TOPS–20
PASCAL Installation Guide

AA–N306A–TM

September 1983

This document contains instructions for installing the TOPS–20 PASCAL compiler on the TOPS–20 operating system.

OPERATING SYSTEM: TOPS–20 V5.1 (2040,2060)
TOPS–20 V4.1 (2020)

SOFTWARE: PASCAL V1.0
LINK V5.1
RMS V1.2

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PREFACE

This document is a complete installation and verification package for TOPS-20 PASCAL.

The audience for this document is the system manager or operator, one who is familiar with the installation and operation of the system software.

For more information concerning the installation of software, refer to the TOPS-20 Software Installation Guide.

This document uses the following conventions:

(RET)	This symbol indicates where you press the RETURN key.
Contrasting Colors	Orange - Where examples contain both user input and computer output, the characters you type are in orange; the characters printed on the terminal are in black.

1.0 Introduction

This document describes the procedures for installing Version 1 of the following software on TOPS-20:

PASCAL.EXE	PASCAL compiler
PASLIB.REL	PASCAL run-time and math library
PASOTS.EXE	PASCAL object-time system
PASDDT.REL	PASCAL debugger

Note that LINK-20 Version 5.1 and RMS-20 Version 1.2(71), or later, are required to run PASCAL Version 1. If you plan to rebuild from command files, you also need MAKLIB Version 2.2.

PASCAL, PASLIB, PASOTS, PASDDT, and .HLP files should be installed on SYS:.

The release is in the form of a 1600 BPI PASCAL distribution tape written in TOPS-20 DUMPER format containing five savesets.

2.0 Contents of the Distribution Tape

The distribution tape consists of the following savesets:

1. PASCAL-DOCUMENTATION

   This saveset includes all PASCAL documentation files.

2. PASCAL-SYSTEM

   This saveset includes the .EXE, .REL, and .HLP files that should be installed on SYS:.

3. PASCAL-TEST

   This saveset includes the UETP tests and the .VER file. It also includes a .CTL file that runs the same tests without using UETP.

4. PASCAL-OTS-DEBUGGER

   This saveset includes the .REL files for PASOTS and PASDDT and all intermediate files generated when building these .REL files.

5. PASCAL-COMPILER

   This saveset includes the .REL files for the compiler and all intermediate files generated when building the compiler.

3.0 Installing PASCAL

The following files comprise the PASCAL compiler and object-time system. Merely copying these files from the second saveset on the distribution tape provides a working PASCAL system. The files are:

```
PASCAL.HLP
PASCAL.EXE
PASOTS.EXE
PASLIB.REL
PASDDT.REL
PASDDT.HLP
```

Perform the following steps to install the PASCAL system:

➡ STEP 1

LOGIN as the operator or as a user with WHEEL privileges.

➡ STEP 2

Type the ENABLE command.

➡ STEP 3

Mount the PASCAL distribution tape. See the TOPS-20 Software Installation Guide

➡STEP 4

Use the BUILD command to create directories for the contents of the PASCAL distribution tape. You can use directory names of your choice. Type the following commands:

```
$BUILD <DOC-directory>       !Give directory name of your choice
$$WORK 100
$$FERM 100
$$DIRECTORY group            !One of your user groups.  If none,
$$ (RET)                     !ask system manager for a group number

$BUILD <RUN-directory>
$$WORK 400
$$FERM 400
$$DIRECTORY group            !Same group as above
$$ (RET)

$BUILD <TESTS-directory>
$$WORK 200
$$FERM 200
$$DIRECTORY group            !Same group as above
$$ (RET)

$BUILD <PASOTS-directory>
$$WORK 400
$$FERM 400
$$DIRECTORY group            !Same group as above
$$ (RET)

$BUILD <COMPILER-directory>
$$WORK 800
$$FERM 800
$$DIRECTORY group            !Same group as above
$$ (RET)
```

