PERKIN-ELMER

PERKIN-ELMER SERIES 3200

WRITABLE CONTROL STORE

(WCS) SUPPORT

SOFTWARE PACKAGING INFORMATION DOCUMENT

Consists of Packaging Information For:

Magnetic Tape (800 BPI) Package	04-174M31R01
Magnetic Tape (1600 BPI) Package	04-174M71R01
Disk (16Mb) Package	04-174MD1R01
Disk (16Mb with IDC Format) Package	04-174MG1R01
Disk (25Mb) Package	04-174MJ1R01

04-174M95R01

TABLE OF CONTENTS

PREFACE

N O T E S

1. Please note additional copies of this document may be created by using the EDIT/32 Utility.

Example:

```
LOAD EDIT32
TASK FDIT32
START
GET WCS.M95
SAVE print-device:
END
```

The user should check his configuration for the particular print device in use.

2. New, revised or updated material will be denoted by bars appearing in the left or right margins of this document.

1 PRODUCT IDENTIFICATION

Product:	Perkin-Elmer Series 3200 Writable Control Store (WCS) Software Package
Perkin-Elmer Part Number:	04-174 R01

2 AVAILABLE PACKAGES

The Perkin-Elmer Series 3200 Writable Control Store (WCS) Software Packages currently available are:

Part Number	Package Description
04-174M31R01	Perkin-Elmer Series 3200 Writable Control Store (WCS) Software Package Functional Programs (9-track, 800 BPI Magnetic Tape) and Documentation Package
04-174M71R01	Perkin-Elmer Series 3200 Writable Control Store (WCS) Software Package Functional Programs (9-track, 1600 BPI Magnetic Tape) and Documentation Package
04-174MD1R01	Perkin-Elmer Series 3200 Writable Control Store (WCS) Software Package Functional Programs (16Mb Disk) and Documentation Package
04-174MG1R01	Perkin-Elmer Series 3200 Writable Control Store (WCS) Software Package Functional Programs (16Mb Disk with IDC Format) and Documentation Package
04-174MJ1R01	Perkin-Elmer Series 3200 Writable Control Store (WCS) Software Package Functional Programs (25Mb Disk) and Documentation Package
04-174M99R01	Perkin-Elmer Series 3200 Writable Control Store (WCS) Documentation Package

3 DOCUMENTATION

The Perkin-Elmer Series 3200 Writable Control Store (WCS) Support Software Package Documentation Package, 04-174M99R01, consists of the following manuals:

Publication Number	Revision Level	Publication Name
48-096	R00	Perkin-Elmer Series 3200 Writable Control Store (WCS) Support Software Reference Manual
48-096 F01	R00	Perkin-Elmer Series 3200 Writable Control Store (WCS) Support Software Reference Manual Update
04-174M95	R01	Perkin-Elmer Series 3200 Writable Control Store (WCS) Support Software Packaging Information Document

4 FILE PROGRAM PACKAGE

The Perkin-Elmer Series 3200 Writable Control Store (WCS) Support Software Package includes the following items:

File ID	Part Number	Revision	Program Description
WCS.M95	N/A	N/A	M95 Print File (see page ii)
MCAL3220.OBJ	03-236	R00-00	Perkin-Elmer Model 3220 Microcode Assembler
MCAL3245.OBJ	03-237	R00-00	Perkin-Elmer Model 3240/3250 Microcode Assembler
MCAL3230.OBJ	03-249	R00-00	Perkin-Elmer Model 3230 Microcode Assembler
WCSLINK.OBJ	03-479 F01	R01-00	Perkin-Elmer Series 3200 WCS LINK Utility for building WCS image files from microcode object files
WCSAID45.OBJ	03-479 F02	R01-00	Perkin-Elmer Models 3240, 3250, 3200MPS CPU WCS Support AIDS Program

