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/ DECTAPE COPY PROGRAM      T. FLEISCHMANN 9/70
/ DIGITAL EQUIPMENT CORP. MAYNARD, MA
/ MODIFIED BY R. SCHOONOVER 12/71
/ MODIFIED BY ED HILTON 5/5/72
/
/ PROGRAM COPIES AN ENTIRE DECTAPE FROM SPECIFIED INPUT UNIT
/ TO OUTPUT UNIT. FIRST PASS DOES A READ-WRITE SEQUENCE
/ DOWN ENTIRE TAPE. SECOND PASS DOES A READ-READ SEQUENCE
/ IN REVERSE BACK TO BOT.
/
/ DECTAPES MUST BE STANDARD FORMAT(578 OR 576 BLOCKS
/ 256WORDS/BLOCK).
/
/ IF THE INPUT TAPE HAS 1102 BLOCKS AND THE OUTPUT TAPE
/ HAS 1100, A WARNING WILL BE ISSUED. THIS WARNING MAY
/ BE IGNORED IF INPUT TAPE FILES WERE WRITTEN VIA ADVANCED
/ SOFTWARE, SINCE BLOCKS 1100 AND 1101 ARE NOT WRITTEN UNDER
/ THAT SYSTEM.
/
/ IF DURING PASS2 A DATA COMPARE ERROR IS ENCOUNTERED, AN
/ ERROR MESSAGE WILL BY TYPED.
/ PROGRAM USES A DATA BUFFER WHOSE SIZE IS A FUNCTION A AVAILABLE CORE
/ 6K FOR AN 8K SYSTEM, 12K FOR AN 16K SYSTEM, 18K FOR AN 24K SYSTEM,
/ AND 24K FOR AN 32K SYSTEM. EXTRA 4K PAGES DO NOT AFFECT
/ DATA BUFFER SIZE.
/
/ PROGRAM EXECUTION REQUIRES APPROX. 2 1/2 MINUTES.
      .EBREL
```

			.TITLE	DTCOPY
00000	R	400000	A	UODSW 400000
00001	R	000000	A	0
00002	R	000000	A	0
00003	R	000000	A	0
00004	R	000622	R	.DSA SERV
00005	R	000033	R	.DSA INIT
00006	R	042403	A	.SIXBT "DTCOPY"
00007	R	172031	A	
00010	R	000000	A	0
00011	R		A	.BLOCK 7
00020	R	000000	A	SYSERR 0
00021	R	000000	A	ERCODE 0
00022	R	000000	A	0
00023	R	000000	A	0
00024	R	000000	A	0
00025	R	000000	A	0
00026	R	000000	A	0
00027	R	000000	A	0
00030	R	000000	A	0
00031	R	000000	A	0
00032	R	000000	A	0
				/
				/
00033	R	000000	A	INIT 0
00034	R	703302	A	CAF
00035	R	200726	R	LAC MESS1 /SHUT OFF MONITOR
00036	R	740001	A	CMA /GET WC OF MESS1
00037	R	041066	R	DAC /
00040	R	201071	R	LAC SBWC# /SHIP TO SIXBT UNPACK ROUTINE
00041	R	100624	R	JMS (MESS1+1 /GET ADDR OF MESS1
00042	R	100702	R	JMS SBSTRP /STRIP AND PRINT
00043	R	200733	R	ASKIN JMS CRLF
00044	R	740001	A	LAC MESS2 /GET WC OF MESS2
00045	R	041066	R	CMA
00046	R	201072	R	DAC SBWC /SHIP TO SIXBT UNPACK ROUTINE
00047	R	100624	R	LAC (MESS2+1 /GET ADDR OF MESS2
00050	R	100710	R	JMS SBSTRP /STRIP AND PRINT
				JMS KBRD /GET ANSWER TO MESS2
				/RETURN WITH RESPONSE
				/IN (ANSW+2)
				.EJECT

00051	R	201042	R	LAC	ANSW+2	
00052	R	100610	R	JMS	NUMBER	/VALID UNIT# ?
00053	R	740200	A	SZA		
00054	R	600043	R	JMP	ASKIN	
00055	R	201042	R	LAC	ANSW+2	
00056	R	501073	R	AND	(7	
00057	R	744020	A	RCR;	RTR; RAR	
00060	R	742020	A			
00061	R	740020	A			
00062	R	541057	R	DAC	UNTIN	/STORE INPUT UNIT #
00063	R	200740	R	ASKOUT	LAC MESS3	/GET WC OF MESS3
00064	R	740001	A	CMA		
00065	R	541066	R	DAC	SBWC	/SHIP TO SIXBT STRIP
00066	R	201074	R	LAC	(MESS3+1	
00067	R	100624	R	JMS	SBSTRP	
00070	R	100710	R	JMS	KBRD	/GET ANSWER TO MESS3 /RETURN WITH ANSWER /IN ANSW+2
00071	R	201042	R	LAC	ANSW+2	
00072	R	100610	R	JMS	NUMBER	/VALID UNIT # ?
00073	R	740200	A	SZA		
00074	R	600063	R	JMP	ASKOUT	
00075	R	201042	R	LAC	ANSW+2	
00076	R	501073	R	AND	(7	
00077	R	744020	A	RCR;	RTR; RAR	
00100	R	742020	A			
00101	R	740020	A			
00102	R	541057	R	SAD	UNTIN	
00103	R	600112	R	JMP	UNITEQ	
00104	R	541060	R	DAC	UNTOUT	/STORE OUTPUT UNIT#
00105	R	201075	R	LAC	(-14000	
00106	R	541045	R	DAC	WC	
00107	R	201076	R	LAC	(30	
00110	R	541053	R	DAC	SKPBLK	
00111	R	100551	R	JMS	CORCHK	/FIND OUT HOW MUCH CORE?
00112	R	201014	R	UNITEQ	LAC MESS9	/GET WC OF MESS9
00113	R	740001	A	CMA		
00114	R	541066	R	DAC	SBWC	/SHIP TO SIXBT STRIP ROUTINE
00115	R	201077	R	LAC	(MESS9+1	/GET ADDR OF MESS9
