 107-27		
CSYSUB	V	TIMOUT	7-13	112-44		
CSYSUB	V	TIMOUTX	7-13	112-44		
01	0012246	L	181-46	181-32		
01	0012774	L	195-44	195-41		
	0600000	L	2-03			
	'TUUTCTL+6'	T				
			W=20	S=0 N=6 CL=2		
				36-15, 37-19, 38-42, 48-35, 52-26, 58-27, 61-17, 66-31, 67-04, 74-05, 76-33, 77-03, 77-29, 78-03, 80-27, 81-09, 81-48, 92-33, 93-21, 94-21, 94-32, 102-02, 117-33, 121-40		
0006477	A	TR_011785	258-02			
0006557	A	TR_011845	262-02			
0006543	A	TR_011977	261-02			
0006423	A	TR_012280	254-15			
0006417	A	TR_012281	254-02			
0006427	A	TR_012364	254-26			
0006453	A	TR_012436	256-13			
0006457	A	TR_012437	256-23			
0006443	A	TR_012438	255-24			
0006433	A	TR_012439	255-02			
0006447	A	TR_012447	256-02			
0006473	A	TR_012448	257-23			
0006533	A	TR_012449	260-13			
0006437	A	TR_012450	255-13			
0006463	A	TR_012607	257-02			
0006503	A	TR_012634	258-12			
0006467	A	TR_012638	257-13			
0006507	A	TR_012649	258-23			
0006513	A	TR_012650	259-02			
0006527	A	TR_012651	260-02			
0006547	A	TR_012809	261-14			
0006523	A	TR_013053	259-23			
0006517	A	TR_013054	259-12			
0006537	A	TR_013056	260-24			
0006567	A	TR_013059	263-02			
0006553	A	TR_013536	261-24			
0006563	A	TR_013591	262-15			
0004147	A	TR_11785	172-29	172-41		
0002630	A	TR_11845	124-26			
0000746	A	TR_11977	39-01	39-11		
0004111	A	TR_12280	151-41	152-04, 153-13, 153-25, 171-02		
0001505	A	TR_12281	54-24	54-39, 62-23, 62-38, 64-15		
0005476	A	TR_12364	194-20	194-30, 221-04, 222-35		
0001600	A	TR_12436	66-13	67-29, 70-33		

