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DECUS NO.	8-551
TITLE	COMBO
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SOURCE LANGUAGE	PAL III

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COMBO

DECUS Program Library Write-up

DECUS NO. 8-551

Purpose : Combo was developed to eliminate the time required to operate Editor and Pal-III together. The user with and PDP 8 computer can enter his program into Editor, update it, and then in one step run through a Pal pass. By setting the switch register for Pal options and raising bit 7 (7=1), the user simply types 'L' and editor will pass the user's text onto Pal without any paper tape involved. When Pal is finished, the user resets his switch register and sets bit 7=0, pal will return to Editor. For educational purposes, the console panel can remained locked. Only the switch register and keyboard are required.

Minimum Hardware : Any PDP 8 with at least 8K of memory.

Minimum Software : Dec Binary Loader
Dec Symbolic Editor
Dec Pal-III

Loading Procedure :

- 1...Using standart RIM bootstrap procedures, load the Binary Loader into field 1.
- 2...With the Bin Loader, load Symbol Editor into field 0, and Pal-III into field 1.
- 3...Load COMBO overlay directly. (tape contains field opts)

Starting Address and initialization :

Combo can be started in either field at *7600, but must always be started at this location. When started here, Combo will reset all of its pointers and proceed into the Editor command mode. Pal and Editor may not be started at there normal address.

Features :

There are no restrictions placed on eithere Pal-III, or Editor. All options have been retained.

Switch Register Changes (NOTE) :

- Symbol ed : Bit 2 has been changed to bit 5. (listing halt bit)
- Pal-III : Bit 10 gives tabs when set to zero, and no tabs when set to one. It has the inverse function of normal Pal.
- Combo : VBit 7 is used to call up Pal, and should only be set to one when 'L' command is used. However this bit is fairly failsafe.

Operating Instructions :

- 1...Start Combo at *7600 in either field, you will then be placed in the command mode.
- 2...The halts in editor for the 'P' and 'N' command have been removed, so that the panel can be locked. If the user wishes, he can replace the halts by referencing the source listing enclosed.
- 3...All editor commands remain the same, so that the user can edit his text normally.
- 4...When you are ready to assemble your program, (you must be in the command mode of Editor) set the switch registers for pal and set bit 7=1. Type 'L' and return, Combo will give your text to pal and then turn control over. At any point that you wish to abort a Pal pass, simply set bit 5=1, and type '\$'. Whenever bit 7=1 nothing that you type will be eackoed at the terminal.
- 5...When Pal-III has completed its pass, it will wait for the user to set bit 7=0. This is so that bit 7 does not accedently remain equal to 1. This wait period also gives the user a chance to set his s.w. for editor options. When bit 7 is set to 0, editor restarted and the user can update his text again, or continue on through the remain pass(s) as outlined above.
- 6...It is almost impossible to 'blow' Combo, and if there are any problems the user should unlock the panel and restart Combo at *7600.

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Good Luck.....

NOTE BENE : When you are assembling your text, you will notice that 'L' will not be eaced, you must type the return following the 'L'.

A restore tape has been provided so that Pal and Editor can be returned to their normal state after overlaid by COMBO. This tape will remove all the patches imposed by Combo.

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////////////////////////////////////
///
/// C O M B O - LINKING OVERLAY BETWEEN EDITOR AND PAL-111//
/// PANEL LOCK VERSION --- VERSION NUMBER 7.4 --- 5/26/72 //
/// BY : WILLIAM ANDERSON, JR - PORTSMOUTH ABBEY SCH. //
///
////////////////////////////////////

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FIELD 0

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*0
0000 7626 CHESET / POINTER FOR LAS SIMULATION.
0001 7600 COM001, 7600 / LIMIT OF EDITOR'S BUFFER.

*661
0661 5400 SET, JMP I 0 / JUMP TO SOFTWARE LAS.

*1147
1147 5750 COM002, JMP I COM003 / GO TO PASS MONITOR.
1150 7603 COM003, CARRY / RETURN ADDRESS.
1151 7000 COM004, NOP

*1213
1213 7000 NOP / NOP HALT FOR PUNCH COMMAND.

*1266
1266 7450 SNA / PREVENT FREEZE UP ON 'N' COMMAND.

*7600
7600 1265 COM005, TAD START / REPLACE RETURN ADDRESS IN
7601 3656 DCA I AELOC / EDITOR, FOR POST-INIT PASSES.
7602 5660 JMP I PINIT / JUMP TO LOC 200 OF PAL.