00116	R	100624	R	JMS	SBSTRP	/STRIP AND PRINT
00117	R	100702	R	JMS	CRLF	
00120	R	600043	R	JMP	ASKIN	
00121	R	201057	R	RESTRT	LAC UNTIN	
00122	R	707545	A	DTLA		
00123	R	201060	R	LAC	UNTOUT	
00124	R	707545	A	DTLA		
00125	R	600033	R	JMP	INIT	
					.EJECT	

/PASS1 READS FROM INPUT UNIT AND WRITES ONTO OUTPUT UNIT.  
/DATA BUFFER SIZE IS A FUNCTION OF AVAILABLE CORE.

PASS1 DZM QURBLK  
00126 R 141052 R LAC BUFFER  
00127 R 201044 R DAC\* (31  
00130 R 061100 R LAC UNTIN  
00131 R 201057 R JMS SEARCH  
00132 R 100352 R LAC READ  
00133 R 201054 R DTXA  
00134 R 707544 A LAC WC  
00135 R 201045 R DAC\* (30  
00136 R 061076 R JMS FLGCHK  
00137 R 100454 R SZ  
00140 R 740200 A LAC STOP  
00141 R 600463 R JMP ERROR  
00142 R 201050 R LAC STOP  
00143 R 707544 A DTXA  
00144 R 201044 R LAC BUFFER  
00145 R 061100 R DAC\* (31  
00146 R 201060 R LAC UNTOUT  
00147 R 100352 R JMS SEARCH  
00150 R 201055 R LAC WRITE  
00151 R 707544 A DTXA  
00152 R 201045 R LAC WC  
00153 R 061076 R DAC\* (30  
00154 R 100454 R JMS FLGCHK  
00155 R 740200 A SZ  
00156 R 600463 R JMP ERROR  
00157 R 201050 R LAC STOP  
00160 R 707544 A DTXA  
00161 R 201052 R LAC QURBLK  
00162 R 341053 R TAD SKPBLK  
00163 R 041052 R DAC QURBLK  
00164 R 541101 R SAD (1100  
00165 R 600167 R JMP CHK11  
00166 R 500127 R JMP PASS1+1  
.EJECT

/READ DATA FROM INPUT UNIT

/WRITE DATA ONTO OUTPUT UNIT.

/UPDATE BLOCK POINTER

/ FOLLOWING ROUTINE CHECKS TAPE SIZES, TAPE CAN HAVE  
 / 1100 OR 1102 (OCT) BLOCKS.

00167 R 201044 R	CHK11	LAC BUFFER	
00170 R 061100 R		DAC* (31	
00171 R 201057 R		LAC UNTIN	
00172 R 100352 R		JMS SEARCH	
00173 R 201054 R	CHKIN	LAC READ	/CHECK INPUT TAPE
00174 R 707544 A		DTXA	
00175 R 201102 R		LAC (-1000	
00176 R 061076 R		DAC* (30	
00177 R 100454 R		JMS FLGCHK	
00200 R 740200 A		SZA	
00201 R 600463 R		JMP ERROR	/TAPE HAS 1100 BLOCKS
00202 R 201050 R		LAC STOP	/TAPE HAS 1102 BLOCKS.
00203 R 707544 A		DTXA	
00204 R 201044 R		LAC BUFFER	
00205 R 061100 R		DAC* (31	
00206 R 201060 R		LAC UNTOUT	
00207 R 100352 R		JMS SEARCH	
00210 R 201055 R	CHKOUT	LAC WRITE	/CHECK OUTPUT TAPE
00211 R 707544 A		DTXA	
00212 R 201102 R		LAC (-1000	
00213 R 061076 R		DAC* (30	
00214 R 100454 R		JMS FLGCHK	
00215 R 740200 A		SZA	
00216 R 600463 R		JMP ERROR	/OUTPUT TAPE HAS 1100 BLOCKS
00217 R 201050 R		LAC STOP	/OUTPUT TAPE HAS 1102 BLOCKS
00220 R 707544 A		DTXA	
00221 R 201103 R		LAC (1101	
00222 R 041052 R		DAC OURBLK	
00223 R 201044 R		LAC BUFFER	
00224 R 061100 R		DAC* (31	
00225 R 201057 R		LAC UNTIN	
00226 R 100413 R		JMS SEARCH	
00227 R 201054 R		LAC READ	
00230 R 707544 A		DTXA	
00231 R 201102 R		LAC (-1000	
00232 R 061076 R		DAC* (30	
00233 R 100454 R		JMS FLGCHK	
00234 R 740200 A		SZA	
00235 R 600463 R		JMP ERROR	
00236 R 201050 R		LAC STOP	
00237 R 707544 A		DTXA	
00240 R 201104 R		LAC (COMP	
00241 R 061100 R		DAC* (31	
00242 R 201044 R		LAC BUFFER	
00243 R 061105 R		DAC* (10	
00244 R 201060 R		LAC UNTOUT	
00245 R 100413 R		JMS SEARCH	
00246 R 201054 R		LAC READ	
00247 R 707544 A		DTXA	
00250 R 201102 R		LAC (-1000	
00251 R 061076 R		DAC* (30	

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DTCOPY

00252 R 100320 R  
00253 R 201050 R  
00254 R 707544 A

JMS COMAGN  
LAC STOP  
DTXA  
.EJECT

/ FOLLOWING ROUTINE IMPLEMENTS PASS2 TO CHECK FOR  
 /DATA ERRORS. A PORTION OF THE INPUT TAPE IS READ INTO  
 /CORE AND THEN A PORTION OF THE OUTPUT TAPE IS READ  
 /AND WORD BY WORD COMPARED TO INPUT. ANY ERROR RESULTS  
 /IN THE TYPE OUT "DATA COMPARE ERROR".

