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PLANIT Utility Program -
PUPTWO User Manual

Manpower & Educational
Systems Technical Area

August 1976

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SECURITY CLASSIFICATION OF THIS PAGE (When Data Entered)

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM	
1. REPORT NUMBER Research Product 80-10	2. GOVT ACQUISITION NO. 9	3. RECIPIENT'S CATALOG NUMBER Research product sent.	
4. TITLE (and Subtitle) PLANIT UTILITY PROGRAM - PUPTWO USER MANUAL		5. TYPE OF REPORT & PERIOD COVERED 14	
7. AUTHOR(s) Data Systems Division, Litton Systems, Inc.		6. PERFORMING ORGANIZATION REPORT NUMBER Document No. 125201-991	
9. PERFORMING ORGANIZATION NAME AND ADDRESS Data Systems Division, Litton Systems, Inc. 800 Woodley Avenue Van Nuys, CA 21409		8. CONTRACT OR GRANT NUMBER(s) 15 DAHC19-76-C-0014 new	
11. CONTROLLING OFFICE NAME AND ADDRESS Army Research Institute for the Behavioral and Social Sciences (PERI-OK) 5001 Eisenhower Avenue, Alexandria, VA 22333		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 16 2Q763743A771	
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		12. REPORT DATE 11 August 1976	13. NUMBER OF PAGES 13
		15. SECURITY CLASS. (of this report) UNCLASSIFIED	15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited			
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)			
18. SUPPLEMENTARY NOTES			
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) PLANIT (Programming Language for Interactive Teaching) Software support PLANIT utility program			
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) This document is a user's manual for the revised PLANIT Utility Program (PUPTWO), which executes on the AN/GYK-12 (V) computer under the Programming Support System (B) Operating System (PSS/OS). PUPTWO contains specialized utility routines to accomplish specific tasks in support of the installation of PLANIT, and it will run in any PSS/OS system.			

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Accession For	
NTIS OMAI	<input checked="" type="checkbox"/>
DDC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By _____	
Distribution/	
Availability Codes	
Dist	Avail and/or special
A	

SECTION 1

INTRODUCTION

1.1 PURPOSE

The PLANIT Utility Program (PUPTWO) is a utility program that executes on the AN/GYK-12 (V) under the Programming Support System (B) Operating System (PSS/OS). PUPTWO contains specialized utility routines, developed to accomplish specific tasks in support of the installation of PLANIT on the AN/GYK-12 (V) computer.

1.2 ORIGINAL PUP REPLACEMENT

PUPTWO, as well as SSTGEN and utility programs available under PSS/OS, replace the functions performed by the original PLANIT Utility Program (PUP). The original PUP is still a valid program but is limited because it is a stand-alone program requiring a PEBU and IBM peripheral equipment for execution. The current PUPTWO will also run in the PEBU environment but since it runs under PSS/OS it will run in any PSS/OS system.

1.3 REFERENCE DOCUMENTS

58600-906

PSS (B) User Manual

USACSCS-TF-1-1/2-1

SECTION 2

CONTROL CARD FORMATS

The purpose of the control cards is to select execution time options, the output media, the input media and file identification and other control directives. The control commands recognized by PUP TWO are shown in Figure 2-1.

COMMAND	CLASS	PARAGRAPH
*IN *OUT	input/output	2.2
*DATA	task control	2.3.1
*LESSON		2.3.1
*FDATA		2.3.2
*FLESSON		2.3.2
*PLANIT		2.3.3
*END	termination	2.4

Figure 2-1. PUP TWO Control Card Commands

2.1 GENERAL CONTROL CARD RULES

The following rules are applicable to PUP TWO control cards:

- a. The control card must begin with asterisk (*) in column 1, followed by the command, without any intervening blanks.
- b. The operand field of the control card begins in column 10 for control cards requiring parameters. Multiple required or optional parameters are separated by commas with no intervening blanks. Positional parameters (if required) must precede keyword parameters.
- c. The last parameter must be followed by at least one blank column. The remainder of the card is available for user comments.

