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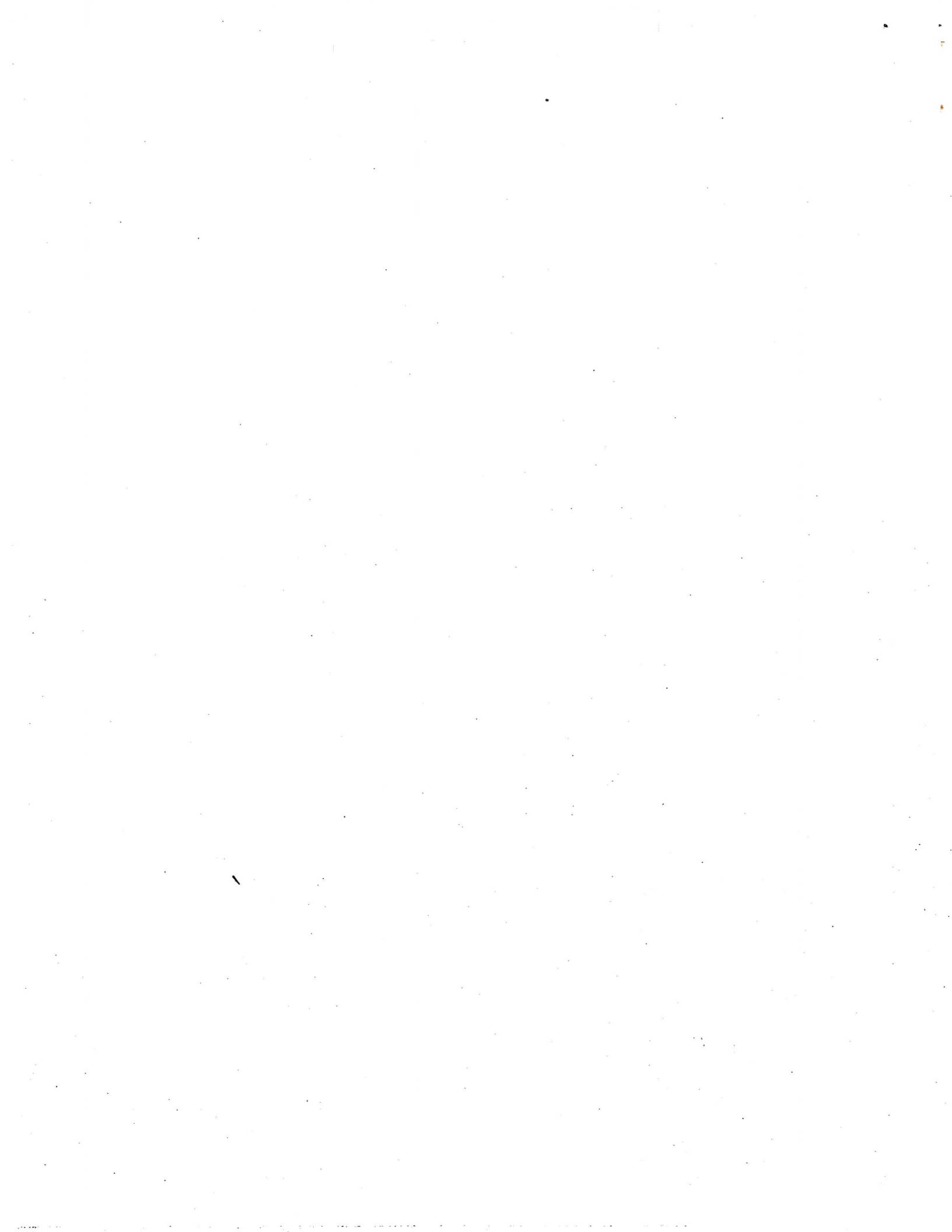
PROGRAM LIBRARY