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VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
0002121	A	TR_12437	40-01	40-12, 40-26, 40-40, 41-19, 41-29, 42-09, 92-09, 92-45, 93-29, 95-12		
0006261	A	TR_12438	245-49	246-19, 246-31		
0004760	A	TR_12439	174-06	188-04, 188-28, 196-12		
0002276	A	TR_12447	46-24	47-46, 48-11, 48-23, 88-37, 89-02, 104-13		
0002112	A	TR_12448	94-02			
0006150	A	TR_12449	242-07	242-18		
0005553	A	TR_12450	225-25	226-05, 226-16		
0003402	A	TR_12607	146-24			
0003327	A	TR_12634	135-07	135-18, 135-29, 137-06, 140-15, 140-25, 141-10, 141-23, 141-41, 142-11, 142-40, 143-21, 144-01		
0002447	A	TR_12638	110-39	111-13, 112-10, 112-29		
0002537	A	TR_12649	44-20	44-36, 44-46, 97-39, 98-23, 99-38, 101-11, 101-44, 102-13, 102-33, 119-34, 120-04		
0001422	A	TR_12650	33-07	33-19, 33-30, 34-04, 34-22, 54-01, 56-01, 58-06, 58-29, 59-08, 59-20, 60-20, 60-32		
0005170	A	TR_12651	203-29	204-01, 204-41, 205-30, 205-40		
0001027	A	TR_12809	42-33			
0001152	A	TR_13053	46-36	48-39, 49-03		
0002366	A	TR_13054	108-48			
0006116	A	TR_13056	209-26	209-37, 210-12, 210-39, 211-11, 212-25, 212-42, 213-18, 213-42, 214-36, 216-40, 217-02, 235-20, 235-32, 236-08, 236-18, 236-38, 237-24, 237-35, 238-15		
0002622	A	TR_13059	121-44	123-47, 124-08		
0002575	A	TR_13536	109-17	109-36, 122-36, 123-02		
0002010	A	TR_13591	49-16	49-28, 80-43, 81-08, 81-32, 81-42, 87-05, 87-16		
0001107	A	TR_3E790151	47-02	47-14		
0002457	A	TR_3E790250	113-07	113-17		
0001565	A	TR_3E790257	67-43	68-08, 68-29, 68-39		
0006303	A	TR_3E790260	37-26	49-29, 90-19, 90-29, 98-48, 99-08, 100-08, 100-18, 114-27, 114-38, 247-33, 247-43		
0006273	A	TR_3E790307	218-15	245-27, 247-08		
0001771	A	TR_3E790479	84-08			
0002407	A	TR_3E790507	105-16	105-26, 110-06, 110-16		
0002434	A	TR_3E790679	106-05	106-15, 111-32, 111-42		
0001670	A	TR_3E800008	78-43	79-08		
0001763	A	TR_3E800077	82-42	83-02		
0004067	A	TR_3E800117	167-37	168-08, 168-20		
0002611	A	TR_3E800147	123-28			
0002332	A	TR_3E800198	106-26	106-38		
0001655	A	TR_3E800224	78-14	78-24		
0000005	A	TRACK		W=2 S=13 N=6 CL=3 LIBNUM=13 35-08, 64-21, 64-22, 64-27, 77-05, 77-23, 101-27, 101-30		
0000000	A	TRCK		W=2 S=13 N=0 CL=3 LIBNUM=13 39-39, 39-43, 42-36, 64-10, 64-11, 77-18, 89-47, 95-04, 95-05, 102-25, 102-36, 118-03		
01	0020450	L TRK4	34-27	34-22		
		7 R TRN_OP	16-14	W=1 S=4 N=5 CL=1 191-24, 191-27, 193-12, 196-06, 201-37, 201-45, 202-15, 202-40, 205-25, 220-03, 220-11, 221-14, 222-08		
01	0014676	L TRORG	33-07	33-19, 34-04, 37-26, 39-01, 40-01, 40-12, 40-26, 40-40, 41-19, 42-09, 42-33, 44-20, 44-36, 46-24, 46-36, 47-02, 47-46, 48-11, 48-23, 48-39, 49-03, 49-16, 49-29, 54-01, 54-24, 54-39, 56-01, 58-06, 58-29, 59-08, 60-20, 62-23, 64-15, 66-13, 67-29, 67-43, 68-29, 78-14, 78-43, 80-43, 81-32, 82-42, 84-08, 87-05, 88-37, 90-19, 92-09, 92-45, 93-29, 94-02, 95-12, 97-39, 98-23, 98-48, 99-38, 100-08, 101-11, 101-44, 102-33, 104-13, 105-16, 106-05, 106-26, 108-48, 109-17, 109-36, 110-06, 110-39, 111-13, 111-32, 112-10, 112-29, 113-07, 114-27, 119-34, 120-04, 121-44, 122-36, 123-28, 123-47, 124-26, 135-07, 135-18, 135-29, 137-06, 140-15, 141-10, 141-23, 141-41, 142-11, 142-40, 143-21, 144-01, 146-24, 151-41, 153-13, 167-37, 168-08, 171-02, 172-29, 174-06, 188-04, 188-28, 194-20,		