Filename	Part Number	Revision	File/Program Description
WCSAID30.OBJ	03-479 F03	R01-00	Perkin-Elmer Models 3230, 3200MPS APU WCS Support AIDS Program
WCSAID20.OBJ	03-479 F04	R01-00	Perkin-Elmer Model 3220 WCS Support AIDS Program
MPSLPFM.OBJ	03-479 F05	R01-00	Perkin-Elmer Model 3200MPS Loader and Power Fail Monitor
WCSUPP45.OBJ	03-479 F06	R00-00	Perkin-Elmer Model 3240, 3250 WCS Support Program
WCSUPP30.OBJ	03-479 F07	R00-00	Perkin-Elmer Model 3230 WCS Support Program
WCSUPP20.OBJ	03-479 F08	R00-00	Perkin-Elmer Model 3220 WCS Support Program
WCSLPFM.OBJ	03-479 F09	R00-00	Perkin-Elmer Models 3220, 3230, 3240, 3250 WCS Loader and Power Fail Monitor

5 UNPACKAGING AND INSTALLATION

5.1 Disk (16 and 25Mb)

The package files as listed in the preceding section are labelled 'WCS' for the 16 and 25Mb disks. There is no unpackaging procedure for disk packages as the software is immediately usable.

5.2 Magnetic Tape (800 and 1600 BPI)

The above files are supplied on a magnetic tape in OS/32 Backup Utility format. The unpackaging procedure involves copying the files from tape to a user disk utilizing OS/32 Backup.

After selecting a disk onto which the files are to be copied, review the disk filenames to ensure that they do not conflict with the filenames in this package as listed in Section 4 of this document. Rename any conflicting filenames to some other appropriate name.

NOTE

The files in the supplied Perkin-Elmer Series 3200 WCS Support package must not be renamed because the Perkin-Elmer Series 3200 WCS command substitution

system (CSS) files require specific filenames as listed in the Package Description section.

To unpackage the files from the system console or Multi-Terminal Monitor (MTM) terminal, mount the supplied magnetic tape and run OS/32 BACKUP Utility via the following commands:

```
LOAD BACKUP
TASK BACKUP
START ,IN=dev1:,OUT=dev2:,LIST=dev3:,VERIFY
```

where:

dev1	is the device name for the magnetic tape drive
dev2	is the device name for the disk
dev3	is the device name for the printer or list device

Note that all device names have the standard OS/32 format. They are dependent on the particular configuration of the user system and can be determined by entering the OS/32 command 'DISPLAY DEVICES' at the console or terminal.

NOTE

In running OS/32 BACKUP from an MTM terminal, the user must sign on to an account which has bare disk access and the task account privilege enabled. Account 255 will always have these privileges.

For further information on BACKUP, see Chapter 5 of the OS/32 System Support Utilities Reference Manual, Publication Number 48-031.

5.3 Post-Installation Procedures

Before using the installed software, it is recommended that the the files be copied for archiving.

6 ESTABLISHING THE MICROCODE ASSEMBLER

The following sequence of LINK commands should be used to establish the Microcode Assembler tasks for each processor:

o For LINK R00-01 or lower revision:

```
ESTABLISH TASK
OPTION SYSSPACE=FFFFF,WORK=5000
INCLUDE MCAL32xx.OBJ
MAP PR:                              [or any other Print device]
BUILD MCAL32xx.TSK
END
```

o For LINK R01-00 or higher revision:

```
ESTABLISH TASK
OPTION SYSSPACE=XFFFFF,WORK=X5000
INCLUDE MCAL32xx.OBJ
MAP PR:                              [or any other Print device]
BUILD MCAL32xx.TSK
END
```

where:

MCAL32xx stands for MCAL3220, MCAL3230 or MCAL3245

7 ESTABLISHING THE WRITABLE CONTROL STORE (WCS) SUPPORT PROGRAMS

Of the following WCS Support Programs, only WCS Support Aids is exclusively a feature of OS/32 7.1 and higher revisions and as such will not run under previous revisions of the OS.