DECUS NO.	8-871 & 12-210
TITLE	U, A PROGRAM TO TYPE OUT CCL RECOLLECTIONS
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DATE	21, SEPTEMBER 1977
SOURCE LANGUAGE	PAL8

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GENERAL INFORMATION

Object Computer(s) PDP-8 PDP-12 Source Computer (if different) _____
 File Name U.BN Version No. 1
 Title U, A PROGRAM TO TYPE OUT CCL RECOLLECTIONS
 Author Daniel P.B.Smith
 Submitter (if other than author) _____
 Affiliation Eye Research Institute
 Address 20 Staniford St.
Boston, MA 02114 Country U.S.
 Monitor/Operating System OS/8 DEC No. _____
 Core Storage Required 8K Starting Address 2600
 Peripherals Required Same as OS/8
 Other Software Required _____ DEC or DECUS No. _____
 Source Language PAI8 Category Utility, Monitor
 Restrictions, Deficiencies, Problems _____
 Date of Planned or Possible Future Revisions _____

TAPES AVAILABLE

Paper Tapes Object Binary Object ASCII Source Other _____
 DEctape LINctape Format _____ Magtape: 7 Track 9 Track BPI _____
 Object Files Source Files Documentation Files Other _____

ABSTRACT

ALTHOUGH THE CCL "RECOLLECTION" FEATURE (OS/8 HANDBOOK, P. 1-54) IS CONVENIENT, IT IS SOMETIMES ANNOYING THAT THE RECOLLECTIONS ARE TOTALLY "INVISIBLE." FOR EXAMPLE, IF A COMMAND SUCH AS ".UA" PRODUCES PUZZLING RESULTS, IT MAY BE BECAUSE THE USER HIMSELF HAS FORGOTTEN EXACTLY WHAT HE SPECIFIED.

PROGRAM "U" PROVIDES A CONVENIENT WAY OF EXAMINING CCL'S RECOLLECTIONS. FOR EXAMPLE,

.R U A

WILL TYPE OUT THE REMEMBERED "UA" COMMAND, WHILE

.R U

WILL TYPE OUT ALL OF CCL'S RECOLLECTIONS.

"U"--A PROGRAM TO TYPE OUT CCL RECOLLECTIONS
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U IS DISTRIBUTED AS A ".BN" PAPER TAPE--AS A PAPER TAPE TO MAXIMIZE
MEDIJM COMPATIBILITY, AND AS A ".BN" MODJLE TO MINIMIZE BULK. LOADING
INSTRUCTIONS ARE AS FOLLOWS:

LOADING INSTRUCTIONS
 .R ABSLDR
 *PTR:/8/9=2600\$
 .SAVE SYS U

RUNNING INSTRUCTIONS

CCL HAS A TOTAL OF SIX DIFFERENT RECOLLECTIONS, WHICH WILL BE
REFERRED TO HERE AS RECOLLECTIONS 0-5. SOME RECOLLECTIONS ARE SHARED
BY MORE THAN ONE COMMAND; FOR EXAMPLE, "MAKE" AND "TECJ" SHARE
RECOLLECTION 0 WHILE "PAL," "COMPILE", "LOAD," AND "EXECUTE" SHARE
RECOLLECTION 2.

TO RECALL A SINGLE RECOLLECTION, THE COMMAND IS

.R U <COMMAND>

WHERE "<COMMAND>" IS THE CCL COMMAND WHOSE RECOLLECTION IS DESIRED.
"<COMMAND>" MAY BE ABBREVIATED AS IN CCL. IN ADDITION, THE COMMANDS
"UA", "UB", AND "UC" MAY BE ABBREVIATED SIMPLY TO "A", "B", AND "C";
I.E. THE RECOLLECTION FOR "UB" MAY BE OBTAINED BY TYPING EITHER ".R U
UB" OR MERELY ".R U B".