```

PASS2  LAC (1077
00255 R 201106 R          DAC OURBLK
00256 R 041052 R          LAC BUFFER
00257 R 201044 R          DAC* (31
00260 R 061100 R          LAC UNTIN
00261 R 201057 R          JMS SEARCH
00262 R 100413 R          LAC READ
00263 R 201054 R          DTXA
00264 R 707544 A          LAC WC
00265 R 201045 R          DAC* (30
00266 R 061076 R          JMS FLGCHK
00267 R 100454 R          SZA
00270 R 740200 A          JMP ERROR
00271 R 600463 R          LAC STOP
00272 R 201050 R          DTXA
00273 R 707544 A          LAC BUFFER
00274 R 201044 R          DAC* (10
00275 R 061105 R          LAC (COMP
00276 R 201104 R          DAC* (31
00277 R 061100 R          LAC UNTOUT
00300 R 201060 R          JMS SEARCHR
00301 R 100413 R          LAC READ
00302 R 201054 R          DTXA
00303 R 707544 A          LAC WC
00304 R 201045 R          DAC* (30
00305 R 061076 R          JMS COMAGN
00306 R 100320 R          LAC STOP
00307 R 201050 R          DTXA
00310 R 707544 A          LAC SKPBLK
00311 R 201053 R          TAD (-1
00312 R 341107 R          SAD OURBLK
00313 R 541052 R          JMP DONE
00314 R 600343 R          CMA
00315 R 740001 A          TAD OURBLK
00316 R 341052 R          JMP PASS2+1
00317 R 600256 R          .EJECT

```

/READ INPUT TAPE

/READ OUTPUT TAPE

/COMPARE ROUTINE  
 /DURING THE READING OF THE OUTPUT TAPE THIS ROUTINE  
 /SEES EACH DATA BREAK AND COMPARES THE DATA WORD  
 /TO THE APPROPRIATE WORD IN THE INPUT BUFFER. THIS  
 /ELIMINATES THE NEED FOR A BUFFER IN CORE FOR THE  
 /OUTPUT TAPE DATA DURING PASS2.