➡STEP 5

Use the DUMPER program to restore the files from the distribution tape to disk. If you do not want to restore a particular saveset, just replace the particular RESTORE command with a SKIP 1 command. Type the following:

```
$DUMPER
DUMPER>TAPE MTAn:
DUMPER>REWIND
DUMPER>FILE
DUMPER>DENSITY 1600
DUMPER>ACCOUNT SYS
DUMPER>RESTORE PS:<*>*.*.* (TO) <DOC-directory>*.*.*
DUMPER>RESTORE PS:<*>*.*.* (TO) <RUN-directory>*.*.*
DUMPER>RESTORE PS:<*>*.*.* (TO) <TESTS-directory>*.*.*
DUMPER>RESTORE PS:<*>*.*.* (TO) <PASOTS-directory>*.*.*
DUMPER>RESTORE PS:<*>*.*.* (TO) <COMPILER-directory>*.*.*
DUMPER>UNLOAD
DUMPER>EXIT
```

➡ STEP 6

Follow the "Special Instructions" (if any) at the end of the cover letter. Also, read the PASCAL .BWR file in the <DOC-directory> for any last minute instructions.

➡ STEP 7

Install the PASCAL system software to SYS: by giving the commands:

```
$COPY <RUN-directory>*.* SYS:*.*
$COPY <RUN-directory>*.HLP HLP:*.*
```

3.1 System Verification (UETP)

Perform the following procedures to test the PASCAL system:

➡ STEP 1

Install the PASCAL UETP test module by giving the commands:

```
$COPY <TESTS-directory>*.* PS:<UETP.LIB>*.*
```

Note to run UETP, you must have OPERATOR privileges, IPCF privileges, and be in USER group 100.

➡ STEP 2

Once the PASCAL system components have been placed on SYS:, (see Section 3.0, STEP 7 above) you can run the UETP test module provided by giving the following commands:

```
$BUILD PS:<UETP.PASCAL>
$$DIRECTORY 100
$$USER 100
$$PERM 200
$$WORK 200
$$ (RET)
$CONNECT PS:<UETP.RUN>
$DEFINE DSK:  DSK:,PS:<UETP.LIB>
$DELETE PASCAL.LOG,RUN.LOG,EXCEPT.LOG
$RUN UETP
UETP>ENABLE PASCAL/DEPTH:VERIFICATION
UETP>BEGIN
UETP>STATUS  !to set status of Job
UETP>EXIT
$DEFINE DSK:
```

NOTE

If you have not installed the PASCAL components on SYS:, you must edit PASCAL.VER in PS:<UETP.LIB> to set up your SYS: definition.

If any errors occur, UETP reports them at your terminal and in the file EXCEPT.LOG. For more information on UETP, see the UETP Procedures/Reference Manual in the TOPS-20 Notebook Set.

➡STEP 3

If desired, run the standalone PASCAL test module provided. First, edit the file P20TST.CMD to set up SYS: and DSK: definitions. Then give the following commands:

```
$CONNECT <TEST-directory>
$DELETE P20TST.LOG
$SUBMIT P20TST.CTL/TIME:0:02:00
```

Note on a KS10 processor, you need /TIME:25:00.

When the test batch job is completed, the P20TST.LOG file must be examined to make sure that none of the tests branched to the error label UERR:.

➡STEP 4

Run your own tests if desired.

3.2 Clean-up

After you have completed testing, you can destroy any directories you do not need. For each directory you want to destroy, give the following commands:

```
$BUILD <name-of-directory-to-destroy>
KILL
! (RET)  TO CONFIRM
! (RET)  TO EXIT BUILD
```

Note that a directory cannot be deleted unless all of its subdirectories have been deleted.

3.3 Building with Autopatch

When the installation is complete, you may want to set up PASCAL for Autopatching. See the TOPS-10/TOPS-20 Autopatch Procedures Reference Manual, and any PASCAL specific information provided with Autopatch documentation files.

3.4 Building without Autopatch

If you have the need to make changes to the PASCAL files, you can rebuild them by using the command files provided on the tape.

To build the library PASLIB.REL from PAS2L1.REL, do the following:

```
@CONN <PASOTS-directory>
@MAKLIB
*@PAS2L1.MKL
*^Z
```

To build PASOTS.EXE, do the following:

```
@CONN <PASOTS-directory>
@LINK
*@PAS201.LNK
@GET PASOTS
@SAVE PASOTS 400 577
```

To build the PASCAL compiler, be sure that PASLIB.REL is on SYS:. Then, do the following:

```
@CONN <COMPILER-directory>
@LINK
*@PAS2C1.LNK
@RUN PASCAL
@SAVE PASCAL 0 577
```

To build the debugger PASDDT, do the following:

```
@COPY PAS2D1.REL PASDDT.REL
```

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