A SIMPLE ".R U" WILL PRODUCE A LISTING OF ALL CCL RECOLLECTIONS.
(THIS IS ALSO THE ACTION TAKEN IF "<COMMAND>" IS UNRECOGNIZED.) IN
THIS LISTING, AS A REMINDER, EACH RECOLLECTION IS PREFIXED WITH THE
NAME OF A CCL COMMAND THAT USES IT; E.G.

```
.R U
COM TEST/G
JA .DIR/X-L
JB .SUBMIT XJOB
JC .LOAD ZAP,LPT:ZAP1,ZAP2,ZAP3
```

THIS MAY NOT, OF COURSE, BE THE SAME COMMAND WHICH CAUSED THE
RECOLLECTION TO BE REMEMBERED; E.G. THE "COM" RECOLLECTION ABOVE MIGHT
HAVE BEEN THE RESULT OF A USER COMMAND ".PAL TEST/G".

NOTE THAT CCL REMEMBERS THE "UA", "UB", AND "JC" COMMANDS
FOREVER, WHILE OTHER COMMANDS ARE REMEMBERED ONLY FOR THE CURRENT DAY.
"U" FOLLOWS THE SAME RULES. NO TYPEOUT WILL BE PRODUCED FOR COMMANDS
FOR WHICH CCL HAS NO RECOLLECTION. THUS, IF THE "PAL" RECOLLECTION IS
OUTDATED, ".R U PAL" WILL PRODUCE NO TYPE OUT (AND THE CCL COMMAND
".PAL" WILL PRODUCE THE "BAD RECOLLECTION" MESSAGE.)

"U"--A PROGRAM TO TYPE OUT CCL RECOLLECTIONS
COMMANDS

. COMMAND LIST SUMMARY

THESE ARE ALL THE COMMANDS RECOGNIZED BY "U". THE BRACKETED CHARACTERS MAY BE OMITTED IF DESIRED.

TO TYPE OUT ALL RECOLLECTIONS:

.R U

TO TYPE OUT SELECTED RECOLLECTIONS

RECOLLECTION #0

.R U MAK<E>

.R U TE<CO>

RECOLLECTION #1

.R U CREA<TE>

.R U ED<IT>

RECOLLECTION #2

.R U COM<PILE>

.R U LO<AD>

.R U PAL

.R U EX<ECUTE>

RECOLLECTION #3

.R U <U>A

RECOLLECTION #4

.R U <U>B

RECOLLECTION #5

.R U <U>C

/"U"--A PROGRAM TO TYPE OUT CCL RECOLLE PAL8-V9H 09/21/77 PAGE 1

/"U"--A PROGRAM TO TYPE OUT CCL RECOLLECTIONS

/TO TYPE OUT ALL RECOLLECTIONS:
/ .R U

/TO TYPE OUT SELECTED RECOLLECTIONS
(BRACKETED MATERIAL OPTIONAL)

/RECOLLECTION #0
/ .R U MAK<E>
/ .R U TE<CO>

/RECOLLECTION #1
/ .R U CREA<TE>
/ .R U ED<IT>

/RECOLLECTION #2
/ .R U COM<PILE>
/ .R U LO<AD>
/ .R U PAL
/ .R U EX<ECUTE>

/RECOLLECTION #3
/ .R U <U>A

/RECOLLECTION #4
/ .R U <U>B

/RECOLLECTION #5
/ .R U <U>C

/LOADING INSTRUCTIONS:
/.R ABSLDR
/U/8/9=2600s

2000 *2000
/RESERVE 2 PAGES FOR "RECALL"
2000 RECALL=.
2400 *RECALL+400

"U"--A PROGRAM TO TYPE OUT CCL RECOLLE PAL8-V9H 09/21/77 PAGE 2

/BYTE:
/CALL FROM ANY FIELD
/ JMS BYTE
/ F
/ A

/FIELD (0-7)
/ADDRESS (0000-7777)