```

/
00320 R 000000 A COMAGN 0
00321 R 707573 A DTEFIDTRB
00322 R 751000 A SKPICLA
00323 R 600463 R JMP ERROR
00324 R 707601 A DTDF
00325 R 600327 R JMP .+2
00326 R 620320 R JMP* COMAGN
00327 R 221100 R LAC* (31
00330 R 541104 R SAD (COMP
00331 R 600321 R JMP COMAGN+1
00332 R 221100 R LAC* (31
00333 R 041061 R DAC TEMP
00334 R 221061 R LAC* TEMP
00335 R 560010 A SAD* 10
00336 R 600340 R JMP .+2
00337 R 600463 R JMP ERROR
00340 R 201104 R LAC (COMP
00341 R 061100 R DAC* (31
00342 R 600321 R JMP COMAGN+1
00343 R 200745 R DONE LAC MESS4 /GET WC OF MESS4
00344 R 740001 A CMA
00345 R 041066 R DAC SBWC /SHIP TO SIXBT UNPACK ROUTINE
00346 R 201110 R LAC (MESS4+1 /GET ADDR OF MESS4
00347 R 100624 R JMS SBSTRP /STRIP AND PRINT
00350 R 100702 R JMS CRLF
00351 R 600043 R JMP ASKIN /PROGRAM COMPLETE
/SYSTEM EXERCISER MUST BE CALLED
/IN AGAIN OR RESTARTED FROM
/ONE OF THE RESTART ADDRESSES.

.EJECT
  
```



/ THE FOLLOWING ROUTINE WILL SEARCH FOR THE BLOCK NUMBER  
 / SPECIFIED BY THE CONTENTS OF OURBLK. THE DESIRED UNIT  
 / NUMBER MUST BE IN AC BITS 0-2 UPON CALLING THE ROUTINE.  
 / CONTROL WILL RETURN TO USER WHEN BLOCK IS FOUND IN  
 / THE FORWARD DIRECTION.

00352	R	000000	A	SEARCH	0
00353	R	041056	R		DAC UNIT
00354	R	341046	R		TAD SRCRVN
00355	R	707545	A		DTLA
00356	R	161076	R		DZM* (30
00357	R	100454	R		JMS FLGCHK
00360	R	740200	A		SZA
00361	R	600376	R		JMP SRCFWD
00362	R	221100	R		LAC* (31
00363	R	041061	R		OAC TEMP
00364	R	221061	R		LAC* TEMP
00365	R	740001	A		CMA
00366	R	341107	R		TAD (-1
00367	R	341052	R		TAD OURBLK
00370	R	740100	A		SMA
00371	R	600376	R		JMP SRCFWD
00372	R	061076	R		DAC* (30
00373	R	201047	R		LAC MODE
00374	R	707544	A		DTXA
00375	R	100454	R		JMS FLGCHK
00376	R	201051	R	SRCFWD	LAC SRCFWD
00377	R	341056	R		TAD UNIT
00400	R	707545	A		DTLA
00401	R	100454	R		JMS FLGCHK
00402	R	740200	A		SZA
00403	R	600463	R		JMP ERROR
00404	R	221100	R		LAC* (31
00405	R	041061	R		DAC TEMP
00406	R	221061	R		LAC* TEMP
00407	R	541052	R		SAD OURBLK
00410	R	620352	R		JMP* SEARCH
00411	R	707554	A		DTXA+10
00412	R	600401	R		JMP SRCFWD+3
					.EJECT

/ A ROUTINE TO FIND A BLOCK NUMBER SPECIFIED BY OURBLK.  
 / UNIT NUMBER MUST BE IN AC.  
 / RETURN TO USER IS DONE WHEN BLOCK IS  
 / FOUND IN THE REVERSE DIRECTION.

```

00413 R 000000 A
00414 R 041056 R
00415 R 341051 R
00416 R 161076 R
00417 R 707545 A
00420 R 100454 R
00421 R 740200 A
00422 R 600437 R
00423 R 221100 R
00424 R 041001 R
00425 R 201052 R
00426 R 740001 A
00427 R 341107 R
00430 R 361061 R
00431 R 740100 A
00432 R 600437 R
00433 R 061076 R
00434 R 201047 R
00435 R 707544 A
00436 R 100454 R
00437 R 201046 R
00440 R 341056 R
00441 R 707545 A
00442 R 100454 R
00443 R 740200 A
00444 R 600463 R
00445 R 221100 R
00446 R 041061 R
00447 R 221061 R
00450 R 541052 R
00451 R 620413 R
00452 R 707554 A
00453 R 600442 R
  
```

```

SEARCHR 0
DAC UNIT
TAD SRCFWN
DZM* (30
DTLA
JMS FLGCHK
SZA; JMP SRCREV
LAC* (31
DAC TEMP
LAC OURBLK
CMA; TAD (-1
TAD* TEMP
SMA
JMP SRCREV
DAC* (30
LAC MODE
DTXA
JMS FLGCHK
SRCREV LAC SRCRVN
TAD UNIT
DTLA
JMS FLGCHK
SZA
JMP ERRDR
LAC* (31
DAC TEMP
LAC* TEMP
SAD OURBLK
JMP* SEARCHR
DTXA+10
JMP SRCREV+3
  
```

/ THE FOLLOWING ROUTINE WAITS FOR THE SETTING OF EITHER  
 / THE DECTAPE FLAG OR THE ERROR FLAG AND THEN RETURNS  
 / TO USER. IF THE ERROR FLAG IS SET , STATUS B WILL BE  
 / IN THE AC. IF THE DECTAPE FLAG SET, AC=0.