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VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
				196-12,203-29,204-01,204-41,205-30,209-26,210-12,210-39,211-11,212-25,212-42,213-18,213-42,214-36,216-40,218-15,221-04,222-35,225-25,226-05,235-20,236-08,236-38,237-24,238-15,242-07,245-27,245-49,246-19,247-08,247-33		
01	0020211	L TRYNX	120-19	119-26		
		CIPL V TSFLG	6-32	222-04,222-24		
		0000000 A TSTATE	14-04	W=1 S=13 N=0 CL=3 LIBNUM=13 74-36, 74-37, 78-12,122-02		
01	0012411	L TSTNXTADR	185-03	186-13		
01	0012403	L TSTNXTBLK	184-40	184-01,186-45		
01	0012236	L TSTNXTORGBLK	181-34	183-16,186-14		
		TTYTBL V TTY_IP	9-01	30-23, 31-30, 37-30, 43-03, 45-22, 47-42, 50-23		
		LAYOUT V TTY_MFA	8-12			
		TTYTBL V TTY_NG	9-02	31-25, 36-31, 50-18, 50-27,116-22,118-10,159-30,160-13,160-21,163-12,166-48,172-04,181-19,199-13,199-21,202-01,202-37,203-02,203-20,209-16,210-28,210-48,211-19,211-40,220-16,243-25,248-35,250-23		
		TTYTBL V TTY_OK	9-03	156-22,157-22,162-41,165-16		
	7	R TTY_OP	16-10	W=1 S=0 N=5 CL=1 166-35,166-43,167-24,169-21,171-40,171-48,172-13		
		TTYTBL V TTY_PF	9-04	32-44, 34-36, 35-21, 36-19, 51-14,164-27,199-24,248-44,251-44		
		TTYTBL V TTY_RL	9-05	116-28,243-32,251-16,251-25,251-40		
01	0014632	L TTYACK	245-10	245-04		
		10 R TTYACT	16-21	W=1 S=17 N=6 CL=1 153-06,247-29		
		0 U TTYAPP				
		5 R TTYID1	16-08	W=20 S=0 N=3 CL=1		
		11 R TTYLINK	16-22	W=20 S=0 N=7 CL=1 153-08,174-46,176-15,183-30,183-31,183-37,184-32,193-40,194-18,196-44,197-43,247-28		
		.0000002 A TTYO_		LIBNUM=10 28-24, 28-25, 53-20, 53-21, 55-40, 55-41, 56-32, 56-33, 57-08, 57-09, 59-46, 61-25, 61-26, 63-17, 64-43, 67-12, 67-13, 76-43, 76-44, 79-16, 79-17, 79-41, 79-42, 91-10, 91-11, 95-33, 95-34,103-08,103-09,124-36,127-33,127-34,129-09,129-10,130-28,145-22,145-23,151-05,151-06,151-28,151-29,162-49,163-01,164-19,164-20,174-16,176-23,176-24,193-28,193-29,194-06,195-10,197-15,198-05,198-06,206-31,206-32,214-21,214-22,218-05,218-06,223-21,245-17,245-18		
		0000003 A TTYO_ASC		LIBNUM=10 63-16,194-05,195-09		
		0000010 A TTYO_BCD		LIBNUM=10 53-20, 59-45, 76-43,174-15,197-14		
		0000004 A TTYO_DEC		LIBNUM=10 61-25, 67-12, 79-16, 79-41,124-35,174-15,175-19,175-37,188-14,188-37,197-14,198-05,206-31,214-21,218-05		
		0000011 A TTYO_DEC5		LIBNUM=10 64-42, 64-43,197-14,223-20		
		0000005 A TTYO_H_C		LIBNUM=10 130-10,130-11,142-33,143-12,143-44,144-21,175-19,175-37,188-14,188-37,206-31,223-20		
		0000014 A TTYO_H_D		LIBNUM=10 142-33,142-34,143-44,143-45,175-20,188-15		
		0000006 A TTYO_L_X		LIBNUM=10 53-20, 55-17, 55-18, 59-46, 76-43,124-35,130-10,130-11,131-05,131-06,142-33,142-34,143-12,143-13,143-44,143-45,144-21,144-22,175-19,175-20,175-37,175-38,188-14,188-15,188-37,188-38,206-31,223-20		
		0000002 A TTYO_SKP		LIBNUM=10 143-12,143-13,144-21,144-22,175-38,188-38		
		0000000 A TTYO_WRD		LIBNUM=10 28-24, 53-20, 59-45, 61-25, 63-17, 64-42, 67-12, 76-43, 79-16, 79-41, 91-10, 95-33,103-08,127-33,129-09,130-27,142-34,143-13,143-45,144-22,145-22,151-05,151-28,162-49,164-19,174-16,175-19,175-37,188-14,188-37,193-28,197-15,198-05,245-17		
		0000000 A TTYOCNT	28-26	53-22, 55-19, 55-42, 56-34, 57-10, 59-47, 61-27, 63-18, 64-44, 67-14, 76-45, 79-18, 79-43, 91-12, 95-35,103-10,124-37,127-35,129-11,130-12,130-29,131-07,142-35,143-14,143-46,144-23,145-24,151-07,151-30,163-02,164-21,174-17,175-21,175-39,176-25,188-16,188-39,193-30,194-07,195-11,197-16,198-07,206-33,214-23,218-07,223-22,245-19		