"U"--A PROGRAM TO TYPE OUT CCL RECOLLECTIONS
LISTING

```

/      TAD P, TAD I P, DCA P, DCA I P
/WHERE
/      P IS ON SAME PAGE AS CALL
/      P IS INTERPRETED AS A BYTE POINTER
/      (0 = LEFT BYTE OF C(A))
/      TAD OR TAD I: ADD BYTE TO AC
/      DCA OR DCA I: MOVE AC TO BYTE, RETURN WITH CLEAR
AC
LINK WILL
/      IF I, P WILL BE POSTINCREMENTED ON RETURN THE
/      CONTAIN THE SIGN OF P

```

```

                2400      PAGE
/ORIGINALLY IN RALF
BYTE, 0
02400 0000      DCA SAVEAC
02401 3355      TAD BYTE          /SAVE THE CALLING PAGE
02402 1200      AND C7600
02403 0361      DCA P
02404 3351      TAD I BYTE        /PICK UP AND SAVE 3 ARGUMENT
02405 1500      ISZ BYTE
WORDS
02406 2200      DCA ADDRESS+1
02407 3350      TAD I BYTE
02410 1500      ISZ BYTE
02411 2200      DCA ADDRESS
02412 3347      TAD I BYTE
02413 1500      ISZ BYTE
02414 2200      DCA INS
02415 3345      TAD INS          /FORM ADDRESS OF P:
02416 1345      AND C177        /GET RELATIVE ADDRESS ON PAGE
02417 0357      TAD P          /ADD TO PAGE
02420 1351      DCA P
02421 3351      TAD I P        /GET POINTER
02422 1751      DCA P1        /SAVE CONTENTS
02423 3352      TAD INS        /EXAMINE INDIRECT BIT
02424 1345      RTL
02425 7006      RTL
02426 7006      SZL CLA        /IF SET,
02427 7630      ISZ I P        /INCREMENT P
02430 2751      TAD I P        /GET FINAL P VALUE
02431 1751      DCA P2        /AND SAVE IT
02432 3354      /AT THIS POINT, WE NEED NOTHING FURTHER FROM THE CALLING
DF
02433 1364      TAD CCDI
02434 6214      RDF          /SAVE CALLING DF
02435 3332      DCA RETDI     /FOR RETURN.
/COMPUTE ADDRESS OF DATA BYTE AND SET APPROPRIATE DF
02436 1352      TAD P1        /GET INDEX
02437 7004      RAL          /MOVE SIGN TO LINK
02440 7200      CLA          /EXTEND SIGN
02441 7430      SZL
02442 7040      CMA

```


02443 3353

DCA P1+1

/SAVE HIGH BITS

/"U"--A PROGRAM TO TYPE OUT CCL RECOLLE PAL8-V9H 09/21/77 PAGE 2-1

02444	1352	TAD P1	/NOTE LINK IS SIGN EXTENSION
02445	7010	RAR	
02445	7100	CLL	/DIVIDE BY 2
02447	1347	TAD ADDRES	
02450	3347	DCA ADDRES	/DOUBLE-PRECISION ADD TO ADDRES
02451	7204	CLA RAL	
02452	1353	TAD P1+1	
02453	1350	TAD ADDRES+1	
02454	7105	CLL RTL	
02455	7004	RAL	
02455	1363	TAD CCDF	
02457	3260	DCA .+1	
02460	7402	HLT	
02461	1352	TAD P1	/GET BYTE-INDICATOR BIT
02462	7010	RAR	/INTO LINK
02463	7200	CLA	
02464	1345	TAD INS	/TEST FOR TAD/DCA
02465	0360	AND C2000	
02465	7440	/HANDLE THE FOUR POSSIBILITIES AS INELEGANT SPECIAL CASES	
02467	5303	SZA	
02470	7530	JMP IDCA	
02471	5277	ITAD, SZL CLA	
		JMP ITADRB	
02472	1747	ITADLB, TAD I ADDRES	/TAD LEFT BYTE
02473	0362	AND C7700	
02474	7100	CLL	
02475	4334	JMS R6R	
02475	5301	JMP ITAD1	
02477	1747	ITADRB, TAD I ADDRES	/TAD RIGHT BYTE
02500	0355	AND C77	
02501	1355	ITAD1, TAD SAVEAC	/ADD SAVED ACCUMULATOR
02502	5325	JMP DONE	
02503	7200	IDCA, CLA	/PICK UP SAVED AC
02504	1355	TAD SAVEAC	
02505	0355	AND C77	/MASK IT. JJST IN CASE
02505	3355	DCA SAVEAC	
02507	7530	SZL CLA	
02510	5320	JMP IDCARB	
02511	1747	IDCALB, TAD I ADDRES	/PICK UP WORD
02512	4334	JMS R6R	/REPLACE LEFT BYTE
02513	0362	AND C7700	
02514	1355	TAD SAVEAC	
02515	4341	JMS R6L	