```

00454 R 000000 A
00455 R 707573 A
00456 R 751000 A
00457 R 620454 R
00460 R 707601 A
00461 R 600455 R
00462 R 620454 R
  
```

```

FLGCHK 0
DTEFI DTRB
SKP!CLA
JMP* FLGCHK
DTDF
JMP .-4
JMP* FLGCHK
.EJECT
  
```

/ FOLLOWING ROUTINE INTERPRET ANY ERRORS FOUND, PASS2

/DATA COMPARE ERRORS

```

00463 R 707572 A
00464 R 041067 R
00465 R 740100 A
00466 R 600521 R
00467 R 742010 A
00470 R 740010 A
00471 R 740400 A
00472 R 600501 R
00473 R 200352 R
00474 R 501111 R
00475 R 541112 R
00476 R 600255 R
00477 R 541113 R
00500 R 600531 R
    
```

```

ERROR DTRB
DAC SSBERR#
SMA
JMP DATAE
RTL; RAL
SNL
JMP REALER
LAC SEARCH
AND (077777
SAD (CHKIN
JMP PASS2
SAD (CHKOUT
JMP BLKERR
    
```

/REALER=STATUS B ERROR

```

00501 R 740100 A
00502 R 600514 R
00503 R 201026 R
00504 R 740001 A
00505 R 041066 R
00506 R 201114 R
00507 R 100024 R
00510 R 100702 R
00511 R 201067 R
00512 R 740040 A
00513 R 600043 R
00514 R 201034 R
00515 R 740001 A
00516 R 041066 R
00517 R 201115 R
00520 R 600507 R
    
```

```

REALER SMA
JMP REAL.1 /OTHER STATUS B ERRORS
LAC MESS10
CMA
DAC SBWC
LAC (MESS10+1
REAL.0 JMS SBSTRP
JMS CRLF
LAC SSBERR
HLT
JMP ASKIN /RESTART
REAL.1 LAC MESS11
CMA
DAC SBWC
LAC (MESS11+1
JMP REAL.0
.EJECT
    
```

```

/DATE=DATA COMPARE ERROR.
00521 R 201056 R DATAE LAC UNIT
00522 R 707545 A DTLA
00523 R 200750 R LAC MESS5
00524 R 740001 A CMA
00525 R 041066 R DAC SBWC
00526 R 201116 R LAC (MESS5+1
00527 R 100624 R JMS SBSTRP
00530 R 600043 R JMP ASKIN /RETURN TO START OF PROGRAM
/BLKERR=OUTPUT TAPE HAS 1100 BLOCKS, INPUT TAPE 1102.
00531 R 200757 R BLKERR LAC MESS6
00532 R 740001 A CMA
00533 R 041066 R DAC SBWC
00534 R 201117 R LAC (MESS6+1
00535 R 100624 R JMS SBSTRP
00536 R 200763 R LAC MESS7
00537 R 740001 A CMA
00540 R 041066 R DAC SBWC
00541 R 201120 R LAC (MESS7+1
00542 R 100624 R JMS SBSTRP
00543 R 200777 R LAC MESS8
00544 R 740001 A CMA
00545 R 041066 R DAC SBWC
00546 R 201121 R LAC (MESS8+1
00547 R 100624 R JMS SBSTRP
00550 R 600255 R JMP PASS2
.EJECT
```

/FIND OUT CORE SIZE AND ADJUST BUFFER ACCORDINGLY.

```

00551 R 000000 A
00552 R 201122 R
00553 R 041062 R
00554 R 200551 R
00555 R 501123 R
00556 R 541123 R
00557 R 600573 R
00560 R 441062 R
00561 R 541124 R
00562 R 600573 R
00563 R 541125 R
00564 R 600573 R
00565 R 441062 R
00566 R 541126 R
00567 R 600573 R
00570 R 541127 R
00571 R 600573 R
00572 R 600126 R
00573 R 201062 R
00574 R 041061 R
00575 R 201045 R
00576 R 341045 R
00577 R 441062 R
00600 R 600576 R
00601 R 041045 R
00602 R 201053 R
00603 R 341053 R
00604 R 441061 R
00605 R 500603 R
00606 R 041053 R
00607 R 600126 R
00610 R 000000 A
00611 R 501130 R
00612 R 341131 R
00613 R 741100 A
00614 R 600617 R
00615 R 341132 R
00616 R 740100 A
00617 R 751001 A
00620 R 750000 A
00621 R 620610 R
00622 R 000000 A
00623 R 740040 A

```

CORCHK

LOOP

NUMBER

SERV