Example:

```
COLUMN
1      10
*IN    FILEA,,TAPE,L
*OUT   FILEB,,TTC
*LESSON LIST
*END
```

2.2 INPUT/OUTPUT COMMANDS

```
*IN      FILENAME,MEMBERNAME, [DISK], [VERS=XXX],L
                                [TAPE], [VOL=YYYY],L
                                [TTC]
```

and

```
*OUT     FILENAME,MEMBERNAME, [TAPE],VOL=YYYY,L
                                [TTC]
```

The first two PUPTWO control cards for any task are the *IN and *OUT cards. The *IN and *OUT control cards may have both positional and keyword parameters as described in the following subparagraphs.

2.2.1 POSITIONAL PARAMETERS

Positional parameters must be coded first in the operand field. The first positional parameter on a PUPTWO INPUT/OUTPUT control card is always the FILENAME, the second positional parameter on the card is always the MEMBERNAME. Absence of either positional parameter is indicated by a comma (a null field).

Examples:

```
COLUMN
1      10

*IN                                     Blank in column 10 indicates
                                         jobstream (card reader) input.

*IN      FILEA,,TTC                     TTC input.

*IN      FILEX,MEMX,DISK                 Disk file input.

*OUT     FILEOUT,,TAPE,L                 Labelled commercial tape
                                         output.

*OUT                                     Blank in column 10 indicates
                                         no TAPE or TTC output.
```

2.2.2 KEYWORD PARAMETERS

Keyword parameters may be placed in the operand field, in any order, following all positional parameters. The absence or default value of a keyword parameter need not be specified. The keyword parameters recognized by PUPTWO are as follows:

- a. VOL. Volume serial number identifier; this allows a particular volume to be specified for access, e.g., VOL=9832. If an ampersand (&) precedes the parameter (e.g. &TAPEF), the volume assignment is deferred until run-time when it is assigned by the computer operator. A maximum 6-character parameter is permitted (including the ampersand). By convention the serial number of a Tape Transport Cartridge (TTC) is its reel number. The default value for an input tape is &INPUT, the default value for an output tape is &LOAD.
- b. VERS. A one to three digit version identifier (i.e. level number) for an SPS disk file. The default value is the latest version.
- c. DISK. Specifies the SPS disk as the input file. Normally disk files will have a filename and a membername but a temporary file may not have a membername.
- d. TAPE. Specifies commercial tape as the input or output media. Tape files will usually not have membernames. If the tape is labeled, then the filename must be exact. The filename for an unlabeled tape may be any name, preferably descriptive of the data.
- e. TTC. Specifies a Tape Transport Cartridge as the input or output media. Since TTCs are not labeled, the filename parameter may be any name, preferably descriptive of the data.
- f. L. Specifies labeled tape if TAPE is also specified. If labeled tape is used as input or output the filename and membername (if used) must be exact. A labeled tape may contain more than one file. If L is not used the tape will be unlabeled and may consist of only a single file.

2.3 TASK CONTROL

A single task control card follows the *IN and *OUT control cards. It specifies the task to be performed as well as specifying LIST and PUNCH options if allowed.

2.3.1 Card Image Data To Field Format

Two control cards will cause card image data to be converted into the PLANIT system blank suppressed, blocked data records as described in appendix C. The option of Listing and/or punching the card images as the conversion takes place is provided. The two control cards are as follows:

*DATA LIST,PUNCH

*LESSON LIST,PUNCH

Either card will produce an identical tape or TTC file and identical punched cards if the PUNCH option is specified.

If the LIST option is selected then the listing format depends on the command used:

- a. *DATA produces a card image listing with sequence numbers on the right hand side of the page.
- b. *LESSON produces a formatted lesson listing almost identical to that produced by PLANIT. The sequence numbers are also printed on the right hand part of the page. Any errors detected by PUPTWO will cause a diagnostic message to be printed on the right side of the page (see appendix D).

The card image input for this task may be any of the following:

- a. Cards following the *DATA or *LESSON card and terminated by the *END card.
- b. Tape or Disk librarian source files blocked from 1 to 10 records per block. Logical record size is 21 words (84 characters).
- c. Tape or Disk files with 80 character block size (single card image).