"U"--A PROGRAM TO TYPE OUT CCL RECOLLECTIONS
LISTING

```

02516 3747          DCA I ADDRES  /PUT IT BACK
02517 5325          JMP DONE

02520 1747  IDCARB, TAD I ADDRES  /PICK UP WORD
02521 0362          AND C7700
02522 1355          TAD SAVEAC    /REPLACE RIGHT BYTE
02523 3747          DCA I ADDRES  /PUT IT BACK

```

/"U"--A PROGRAM TO TYPE OUT CCL RECOLLE PAL8-V9H 09/21/77 PAGE 2-2

```

02524 5325          JMP DONE

02525 3352  DONE,   DCA P1        /SAVE AC TEMPORARILY
02526 1354          TAD P2        /SET UP LINK
02527 7004          RAL
02530 7200          CLA
02531 1352          TAD P1        /RESTORE AC
02532 7402  RETDI,  HLT           /RESTORE IF, DF
02533 5600          JMP I BYTE    /RETURN

```

```

02534 0000  /ROTATE 6 RIGHT
02535 7012  R6R,   0
02536 7012          RTR
02537 7012          RTR
02540 5734          JMP I R6R

```

```

02541 0000  /ROTATE 6 LEFT
02542 7006  R6L,   0
02543 7006          RTL
02544 7006          RTL
02545 5741          JMP I R6L

```

```

02546 0000  /VARIABLES
02547 0000  INS,    0
02550 0000  ADDRES, 0:0
02551 0000  P,      0          /ADDRESS OF POINTER
02552 0000  P1,     0:0       /INITIAL C(P)
02553 0000
02554 0000  P2,     0          /FINAL C(P)
02555 0000  SAVEAC, 0

```

```

02556 0077  /CONSTANTS
02557 0177  C77,    77
02560 2000  C177,   177
02561 7600  C2000,  2000
02562 7700  C7600,  7600
02563 6201  C7700,  7700
02564 6203  CCDF,   CDF
02564 6203  CCDI,   CIF CDF