```

0
LAC (-3
DAC COUNT
LAC CORCHK
AND (70000
SAD (70000
JMP LOOP
ISZ COUNT
SAD (60000
JMP LOOP
SAD (50000
JMP LOOP
ISZ COUNT
SAD (40000
JMP LOOP
SAD (30000
JMP LOOP
JMP PASS1
LAC COUNT
DAC TEMP
LAC WC
TAD WC
ISZ COUNT
JMP .-2
DAC WC
LAC SKPBLK
TAD SKPBLK
ISZ TEMP
JMP .-2
DAC SKPBLK
JMP PASS1
0
AND (77
TAD (-60
SPA
JMP .+3
TAD (-11
SNA
CLA!CMA!SKP
CLA
JMP* NUMBER
0
HLT
.EJECT

```

/CHECK FOR VALID UNIT #.

/ILLEGAL ENTRY INTO DTCOPY MODULE.

/ENTRANCE REQUIRES THAT -WC  
 /BE PRESENT IN SBWC AND  
 /ADDR OF MESSAGE BE IN A.C.

00624	R	000000	A	SBSTRP	0		
00625	R	041065	R		DAC	SBTEMP#	/SAVE ADDR
00626	R	221065	R		LAC*	SBTEMP	/GET CHARA
00627	R	740010	A		RAL		
00630	R	742010	A		RTL		/ROTATE FIRST
00631	R	742010	A		RTL		
00632	R	742010	A		RTL		
00633	R	501130	R		AND	(000077	/MASK FIRST
00634	R	541133	R		SAD	(0	
00635	R	620624	R		JMP*	SBSTRP	
00636	R	100661	R		JMS	TYPE	/PRINT IT
00637	R	221065	R		LAC*	SBTEMP	/GET CHARA
00640	R	742020	A		RTR		
00641	R	742020	A		RTR		/ROTATE SECOND
00642	R	742020	A		RTR		
00643	R	501130	R		AND	(000077	/MASK SECOND
00644	R	541133	R		SAD	(0	
00645	R	620624	R		JMP*	SBSTRP	
00646	R	100661	R		JMS	TYPE	/PRINT IT
00647	R	221065	R		LAC*	SBTEMP	/GET CHARA
00650	R	501130	R		AND	(000077	/MASK THIRD
00651	R	541133	R		SAD	(0	
00652	R	620624	R		JMP*	SBSTRP	
00653	R	100661	R		JMS	TYPE	/PRINT IT
00654	R	441066	R		ISZ	SBWC	/INC. WC
00655	R	741000	A		SKP		/DO MORE
00656	R	620624	R		JMP*	SBSTRP	/EXIT
00657	R	441065	R		ISZ	SBTEMP	/INC. MESS ADDR
00660	R	600626	R		JMP	SBSTRP+2	/STRIP NEXT

.EJECT

/ENTRANCE MUST BE MADE WITH  
/CHARACTER TO BE PRINTED  
/IN THE AC

```

00661 R 000000 A
00662 R 041070 R
00663 R 341134 R
00664 R 740100 A
00665 R 600671 R
00666 R 201070 R
00667 R 341135 R
00670 R 600673 R
00671 R 201070 R
00672 R 341136 R
00673 R 100675 R
00674 R 620661 R
00675 R 000000 A
00676 R 700406 A
00677 R 700401 A
00700 R 600677 R
00701 R 620675 R
00702 R 000000 A
00703 R 201137 R
00704 R 100675 R
00705 R 201140 R
00706 R 100675 R
00707 R 620702 R

```

```

TYPE 0
DAC TYPE.1# /SAVE
TAD (777740)
SMA
JMP .+4 /NUMERIC
LAC TYPE.1 /ALPHA
TAD (300)
JMP .+3
LAC TYPE.1
TAD (200)
JMS PRINT
JMP* TYPE
PRINT 0
TLS /PRINT
TSF /WAIT
JMP .-1 /LOOP
JMP* PRINT /EXIT
CRLF 0
LAC (215)
JMS PRINT
LAC (212)
JMS PRINT
JMP* CRLF

```

/EXIT IS MADE WITH SINGLE  
/INPUT CHARACTER IN  
/ANSW+2.

```

00710 R 000000 A
00711 R 700301 A
00712 R 600711 R
00713 R 700312 A
00714 R 541141 R
00715 R 600722 R
00716 R 541137 R
00717 R 600724 R
00720 R 041042 R
00721 R 600711 R
00722 R 141042 R
00723 R 600711 R
00724 R 100702 R
00725 R 620710 R

```