7603 4243 CARRY, JMS CHECK / CHECK FOR PASS OPTION.
7604 1261 TAD REG
7605 1262 TAD M314 / CHECK FOR 'L' LISTING OPT.
7606 7640 SZA CLA
7607 5251 JMP PRINT
7610 1263 TAD SUBST / REP. RRTURN ADDRESS BACK.
7611 3656 DCA I AELOC
7612 6213 CDI 10 / CHANGE FIELD.
7613 5660 JMP I PINIT / INITIALIZE PAL-111.

7614 4243 POSTIT, JMS CHECK / CHECK FOR PASS OPTION.
7615 1261 TAD REG
7616 1270 TAD M213 / CHECK FOR CNTL/K.
7617 7640 SZA CLA
7620 5223 JMP CONT
7621 1271 TAD K214 / CHANGE IT TO A CNTL/L.
7622 5224 JMP .+2
7623 1261 CONT, TAD REG

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7624	6213		CDI 10	
7625	5664		JMP I READ	/ CONTINUE FROM PAL-111.
7626	7604	CHESET,	LAS	/ READ SWITCH REG.
7627	3261		DCA REG	
7630	1261		TAD REG	
7631	0273		AND K100	/ CHECK FOR BIT 4. (STOP OPTION)
7632	7650		SNA CLA	
7633	5240		JMP DOWN	/ NOT THERE, LOWER BIT . 2.
7634	1261		TAD REG	
7635	0272		AND K6777	/ SET BIT 2. FOR EDITOR.
7636	1274		TAD K1000	
7637	5667		JMP I ASET	
7640	1261	DOWN,	TAD REG	
7641	0272		AND K6777	/ BRING BIT 2. DOWN.
7642	5667		JMP I ASET	
7643	0000	CHECK,	0	
7644	3261		DCA REG	/ SAVE EDITORS CONTENTS.
7645	7604		LAS	
7646	0266		AND K20	/ CHECK BIT 7. FOR PASS OPT.
7647	7640		SZA CLA	
7650	5643		JMP I CHECK	/ O.K. ? . RETURN.
7651	1261	PRINT,	TAD REG	
7652	6041		TSF	
7653	5252		JMP .-1	
7654	6046		TLS	/ PRINT PASSED CHAR.
7655	5657		JMP I AELOC1	
7656	1150	AELOC,	COM003	
7657	1151	AELOC1,	COM003+1	
7660	0200	PINIT,	200	
7661	0000	REG,	0	
7662	7464	M314,	-314	
7663	7614	SUBST,	POSTIT	
7664	1403	READ,	PAL	
7665	7603	START,	CARRY	
7666	0020	K20,	20	
7667	0662	ASET,	SET+1	
7670	7565	M213,	-213	
7671	0214	K214,	214	
7672	6777	K6777,	6777	
7673	0100	K100,	100	
7674	1000	K1000,	1000	
7675	4000	K4000,	4000	

FIELD 1

/ MODIFICATIONS TO PAL-111.

		*0		
0000	7600	RESET		/ ADDRESS LINK TO MODS.
		*240		
0240	5400	HALT,	JMP I 0	/ JUMP TO PAL MODS.
		*1401		
1401	5602		JMP I CALL	/ RETURN TO EDITOR.
1402	7606	CALL,	HOME	
1403	7000	PAL,	NOP	
		*2270		
2270	7620		SNL CLA	/ PATCH TO PAL-111, SO THAT TAB / OPTIONS ARE RESTORED WITH BIT / 10 DOWN.
		*7600		
7600	7604	RESET,	LAS	/ WAIT FOR USER TO DROP BIT 7.
7601	0212		AND KK20	
7602	7640		SZA CLA	
7603	5200		JMP.-3	
7604	6203		CDI 0	
7605	5611		JMP I ABEGIN	/ LINKS TO EDITOR MODS.
7606	6203	HOME,	CDI 0	/ RETURN TO EDITOR'S LIST ROUT.
7607	5610		JMP I ARET	
7610	1151	ARET,	COM004	
7611	7600	ABEGIN,	COM005	
7612	0020	KK20,	20	

/ t

ABEGIN	7611
AELOC	7656
AELOC1	7657
ARET	7610
ASET	7667
CALL	1402
CARRY	7603
CHECK	7643
CHESET	7626
COM001	0001
COM002	1147
COM003	1150
COM004	1151
COM005	7600
CVT	7623
DOWN	7640
HALT	0240
HOME	7606
KK20	7612
K100	7673
K1000	7674
K20	7666
K214	7671
K4000	7675
K6777	7672
M213	7670
M314	7662
PAL	1403
PNIT	7660
POSTIT	7614
PRINT	7651
READ	7664
REG	7661
RESET	7600
SET	0661
START	7665
SUBST	7663