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PATCH HISTORY

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VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
01	0015454	L TTYOUT	36-26	30-16, 30-19, 31-17, 31-21, 32-25, 32-40, 34-32, 35-17, 37-17, 38-23, 44-18, 46-21		
01	0015455	L TTYOUTNG	36-29	32-37, 33-31, 34-11, 36-08, 36-14, 38-25, 38-31, 38-39, 39-35, 39-38, 39-42, 39-46, 40-10, 40-38, 40-46, 41-40, 42-01, 42-17, 42-31, 48-21, 48-37, 51-08		
	0	U TTYTBL				
	4	R TTYVERB	16-07	W=20 S=0 N=2 CL=1 178-13,178-23,182-33,182-45,184-09,185-36,185-45,186-22,187-09, 192-11,192-22		
01	0010052	L TUCOPYCTL	26-19	93-03, 95-09, 95-10, 97-34, 98-07, 98-46,100-05,100-45,120-08		
	0000000	L TUPATCH	126-03			
	CTSD	V TUSTAT	7-36	74-30, 75-29, 77-30, 78-02,121-39		
01	0010052	L TUUTCTL	26-10	5-32, 27-03, 28-12, 53-29, 60-05, 60-34, 61-38, 63-35, 66-40, 67-22, 70-17, 71-08, 74-49, 75-31, 77-10, 82-09, 82-38, 83-03, 85-25, 85-35,101-01,114-38,116-24,119-44,121-34,122-13, 122-30		
	0000002	A TUUTIL	24-28	51-07,116-21,250-10		
01	0020416	L TZR9	44-49	44-47		
	TTYTBL	X UXCL	177-25	177-25		
	TTYTBL	X UXPD	223-40	223-40		
	TTYTBL	V UCL	9-12	250-16		
	7	R UCL_OP	16-13	W=1 S=3 N=5 CL=1 177-23,177-28,178-35		
	MASACS	V UNPKWRDS	8-28	87-41		
01	0011067	L UPDDONE	150-46	150-39		
01	0013644	L UPDHASH	219-30	5-33		
	CBLM	V UPDOMAS	6-19	122-23,123-34		
01	0011057	L UPDOMASCONT	150-34	150-43		
01	0020044	L UPDOTS	113-04	104-28		
01	0020065	L UPDOTSCONT	114-11	104-29		
01	0012556	L UPDOWFIL	190-03	5-34		
01	0020032	L UPDSYSTM2	112-32	104-27		
01	0013663	L UPVRHASHCONT	220-18	220-04,220-12		
01	0014045	L UPVRHASHFAIL	224-20	220-37,222-11		
01	0014043	L UPVRHASHPASS	224-17	223-42		
	CBLM	V UQOFLCC	6-20	113-37,123-24		
	CUTIL	V UREQ	8-04	251-21		
	CTSD	V UREQBUF	7-37	146-17		
'TUUTCTL+D'	T	UTCTL	W=4 S=0 N=0 CL=2	30-21, 31-28, 32-42, 34-34, 35-19, 36-17, 37-24, 43-01, 45-20, 47-40, 50-21, 53-48, 55-47, 78-25, 91-03,102-13,122-13,122-30,123-45,124-09,124-10,124-11,124-19		
TTYTBL	X	VXER	182-43	182-43,185-43,222-46,246-17		
01	0013644	L VERHASH	219-31	5-35		
01	0012204	L VEROW	180-02	5-36		
01	0012526	L VERONFAIL	187-36	183-06,183-09,186-05,186-08		
01	0012554	L VERONFAILNP	189-01	185-10,188-24		
01	0012262	L VERRESLP	182-16	183-15		
	0000005	A VERTRK	W=2 S=13 N=5 CL=3	LIBNUM=13 77-26		
	CVTAB	V WXAIT	LIBNUM=15	75-49, 89-27, 90-15,121-24,146-37,150-41,237-21		
	14	P WXAITX_XCBLM	LIBNUM=15			
TTYTBL	X	WXARN	162-40	162-40		
	CBLM	V WAIT	6-21	84-26, 84-41, 85-18, 86-28, 86-33		
01	0021130	L WAITX	146-15	137-30,140-47		
	TDATA	V WDSTR	8-40	135-40,175-08,175-09,187-48,187-49		
01	0020405	L WHTNXT	71-26	71-18		