```

/"U"--A PROGRAM TO TYPE OUT CCL RECOLLE PALB-V9H 09/21/77 PAGE 3

02600	2500		PAGE	
02600	7200	START.	CLA	
02601	4777		JMS I (SEARCH	/DETERMINE OPTION
02602	4776		JMS I (7607	/READ IN RECOLLECTION BLOCK
02603	0200		200	/INPUT 2 PAGES TO FIELD 0
02604	2000		RECALL	/TO BUFFER "RECALL"
02605	0065		65	/FROM BLOCK 65
02605	7402		HLT	
02607	1274		TAD UOPT	
02610	7510		SPA	/CHECK OPTION
02611	5214		JMP ALLOPT	/NEGATIVE MEANS LIST ALL
02612	4326		JMS PRINT	/NO OPTION: PRINT ALL
02613	5246		JMP EXIT	/PRINT IT
				/EXIT TO SYSTEM
02614	7200	ALLOPT.	CLA	
02615	3274		DCA UOPT	
02616	1375		TAD (-6	
02617	3272		DCA COUNT	
02620	1274	ALLOPL.	TAD UOPT	/SET UP FOR COUNT OF 6
02621	4774		JMS I (CHECK	/CHECK FOR GOOD RECOLLECTION
02622	5243		JMP ALLOP2	/IF IT'S BAD.
02623	1274		TAD UOPT	/DON'T PRINT ANYTHING.
02624	7104		CLL RAL	/SET BYTE POINTER TO
02625	1274		TAD UOPT	/UOPT*6
02626	7104		CLL RAL	
02627	3273		DCA TEXTP	
02630	4773	ALLOP0.	JMS I (BYTE	
02631	0000		0:ALLTEX	/PRINT THE COMMAND PART
02632	2650			
02633	1573		TAD I TEXTP	
02634	7450		SNA	
02635	5241		JMP ALLOP1	
02636	4347		JMS C6T06	
02637	4772		JMS TYPE	
02640	5230		JMP ALLOP0	
02641	1274	ALLOP1.	TAD UOPT	
02642	4326		JMS PRINT	
02643	2274	ALLOP2.	ISZ UOPT	
02644	2272		ISZ COUNT	
02645	5220		JMP ALLOPL	
02646	7200	EXIT.	CLA	
02647	5771		JMP 7600	

/OUTPUT TEXT FOR ALLOPT
/THE TEXT "TECO" WILL BE PRINTED IN FRONT OF RECOLLECTION

NO. ETC.

/ALL TEXT PARTS MUST BE EXACTLY 5 CHARACTERS LONG
ALLTEX. TEXT .TECO .

2650 2405
2651 0317

"U"--A PROGRAM TO TYPE OUT CCL RECOLLECTIONS
LISTING

```
02652 4000
02653 0504      TEXT .EDIT .
02654 1124
02655 4000
02656 0317      TEXT .CDM .
02657 1540
02660 4000
```

/"U"--A PROGRAM TO TYPE OUT CCL RECOLLE PAL8-V9H 09/21/77 PAGE 3-1

```
02661 2501      TEXT .UA .
02662 4040
02663 4000
02664 2502      TEXT .UB .
02665 4040
02666 4000
02667 2503      TEXT .UC .
02670 4040
02671 4000
02672 0000      COUNT, 0
02673 0000      TEXTP, 0
02674 0000      UDPT, 0
```

```
/JMS CHECK WITH AC IN RANGE 0-7
/SKIP IF GOOD RECOLLECTION; RETURN WITH AC CLEAR.
/SIDE EFFECT: SET RECALN TO START OF RECOLLECTION.
CHECK, 0
```

```
02675 0000      CLL RTL;RTL;RAL /MULTIPLY BY 40
02676 7106
02677 7006
02700 7004
02701 1370      TAD (RECALL      /GET RECOLLECTION ORIGIN
02702 3335      DCA RECALN      /SAVE IN RECALN
02703 1367      TAD (-1234      /CHECK "IN-JSE" FLAG
02704 1735      TAD I RECALN
02705 7540      SZA CLA      /IF IT'S NOT 1234,
02706 5675      JMP I CHECK      /RETURN WITHOUT SKIPPING.
02707 1335      TAD RECALN      /CHECK RECOLLECTION DATE;
02710 3010      DCA 10
02711 1410      TAD I 10
02712 7450      SNA      /IF ZERO, BAD
02713 5675      JMP I CHECK
02714 7040      CMA      /IF 7777, "FOREVER"
02715 7450      SNA
02716 5324      JMP CHECK1      /SO AUTOMATICALLY GOOD
02717 7001      IAC      /ELSE COMPARE WITH CURRENT DATE
02720 6211      CDF 10
02721 1766      TAD I (7666
02722 6201      CDF 0
02723 7550      SNA CLA
02724 2275      CHECK1, ISZ CHECK      /SAVE, GOOD
02725 5675      JMP I CHECK      /DIFFERENT, BAD
```