2.3.2 Field Format to Card Image Data

Two control cards will cause a PLANIT written, blank suppressed, blocked record tape file to be converted to card images. The option of LISTING and/or PUNCHING the card images while conversion takes place is provided. The two control cards are as follows:

*FDATA LIST,PUNCH

*FLESSON LIST,PUNCH

Either card will produce identical tape, TTC or punched cards. If the LIST option is specified then the listing format is determined by the command used:

- a. *FDATA produces a card image listing with sequence numbers on the right hand side of the page.
- b. *FLESSON produces a formatted lesson listing with card sequence numbers on the right hand side of the page. Any errors detected by PUPTWO will cause a diagnostic message to be printed on the right side of the page (see appendix D).

The card image output on tape or TTC will be 80 character records blocked 10 cards per block. Although the TTC can be selected for output it is a poor medium for card image data.

2.3.3 PLANIT Source Tape To Separate Files

*PLANIT no parameters

This control card (no list or punch options) converts an ASCII tape with the entire PLANIT source code into a labeled multi-file output tape, suitable for compiling directly or for use as input to the tape or disk librarian programs.

The input tape may be labeled or unlabeled and must contain 80-character ASCII card images blocked from 1 to 10 cards per block. FILECOMP, a utility routine described in the PSS/OS User Manual, may be used to convert an EBCDIC tape to ASCII format.

The output tape will contain 80-character card images blocked 10 cards per block. The logical record size is 20 (80-characters).

The 1st nine cards of each written file are printed as well as cards beginning with "&" or "\$\$\$\$" in column 1. The current file is closed and a new file started after writing an "&ENDPROG" card image or an "\$\$\$\$" card image.

The *OUT card must contain at a minimum a 4 character FILENAME and be specified as a labeled commercial tape. The following format is recommended.

*OUT XXXXXX,,TAPE,Vol=&XX,L

The files created for the above will then be named:

XXXXXX	for	PLANIT
XXXX01	for	PLAN1
XXXX02	for	PLAN2
..
XXXX08	for	PLAN8
XXXX09	for	PLANIT common
XXXX10	for	the PLANIT MAP
XXXX11	for	the cards file

The file names are printed as they are opened as well as at the end of job with the physical tape volume assignments.

2.4 TERMINATION

*END no parameters

The *END card is the last control card in a PUPTWO job step and causes the input and output devices (files) to be closed. It also causes an item and error count line to be printed.

APPENDIX A
ERROR MESSAGES

The following messages will be printed by PUP TWO when errors are detected. The messages will include the text indicated in capital letters:

<u>ERROR</u>	<u>DESCRIPTION</u>
01	CONTROL CARD ERROR. Invalid control card or invalid field on control card. Card will be ignored.
02	OUTPUT FILE NOT OPENED. *OUT card parameters not correctly accepted by PSS/OS; verify *OUT card parameters.
03	INPUT FILE NOT OPENED. *IN card parameters not correctly accepted by PSS/OS; verify *IN card parameters.
04	NO INPUT DEVICE SELECTED. No *IN control card or bad parameters.
05	NO OUTPUT DEVICE SELECTED. No *OUT control card, bad parameters on *OUT card or no LIST (PUNCH) option selected.
06	EOF MARK FOUND ON FIELD TAPE. Expected input was a PLANIT blanked suppressed, blocked data record tape or TTC. Presence of End-of-File mark indicates that it wasn't.
07	TAPE NOT PACKED FORMAT. Expected input was PLANIT blank suppressed, blocked data record tape or TTC. 81 characters were scanned without detecting a valid control character.

APPENDIX B

SAMPLE JOBS

This appendix includes sample job decks for accomplishing specific tasks. Note that any PUPTWO job will require a minimum of two job-steps. The first jobstep is to load PUPTWO into the system from cards, tape or disk using the program TPBUILD. The second is the execution of the specific task using the program PUPTWO.

Sample job 1:

```
Col      Col      Col      Col
1        10       20       30

()JOB    DZABAHOO,HOFF,CLAS=A,TAPE=1
()FILE   OBJDECK,HBPUPTWO,UNIT=7,ACSS=READ,IDIS=SHR
()EXEC   TPBUILD
FILE     OBJDECK   HBPUPTWO
&&DLIM
()EXEC   PUPTWO
*IN      FMLES,,TAPE,VOL=2133,L
*OUT     FIREM,,TTC,VOL=&TTC1
*LESSON  LIST
*END
()END
```

In the above job PUPTWO object is located on disk. The PUPTWO job-step converts a librarian tape file (FMLES) to a blocked, blank suppressed TTC file and produces a formatted lesson listing while doing so.