```

KBRD 0
KSF /WAIT
JMP .-1 /LOOP
KRB /GET CHARA
SAD (377) /RUBOUT
JMP KBRD1 /YES
SAD (215) /CARRIAGE RETURN
JMP KBRD1+2
DAC ANSW+2 /SAVE IT
JMP KBRD+1 /GET TERMINATOR
KBRD1 DZN ANSW+2 /CLEAR PREVIOUS
JMP KBRD+1 /GET NEXT
JMS CRLF
JMP* KBRD
.EJECT

```

00726	R	000004	A	MESS1	MESS2-MESS1-1
00727	R	040503	A		.SIXBT "DECTAPE COPY"
00730	R	240120	A		
00731	R	054003	A		
00732	R	172031	A		
00733	R	000004	A	MESS2	MESS3-MESS2-1
00734	R	111620	A		.SIXBT "INPUT UNIT:"
00735	R	252440	A		
00736	R	251611	A		
00737	R	247200	A		
00740	R	000004	A	MESS3	MESS4-MESS3-1
00741	R	172524	A		.SIXBT "OUTPUT UNIT:"
00742	R	202524	A		
00743	R	402516	A		
00744	R	112472	A		
00745	R	000002	A	MESS4	MESS5-MESS4-1
00746	R	041716	A		.SIXBT "DONE!"
00747	R	054100	A		
00750	R	000006	A	MESS5	MESS6-MESS5-1
00751	R	040124	A		.SIXBT "DATA COMPARE ERROR"
00752	R	014003	A		
00753	R	171520	A		
00754	R	012205	A		
00755	R	400522	A		
00756	R	221722	A		
00757	R	000003	A	MESS6	MESS7-MESS6-1
00758	R	270122	A		.SIXBT "WARNING!"
00761	R	161116	A		
00762	R	074100	A		
00763	R	000013	A	MESS7	MESS8-MESS7-1
00764	R	111620	A		.SIXBT "INPUT UNIT HAS 1102 (OCT) BLOCKS."
00765	R	252440	A		
00766	R	251611	A		
00767	R	244010	A		
00770	R	012340	A		
00771	R	616160	A		
00772	R	624050	A		
00773	R	170324	A		
00774	R	514002	A		
00775	R	141703	A		
00776	R	132356	A		
00777	R	000014	A	MESS8	MESS9-MESS8-1
01000	R	172524	A		.SIXBT "OUTPUT UNIT HAS 1100 (OCT) BLOCKS."
01001	R	202524	A		
01002	R	402516	A		
01003	R	112440	A		
01004	R	100123	A		
01005	R	406161	A		
01006	R	606040	A		
01007	R	501703	A		
01010	R	245140	A		
01011	R	021417	A		
01012	R	031323	A		