"U"--A PROGRAM TO TYPE OUT CCL RECOLLECTIONS
LISTING

```

/JMS PRINT WITH C(AC)=N IN RANGE 0-7
/PRINT CONTENTS OF RECOLLECTION NUMBER N
02726 0000 PRINT, 0
02727 4275 JMS CHECK /IF BAD RECOLLECTION.
02730 5726 JMP I PRINT /DO NOTHING.
02731 1365 PRINT2, TAD (10 /INITIALIZE BYTE POINTER TO 10
02732 3346 DCA PRINTP
02733 4773 PRINTL, JMS I (BYTE /GET A BYTE
02734 0000 0
02735 0000 RECALN, 0
02735 1745 TAD I PRINTP
02737 7450 SNA /IF ZERO.
02740 5344 JMP PRINT3 /DONE;

```

/"U"--A PROGRAM TO TYPE OUT CCL RECOLLE PALB-V9H 09/21/77 PAGE 3-2

```

02741 4347 JMS C6T08 /ELSE CONVERT IT TO 8 BITS
02742 4772 JMS TYPE /AND TYPE IT OUT.
02743 5333 JMP PRINTL /CARRY ON.
02744 4764 PRINT3, JMS CRLF /FEED THE LINE
02745 5726 JMP I PRINT /AND RETURN.
02746 0000 PRINTP, 0

```

```

/CONVERT 6-BIT TO 8-BIT
02747 0000 C6T08, 0
02750 0363 AND (77 /DON'T TRUST ANYBODY
02751 1362 TAD (40 /COMPLEMENT BIT 6
02752 0363 AND (77
02753 1361 TAD (240
02754 5747 JMP I C6T08

```

/"U"--A PROGRAM TO TYPE OUT CCL RECOLLE PALB-V9H 09/21/77 PAGE 4

```

02761 0240
02762 0040
02763 0077
02764 3000
02765 0010
02766 7565
02767 6544
02770 2000
02771 7500
02772 3005
02773 2400
02774 2575
02775 7772
02776 7607
02777 3014
3000

```

PAGE
/TYPE A CARRIAGE RETURN-LINE FEED

"U"--A PROGRAM TO TYPE OUT CCL RECOLLECTIONS LISTING

```

03000 0000 CRLF, 0
03001 1377 TAD (215
03002 4206 JMS TYPE
03003 1376 TAD (212
03004 4206 JMS TYPE
03005 5600 JMP I CRLF

/TYPE A CHARACTER IN AC, THEN CLEAR AC
03006 0000 TYPE, 0
03007 6046 TLS
03010 6041 TSF
03011 5210 JMP .-1
03012 7200 CLA
03013 5606 JMP I TYPE

0056 DOT=".877
7722 MDOT=-DOT

03014 0000 SEARCH, 0
03015 7200 CLA
03016 3261 DCA SEARP
03017 1376 TAD (-6
03020 3774 DCA UOPT
03021 1013 SEARCH1, TAD 13
03022 3014 DCA 14
03023 3262 DCA NMATCH /CLEAR NO-MATCH FLAG
03024 4773 JMS I (BYTE /CHECK FOR DOUBLE AT-SIGN
03025 0000 0;REMC0M;TAD I SEARP
03026 3063
03027 1661
03030 7440 SZA /IF NOT,
03031 5244 JMP SEARCH3 /INTO THE MAIN LOOP.
03032 2774 ISZ UOPT /ELSE BUMP THE COUNTER; IF DONE.
03033 5221 JMP SEARCH1
03034 7240 STA /RETURN NEGATIVE.
03035 5257 JMP SEARCH5
03036 4773 SEARCH2, JMS I (BYTE /GET NEXT CHARACTER
03037 0000 0;REMC0M;TAD I SEARP

