

P A R A M E T E R U P D A T I N G R O U T I N E

1.0 C O N T E N T S

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This document is preliminary in nature and is intended as a vehicle for meeting immediate needs with regard to system familiarization and orientation. UNIVAC® Division of Sperry Rand Corporation reserves the right to change and/or modify such information contained herein as may be required by subsequent system developments.

2.0 G E N E R A L

2.1 DEFINITION

Any datum written in PAL with a data generation instruction (+n in the operation field) that should have different values at different runnings of the program is a PUP(Post-assembly Updated Parameter). The routine used to update these parameters in the object programs is called PUR (Parameter Updating Routine).

2.2 USAGE

The primary use of PUR will generally be to supply various dates to all the programs to be run in any given production cycle. It is possible to supply the same date to all runs on the MIT simply by keying it the same way in all runs. Then, by supplying a single parameter card to PUR, this date will be changed in all runs. Although dates will be the most common examples of PUPS other suggestions are:

- Run IDS for chaining of runs
- Switch settings
- Constants, such as FICA rate

By running PUR prior to the running of the programs, it is possible to examine printer output to insure accurate insertion of parameters to the runs involved.

3.0 SPECIFYING PUPs IN PAL

The value to be updated is written in PAL (as shown in the next section) and assembled with the rest of the program in such a way that it can be identified in the object code by the parameter updating routine. Object code blocks between the header and sentinel blocks are usually identified, according to instruction tape convention, by a W in character position zero. Post assembly updating parameters must be located in a separate block identified by a K in character position zero. The other fields within a K block are identical. However, the field occupying positions 32-143 (data to be loaded) is being redefined.

3.1 SOURCE FORMAT

The PUP is written in PAL using the data generation directive (see Section 3-C of the Central Processor Manual UP 3912). The following lines are an example of how a PUP is written.

<u>LINE</u>	<u>LABEL</u>	<u>OP'N</u>	<u>OPERANDS</u>
1		LDKEY	'K'
2	TAG	+6	'640112'
3		+4	'DATE'
4		+1	4
5		ORIG	\$-5

Line 1 causes a new object block to be started with a key of K.

Line 2 causes a preset value to be loaded into storage.

Line 3 identifies the PUP for latter use by the PUR.

Line 4 states the length of the identification (equals + n specified in line 3).

Line 5 resets the PAL counter so that lines 3 and 4 will not require any storage, and causes a new object block to be started with a W.

The present value must always be stated. It may be preset at assembly time to allow running the program without a prior running of the PUR.

3.2 OBJECT FORMAT

If the PUP is x characters long, character position 32 through $[32+(x-1)]$ will contain the present value.

The following n characters in the block contain an identification of this PUP. This identification may be no longer than six characters and will occupy positions $32 + x$ through $32+(x) + (n-1)$.

The next character in the block contains the length of the identification.

4.0 PARAMETER UPDATE ROUTINE

4.1 CONTROL CARDS

4.1.1 CALL CARD

The routine is an external function of CORDIAL and is called and closed in accordance with CORDIAL procedures (see UP 3940.9). The call XCOR3 commences in column one. There are no further entries in the call card.

col. 1	67	19

XCOR3		.

4.1.2 DETAIL CARD

col. 1	67	19

p	ab	p ₁ , p ₂

P is required in column one.

a = the mode and density code as described in the CORDIAL specifications.

b = C for IIIC or VIC tape units, blank for IIIA tape units

p₁ = number of input tape unit.

p₂ = number of output tape unit.

4.1.3 UPDATE CARD

Update cards may be in any order.

col. 1	67	19

c	'dddd'	p ₁ , 'p ₂ '

c = *, indicating there is a run ID commencing in column seven, otherwise it is blank.

dddd = program ID in quote marks, or blank.

p₁ = the new value to which the parameter specified by p₂ is to be set. This value is written in the PAL form, i.e., in quotes if alphanumeric, preceded by a zero if octal, otherwise it is decimal (not XS-3).

p₂ = ID of the parameter to be updated (corresponds to 'DATE' in line 3, sec. 3.1).

If column one is blank, every K block on the input tape with an ID matching p₂ will be reset to the value of p₁. If there is an asterisk in column one, the K block will not be modified unless it is contained within the program identified in column seven.

4.1.4 END CARD

col. 1	67	19

W		
WC		

A W in column one causes control to be returned to the Executive Routine with a 070001 stop. A WC causes control to be returned to CORDIAL.

4.2 OUTPUT

- a. Updated master instruction tape (MIT) on the tape unit specified by p_2 in detail card.
- b. Printer Listing

All K blocks modified are listed on the printer. The column headed REL gives the relocation indicator. It means that the starting address given is the base address and will be modified by the loader.

Note that dating constants may be entered in three forms: alphanumeric, decimal, or octal. The entry form is not recoverable, therefore printouts of dating constants are standard printer characters as shown on the 1050 coding card. The printed output can be checked as follows.

alphanumeric - the printout will be identical to the input.

decimal - convert standard printer character to octal equivalent and then convert octal to decimal.

octal - convert standard printer character to octal equivalent.

If an update card is not used to modify a K block, i.e., if the ID of the constant did not match the ID of any K block on tape it will be listed on the printout. It should be noted that when the further restriction of a run ID in column seven is imposed, other combinations arise which can result in the card not being used.

4.3 ERROR CHECKS

- a. If the P card is not the first card after the call card, control is returned to the Executive and stop display 070001 is executed.
- b. If parameter 1 or 2 is missing from the P card control will be returned to the Executive and stop display 070001 is executed.

4.4 DISPLAYS

There are no PUR stop displays. In loading the dating routine two CORDIAL stops are encountered: the initial stop 020011, followed immediately by a stop showing the permissible block size. It is possible to calculate the number of update cards permitted by using this block size display. Convert the display to decimal, subtract 165 and divide by 26. The result is the number of update cards permitted in a single run.

4.5 RESTRICTIONS

- a. The PUR will calculate a limit for the number of update cards based on available storage. If this limit is reached subsequent cards will pass through the reader but will not be read into storage. The number of cards thus bypassed will be noted on the log and can serve as input to a second run. In single program operation the maximum input permitted is 150 update cards.
- b. If two or more K blocks within the same run carry the same ID it is not possible to set them to different values.
- c. The length of the dating constant is defined at assembly time. The PUR obtains this length from the K block and uses it as the L operand in modifying the parameter. Thus it is not possible to modify a parameter properly unless the entire parameter is specified.
- d. The Parameter Update Routine will write a second Z block in the contingency mode for IIIA tapes. Thus a read forward to the end of tape followed by a write on the same tape will be successful.

APPENDIX A - EXAMPLE OF PUR INPUT CARDS

Following are typical input cards for dating an MIT:

Card Col.1		6 7	19
1	\$CORØ		
2	XCOR3		
3	P	3 C	2, 3
4			'2 FEB 65', 'CHRONO'
5	*	'AJAX'	388, 'BLID'
6	W		

Card

- 1 Calls CORDIAL
- 2 Calls PUR
- 3 Detail card indicates IIIC tapes, density 556 ppi, binary coded, input tape unit two, output tape unit three.
- 4 Causes any K block on the tape carrying an ID of CHRONO to be modified to the value shown.
- 5 Any K block in the program 'AJAX' carrying an ID of 'BLID' will be set to the decimal value 388.
- 6 End card. Lack of a C in column two will result in return to the Executive with a 070001 stop display.