Sample Job 2:

```
Col      Col
1        10

()JOB    DZABAH01,HOFF,CLAS=A
()EXEC   TPBUILD
CARD
1 PUPTWO                OBJECT DECK FOR PUPTWO
   ...                OBJECT DECK FOR PUPTWO
   ...                OBJECT DECK FOR PUPTWO
9 PUPTWO                OBJECT DECK FOR PUPTWO
&&DLIM
()EXEC   PUPTWO
*IN      STURCDS,,TTC,VOL=&STU
*OUT
*FDATA   LIST,PUNCH
*END
()END
```

In the above job the PUPTWO object deck is in card format. The PUPTWO jobstep converts a blocked, blank suppressed field TTC to card output while listing the data.

Sample job 3:

```
Col      Col
1        10

()JOB    DZABAH02,HOFF,CLAS=A,TAPE=2
()EXEC   TPBUILD
CARD
1 PUPTWO                OBJECT DECK FOR PUPTWO
   ...                OBJECT DECK FOR PUPTWO
   ...                OBJECT DECK FOR PUPTWO
9 PUPTWO                OBJECT DECK FOR PUPTWO
&&DLIM
()EXEC   PUPTWO,NODUMP
*IN      PLSOURCE,,TAPE,L,VOL=9631
*OUT     XXXXXX,,TAPE,L,VOL=&SRCE
*PLANIT
*END
()END
```

In the above job the object deck for PUPTWO is located on punched cards. The PUPTWO jobstep converts a single file ASCII source tape of the entire PLANIT system to individual program and data files.

APPENDIX C

BLANK SUPPRESSED, BLOCKED DATA RECORDS

This appendix describes the blank suppressed, blocked data record format generated by PUP TWO and used by PLANIT for ASCII card data on tape. The process consists of dropping the trailing blanks from a 72-column card image and packing the truncated card image in 2000-word blocks to be written on tape. Three special characters are packed with the data for control purposes. The special characters are as follows:

- a. FC (hexadecimal) - indicates the end of a card image.
- b. FD (hexadecimal) - indicates the end of a physical tape record (no more card data in this record).
- c. FE (hexadecimal) - the end-of-file indicator for the entire data set. This is not to be confused with nor take the place of the PLANIT End-of-File indicator \$\$\$\$.

Figure C-1 shows portions of a typical source deck and the resultant packed format.

ORIGINAL CARDS

*DATA (CARD SOURCE DATA DECK)
THIS IS THE SOURCE FOR
A TYPICAL DATA
DECK. THE
...
...
...
THESE LAST CARDS REPRESENT THE CARDS
NEAR THE END OF THE "TO BE WRITTEN"
DATA BLOCK.
FOLLOWING IS THE LAST CARD OF THE SET.
\$\$\$\$
*END

RESULTANT PACKING

THIS IS THE SOURCE FOR ^{FC}▼ A TYPICAL DATA ^{FC}▼ DECK. THE ^{FC}▼ ...
... ^{FC}▼ DATA BLOCK. ^{FC}▼ ^{FD}▼
FOLLOWING IS THE LAST CARD OF THE SET. ^{FC}▼ \$\$\$\$ ^{FC}▼ ^{FE}▼

Figure C-1. Typical Source and Packed Data Format

APPENDIX D

FORMATTED LESSON LISTING DIAGNOSTICS

The following diagnostic messages are printed if a file is listed using either the *LESSON or *FLESSON control cards. The diagnostic messages are printed on the right hand side of the page. The total number of diagnostic messages are added to the error count and printed at the end of the lesson listing.

<u>MESSAGE</u>	<u>ADDITIONAL DESCRIPTION</u>
NO FRAME TYPE	A group 1 (1 in column 1) frame card did not have a frame type enclosed in parenthesis. Legal values would be (Q), (M), (D) or (P).
UNKNOWN FRAME TYPE	The Frame type indicated on the group 1 card was not (Q), (M), (D), or (P).
UNKNOWN GROUP	The group number (number in column 1) is not defined for the frame type Q, M, D, or P, specified.
UNKNOWN FRAME OR GROUP	The group number (number in column 1) is not defined for the frame type specified. The frame type specified on the previous group 1 card may also be in error.