```

/"U"--A PROGRAM TO TYPE OUT CCL RECOLLE PAL8-V9H 09/21/77 PAGE 4-1

```

03040 3063
03041 1661
03042 7450 SNA /IF AT-SIGN,
03043 5252 JMP SEARCH4 /END OF ELEMENT.
03044 4772 SEARCH3, JMS I (C6T08 /CONVERT TO 8-BIT
03045 7041 CIA /NEGATE IT
03046 1414 TAD I 14 /GET NEXT CHARACTER FROM MONITOR
BUFFER
03047 7640 SZA CLA /IF IT DOESN'T MATCH,
03050 2262 ISZ NMATCH /SET THE NO-MATCH FLAG.
03051 5236 JMP SEARCH2

```

```

03052 1262  SEARCH4, TAD NMATCH      /IF THE ENTRY DIDN'T MATCH.
03053 7540          SZA CLA
03054 5221          JMP SEARCH1      /TRY AGAIN;
03055 1371          TAD (6
03056 1774          TAD UOPT
03057 3774          SEARCH5, DCA UOPT
03060 5514          JMP I SEARCH
03061 0000          SEARP, 0
03062 0000          NMATCH, 0      /POINTER TO SEARCH LIST
NONZERO IF NO MATCH      /NO-MATCH FLAG; 0 IF MATCH.

```

```

/INPUT COMMAND LIST
/EACH ELEMENT CONSISTS OF THE MANDATORY PART OF A CCL

```

COMMAND THAT

```

/REMEMBERS. A SINGLE @-SIGN TERMINATES EACH ELEMENT. A

```

SECOND @-SIGN

```

/TERMINATES A GROUP OF ELEMENTS WITH THE SAME

```

RECOLLECTION; E.G.

```

/"COM", "PAL", "EX", AND "LO" SHARE RECOLLECTION #2.

```

```

03063 1501 REMCOM, TEXT
!MAK@TE@@CREA@ED@@COM@PAL@EX@LO@@A@UA@@B@UB@@C@UC@@!

```

```

03064 1300
03065 2405
03066 0000
03067 0322
03070 0501
03071 0005
03072 0400
03073 0003
03074 1715
03075 0020
03076 0114
03077 0005
03100 3000
03101 1417
03102 0000
03103 0100
03104 2501
03105 0000
03106 0200
03107 2502
03110 0000
03111 0300
03112 2503
03113 0000
03114 0000
03171 0006
03172 2747

```

03173 2400
03174 2574
03175 7772
03176 0212
03177 0215

S

/"U"--A PROGRAM TO TYPE OUT CCL RECOLLE PAL8-V9H 09/21/77 PAGE 5

ADDRES	2547	START	2600
ALLOPL	2520	TEXTP	2673
ALLOPT	2514	TYPE	3006
ALLOP0	2530	UOPT	2674
ALLOP1	2541		
ALLOP2	2543		
ALLTEX	2550		
BYTE	2400		
CCDF	2563		
CCDI	2564		
CHECK	2575		
CHECK1	2724		
COUNT	2572		
CRLF	3000		
C177	2557		
C2000	2560		
C6T08	2747		
C7600	2561		
C77	2555		
C7700	2562		
DONE	2525		
DOT	0055		
EXIT	2545		
IDCA	2503		
IDCALB	2511		
IDCARB	2520		
INS	2545		
ITAD	2470		
ITADLB	2472		
ITADRB	2477		
ITAD1	2501		
MDOT	7722		
NMATCH	3062		
P	2551		
PRINT	2725		
PRINTL	2733		
PRINTP	2745		
PRINT2	2731		
PRINT3	2744		
P1	2552		
P2	2554		
RECALL	2000		

RECALN 2735
REMCOM 3063
RETDI 2532
RSL 2541
RSR 2534
SAVEAC 2555
SEARCH 3014
SEARC1 3021
SEARC2 3036
SEARC3 3044
SEARC4 3052
SEARC5 3057
SEARP 3061

ERRORS DETECTED: 0
LINKS GENERATED: 8.