```

01013 R 560000 A
01014 R 000011 A MESS9 MESS10-MESS9-1
01015 R 111620 A .SIXBT "INPUT & OUTPUT UNITS SAME."
01016 R 252440 A
01017 R 464017 A
01020 R 252420 A
01021 R 252440 A
01022 R 251611 A
01023 R 242340 A
01024 R 230115 A
01025 R 055600 A
01026 R 000005 A MESS10 MESS11-MESS10-1
01027 R 251611 A .SIXBT "UNIT NOT READY"
01030 R 244016 A
01031 R 172440 A
01032 R 220501 A
01033 R 043100 A
01034 R 000002 A MESS11 ENDMESS-MESS11-1
01035 R 010217 A .SIXBT "ABORT"
01036 R 222400 A
01037 R 000000 A ENDMESS 0
01040 R A ANSW .BLOCK 4
        .IFDEF ADSS
        BUFFER 1777
        .ENDC
        .IFUND ADSS
01044 R 004777 A BUFFER 4777
        .ENDC
01045 R 764000 A WC -14000
01046 R 061000 A SRCRVN 61000
01047 R 010000 A MODE 10000
01050 R 020000 A STOP 20000
01051 R 021000 A SRCFWN 21000
01052 R 000000 A OURBLK 0
01053 R 000030 A SKPBLK 30
01054 R 013000 A READ 13000
01055 R 015000 A WRITE 15000
01056 R 000000 A UNIT 0
01057 R 000000 A UNTIN 0
01060 R 000000 A UNTOUT 0
        707545 A DTLA=707545
        707544 A DTXA=707544
        707561 A DTEF=707561
        707572 A DTRB=707572
        707601 A DTDF=707601
        707552 A DTRA=707552
        700002 A IOF=700002
        700042 A ION=700042
        700406 A TLS=700406
        700401 A TSF=700401
        700301 A KSF=700301
        700312 A KRB=700312
01061 R 000000 A TEMP;COUNT;COMP 0; 0

```

01062 R 000000 A  
01063 R 000000 A  
01064 R 000000 A  
000000 R  
01071 R 000727 R \*L  
01072 R 000734 R \*L  
01073 R 000007 A \*L  
01074 R 000741 R \*L  
01075 R 764000 A \*L  
01076 R 000030 A \*L  
01077 R 001015 R \*L  
01100 R 000031 A \*L  
01101 R 001100 A \*L  
01102 R 777000 A \*L  
01103 R 001101 A \*L  
01104 R 001063 R \*L  
01105 R 000010 A \*L  
01106 R 001077 A \*L  
01107 R 777777 A \*L  
01110 R 000746 R \*L  
01111 R 077777 A \*L  
01112 R 000173 R \*L  
01113 R 000210 R \*L  
01114 R 001027 R \*L  
01115 R 001035 R \*L  
01116 R 000751 R \*L  
01117 R 000760 R \*L  
01120 R 000764 R \*L  
01121 R 001000 R \*L  
01122 R 777775 A \*L  
01123 R 070000 A \*L  
01124 R 060000 A \*L  
01125 R 050000 A \*L  
01126 R 040000 A \*L  
01127 R 030000 A \*L  
01130 R 000077 A \*L  
01131 R 777720 A \*L  
01132 R 777767 A \*L  
01133 R 000000 A \*L  
01134 R 777740 A \*L  
01135 R 000300 A \*L  
01136 R 000200 A \*L  
01137 R 000215 A \*L  
01140 R 000212 A \*L  
01141 R 000377 A \*L

.END UODSW

SIZE=01145

NO ERROR LINES

ANSW	01040 R	ASKIN	00043 R	ASKOUT	00063 R	BLKERR	00531 R
BUFFER	01044 R	CHKIN	00173 R	CHKOUT	00210 R	CHK11	00167 R
COMAGN	00320 R	COMP	01063 R	CORCHK	00551 R	COUNT	01062 R
CRLF	00702 R	DATAE	00521 R	DONE	00343 R	OTDF	707601 A
DTEF	707561 A	DTLA	707545 A	DTRA	707552 A	DTRB	707572 A
DTXA	707544 A	ENDMES	01037 R	ERCODE	00021 R	ERROR	00463 R
FLGCHK	00454 R	INIT	00033 R	IOF	700002 A	ION	700042 A
KBRD	00710 R	KBRD1	00722 R	KRB	700312 A	KSF	700301 A
LOOP	00573 R	MESS1	00726 R	MESS10	01026 R	MESS11	01034 R
MESS2	00733 R	MESS3	00740 R	MESS4	00745 R	MESS5	00750 R
MESS6	00757 R	MESS7	00763 R	MESS8	00777 R	MESS9	01014 R
MODE	01047 R	NUMBER	00610 R	OURBLK	01052 R	PASS1	00126 R
PASS2	00255 R	PRINT	00675 R	READ	01054 R	REALER	00501 R
REAL.0	00507 R	REAL.1	00514 R	RESTR	00121 R	SBSTRP	00624 R
SBTEMP	01065 R	SBWC	01066 R	SEARCH	00352 R	SEARCR	00413 R
SERV	00622 R	SKPBLK	01053 R	SRCFWD	00376 R	SRCFVN	01051 R
SRCREV	00437 R	SRCRVN	01046 R	SSBERR	01067 R	STOP	01050 R
SYSERR	00020 R	TEMP	01061 R	TLS	700406 A	TSF	700401 A
TYPE	00661 R	TYPE.1	01070 R	UNIT	01056 R	UNITEQ	00112 R
UNTIN	01057 R	UNTOUT	01060 R	UODSW	00000 R	WC	01045 R
WRITE	01055 R						

UODSW	00000 R	SYSErr	00020 R	ERCODE	00021 R	INIT	00033 R
ASKIN	00043 R	ASKOUT	00063 R	UNITEQ	00112 R	RESTRT	00121 R
PASS1	00126 R	CHK11	00167 R	CHKIN	00173 R	CHKOUT	00210 R
PASS2	00255 R	COMAGN	00320 R	DUNE	00343 R	SEARCH	00352 R
SRCFWD	00376 R	SEARCH	00413 R	SRCREV	00437 R	FLGCHK	00454 R
ERROR	00463 R	REALER	00501 R	REAL.0	00507 R	REAL.1	00514 R
DATAE	00521 R	BLKERR	00531 R	CORCHK	00551 R	LOOP	00573 R
NUMBER	00610 R	SERV	00622 R	SBSTRP	00624 R	TYPE	00661 R
PRINT	00675 R	CRLF	00702 R	KBRD	00710 R	KBRD1	00722 R
MESS1	00726 R	MESS2	00733 R	MESS3	00740 R	MESS4	00745 R
MESS5	00750 R	MESS6	00757 R	MESS7	00763 R	MESS8	00777 R
MESS9	01014 R	MESS10	01026 R	MESS11	01034 R	ENDMES	01037 R
ANSW	01040 R	BUFFER	01044 R	WC	01045 R	SRCRVN	01046 R
MODE	01047 R	STOP	01050 R	SRCFVN	01051 R	OURBLK	01052 R
SKPBLK	01053 R	READ	01054 R	WRITE	01055 R	UNIT	01056 R
UNTIN	01057 R	UNTOUT	01060 R	TEMP	01061 R	COUNT	01062 R
COMP	01063 R	SBTEMP	01065 R	SBWC	01066 R	SSBERR	01067 R
TYPE.1	01070 R	IOF	700002 A	ION	700042 A	KSF	700301 A
KRB	700312 A	TSF	700401 A	TLS	700406 A	DTXA	707544 A
DTLA	707545 A	DTRA	707552 A	DTEF	707561 A	DTRB	707572 A
DTDF	707601 A						