7.1 Establishing WCS Support Aids With User Programs

The WCS Support Aid Program must be established as a D-task along with the user program which exercises the microcode to be debugged.

Using LINK R01-01 under OS 7.1, or LINK R01-02 under OS 7.2, enter:

```
ESTABLISH  TASK
OPTION  DFL,FL,DTASK,WORK=X2000
MAP PR:                              [or any other Print device]
IN  USER.OBJ
IN  WCSAIDxx.OBJ
BUILD  USER.TSK
END
```

where:

WCSAIDxx stands for WCSAID20, WCSAID30 or WCSAID45

NOTE

WCSAID30 should only be used with 3230 systems and APUs on the 3200MPS equipped with 4K WCS. If WCSAID30 is run on a 3230 system equipped with 2K WCS, unpredictable results and/or system crash may occur.

7.2 Establishing WCSLINK

To establish WCSLINK as a user task, enter the following LINK commands:

```
ESTABLISH  TASK
OPTION WORK=2000
INCLUDE WCSLINK.OBJ
MAP PR:                              [or any other Print device]
BUILD WCSLINK.TSK
END
```

NOTE

WCS LINK assumes that 3230 systems and auxiliary processing units (APUs) on the 3200MPS are equipped with 4K of WCS.

7.3 Establishing the Multi-Processor System Loader and Power Fail Monitor (MPSLPFM)

The user must establish the multi-processor system loader and power-fail monitor (MPSLPFM) as a resident, D-task with a priority higher than any other task which uses WCS. The following sequence of commands should be used to establsh MPSLPFM:

```
ESTABLISH  TASK
MAP PR:                              [or any other Print device]
INCLUDE MPSLPFM.OBJ
BUILD  MPSLPFM.TSK
END
```

7.4 Establishing the Writable Control System Loader and Power Fail Monitor (WCSLPFM)

The user must establish the WCSLPFM as resident, executive task with a priority higher than any other task which uses WCS. The version of LINK used should be compatible with the operating system being used. The following sequence of commands should be issued to LINK in order to establish the WCSLPFM.

```
ESTABLISH  TASK
OPTION  ET,RES,PRI=(11,11),ABS=0
MAP PR:                              [or any other Print device]
INCLUDE  WCSLPFM.OBJ
BUILD  WCSLPFM.TSK
END
```

7.5 Establishing the WCS Support Programs

The user must establish the WCS Support Programs as resident, executive tasks with a priority higher than any other task which uses Writable Control Store. To do so, he must use a version of LINK compatible with the operating system he is using. The user should enter the following sequence of commands to LINK in order to establish the WCS Support Program for each of the processors:

ESTABLISH TASK	Establish task with initial priority of 11, maximum priority of 11.
OPTION PRI=(11,11)	
OPTION ET,RES,FL,DFL	Make it an executive, resident task. Specify the floating point options if so equipped.
OPTION ABS=0	The UDL is already included in the object file (LINK will respond with a warning which can be ignored.)
OPTION WORK=2000	Get storage for start options
INCLUDE WCSUPPxx.OBJ	Include the WCS Support Program version to be established.
MAP PR:	Get a map of the task using print device designated in system configuration
BUILD WCSUPPxx.TSK	Build the task
END	

where:

WCSUPPxx stands for WCSUPP20, WCSUPP30 or WCSUPP45

For WCSLPFM, MPSLPFM and WCSUPPxx, it is sufficient to establish the task with priority higher than any other task which uses WCS.

Note that WCSLPFM and WCSUPPxx tasks have been established using an ABS=0 option. Setting ABS to any other value will lead to illegal instructions when the task is run. Furthermore, if MPSLPFM, WCSLPFM and WCSUPPxx tasks are established as non-resident or if the tasks are deleted from memory, the task must be reloaded and restarted after a power failure in order to initialize the contents of WCS. Failure to do so will leave the contents of WCS undefined and lead to unpredictable results and system crashes.