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VALUE	T	NAME	DEF/REF	ATTRIBUTES AND REFERENCES	CNRUTL	W77D
10	R	WIDE_OP	18-11	W=1 S=10 N=0 CL=1	135-41,136-02,137-19,138-33,139-32,142-18,142-46,143-30,144-07	
MASACS	V	WOPS	8-29	86-18,182-36		
CSYSUB	V	WPOST	7-14	113-41,122-18,123-22		
0121233	L	WRCOMP	86-30	85-27, 85-29, 86-02		
01 0017405	L	WRITCOPY	94-28	92-17		
0000003	A	WRITE		LIBNUM=13 73-19,231-05,231-45,232-10		
0000003	A	WRTAB		LIBNUM=13 77-46,179-03,184-23,186-36,187-23,192-40,224-05		
01 0016273	L	WRTDCON	61-45	61-09		
01 0016332	L	WRTDCONL	63-41	61-10		
01 0016250	L	WRTDH	61-14	61-08		
01 0017057	L	WRTITAB	77-43	74-20		
01 0016457	L	WRTLCON	67-32	66-11		
01 0016460	L	WRTLCON2	67-36	71-32		
01 0016442	L	WRTLH	67-01	66-10		
01 0014250	L	WRTNXTBLK	231-12	232-01		
01 0014210	L	WRTOWRCRD	230-21	173-26		
01 0011353	L	X_LT_A	162-15	162-07		
CTSD	V	YEARS	7-38	169-47,172-42		
01 0016556	L	ZEROIT	70-11	69-46, 69-48, 70-01, 70-03, 70-05, 70-07, 70-09		
INITA	V	ZOSPWDS	8-07	113-20		
0121022	L	1ST_OW	82-23	87-22		
0	R	1STB	11-19	W=1 S=1 N=0 CL=1 114-04,128-02,150-33,151-20		
1	J	3ACC	1-09			
0077777	A	32KMSK	15-18	203-25,206-11,223-31		
0000037	A	32SEGMSK	15-20	211-27,212-29,213-40		
0007777	A	4KMSK	15-19	204-34		

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CD1

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COUNT FLAG

PAGE-LINE OF FLAG

CNRUTL W77D

3 E
10 W

88-34, 108-34, 112-46
70-48, 83-49, 84-26, 84-34, 84-41, 85-18, 86-28, 86-33, 210-48, 211-19

13 FLAG(S) FOUND IN THIS ASSEMBLY

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