APPLICATION		REVISIONS			
NEXT ASSY	USED ON	LTR	DESCRIPTION		DATE
	7506				

NOTES ON BUILDING SYSTEM DISK FROM MAGNETIC TAPE

NOTE

Changes have been made to version 3.5 of the
DX10 operating system to fix the problems
described in this document. With the
exception of the advice on specifying the
BLOCK option on BD commands, the information
in this document is only for users of DX10
3.4 and earlier versions of the system. (The
information about the BLOCK option is general
advice which, if followed, will usually
result in more efficient use of the backup
tape. The advice applies to DX10 3.5 as well
as DX10 3.4) Users of DX10 3.5 may ignore the
rest of the information in this document.

Here are three things you should know about the process of making
backups to magnetic tape with the BD (Backup Directory) command,
and restoring them with the DSCBLD utility and RD (Restore
Directory) command. (DSCBLD is the utility that builds a system
disk from magnetic tape media.)

1. RESERVED TASK IDs

   There are task IDs on the system program file
   (.S$PROGA) that are reserved for use by Texas
   Instruments software packages. The DSCBLD utility
   attempts to preserve the availability of those IDs by
   assigning dummy tasks to them. The name of each dummy
   task consists of the characters RES, followed by the
   numerical ID of the task. For example, a dummy task
   with the name RES1B would be installed with a task ID
   of >1B.

   If you are using DSCBLD to restore your system disk
   from a backup you have taken, you may have tasks on the
   .S$PROGA program file that have the same ID as the
   dummy tasks, but different names. When you attempt to
   restore from your backup, after having performed a
   DSCBLD operation, the RD process will not replace the
   dummy tasks with the ones on the backup tape. Instead,
   it will warn you that you attempted to replace a task
   with one having a different name. This situation will
   occur if you have previously installed some language or
   communication package that contains tasks with the

reserved task IDs.

To correct the situation, first perform the DSCBLD and RD operations. Examine the RD listing to determine the .S$PROGA tasks that were not restored because of conflicting task IDs. Each one will be identified by a warning message.

NOTE

See the example RD listing on a following page for the format of the warning message. Note that in all the examples, SYSDSK is used as the name of the system disk volume. You must use the name of your system disk volume (rather than SYSDSK) when you enter the commands.

If there are no such warning messages, no corrective action is required. If there are one or more warning messages, use the MPF (Map Program File) command to verify that the tasks causing the problem are dummy tasks, and use the DT (Delete Task) command to delete from .S$PROGA the dummy tasks that have the duplicate task IDs. Perform RD again, with the ADD option specified, and with a control file to INCLUDE only the .S$PROGA file. Refer to a following page for an example RD command.

2. WRITE PROTECTED FILES

There is a problem in the RD utility that prevents the restoration of a file that was marked as "write protected" when it was backed up.

To prevent the problem, use MFP (Modify File Protection) to remove write protection attributes from all files that are to be backed up. If a large number of files are affected, you may want to create a batch stream file that can be executed to remove the protection attribute before the backup, and replace it after the backup.

Although there are no operating system files that are write protected, the language and communication packages do install some files with the write protect attribute. There may also be some user files that have been write protected. A Map Disk (MD) command may be used to find which files have write protection. The listing produced by MD should be saved in case a restore is necessary. The MD listing may be used to determine which files were write protected prior to the

backup, and should have write protection reinstated
after they are restored. On a following page is a list
of files that are known to be installed with write
protection enabled, and an example of how to enter an
MD command and determine which files are write
protected. There are also example MFP commands for
removing and activating write protection of a file.

3. BLOCK OPTION

There is an option in BD that specifies that the
records will be blocked. The default value of the
option is NOBLOCK. When using BD to backup to magnetic
tape media, the BLOCK option keyword should be
specified. On a following page is an example of a BD
command with the BLOCK option specified.

EXAMPLE RD LISTING SHOWING RESULT OF TASK NAME CONFLICT

Here is an abbreviated example of an RD listing which shows a
task name conflict. A listing of the tasks in the .S$PROGA file
on the SYSDSK volume would show that task >0C has the name RESOC.
Therefore the task STRTST5 was not restored to .S$PROGA.


```
    RESTORE DIRECTORY        08:58:34 WEDNESDAY, MAY 26, 1982.

ORIGINAL SOURCE:         MT01
ORIGINAL DESTINATION:    SYSDSK.S$PROGA
ORIGINAL OPTIONS:        REPLACE, ALIASES, NODATE, NOREWIND, NOUNLOAD
CONTROL FILE:
LIST FILE:               SYSDSK.RDLIST


    **   S$PROGA  - PROGRAM FILE

    **   TASK        ID
    **   SMMAP       >01
    **   SCILMT      >02
    **   MLP         >03
    **   SLMFOT      >04
    **   TM$SBD      >05
    **   TXSF        >06
    **   DCOPY       >07
    **   CPYSEQ      >08
    **   PF$LIN      >09
    **   TM$DGN      >0A
    **   FUTILT      >0B
    **   STRTST5     >0C   ID OR NAME CONFLICT
    **         END OF PROGRAM FILE


END

ELAPSED TIME = 0 MINUTES   22 SECONDS
SIZE OF INPUT = 94 ADU'S
1 WARNINGS ISSUED

****** RESTORE DIRECTORY COMPLETED
```

EXAMPLE RD COMMAND TO RESTORE TASKS IN .S$PROGA

Here is an example of an RD command to restore only the tasks that were not restored due to conflicting names. This command should be used only after the conflicting dummy tasks have been deleted from .S$PROGA. Note that the ADD option is specified, and the ME response to the CONTROL ACCESS NAME prompt permits entry of the control commands from the keyboard. Also note that entry of the control commands is terminated by the control command END.

RD

After entry of RD, the following prompts appear. Example responses to the prompts are shown to the right of the colon characters.

```
RESTORE DIRECTORY
    SEQUENTIAL ACCESS NAME: MTO1
        DIRECTORY PATHNAME: SYSDSK
        CONTROL ACCESS NAME: ME
        LISTING ACCESS NAME: SYSDSK.RDLISTA
                   OPTIONS: ADD
```

After entry of the prompt responses, the cursor will appear, to indicate that RD is ready for entry of control commands. Following are the example control commands:

```
IN S$PROGA
END
```

The above control commands will cause RD to restore only .S$PROGA from the backup tape. A full restore could be done, but would take longer. On the following page is an abbreviated example of an RD listing in which a task is added to .S$PROGA.

EXAMPLE RD COMMAND TO ADD TASKS TO .S$PROGA

```
     RESTORE DIRECTORY          09:36:14 WEDNESDAY, MAY 26, 1982.

ORIGINAL SOURCE:         MT01
ORIGINAL DESTINATION:    SYSDSK
ORIGINAL OPTIONS:        ADD, ALIASES, NODATE, NOREWIND, NOUNLOAD
CONTROL FILE:            ST01
LIST FILE:               SYSDSK.RDLISTA

IN S$PROGA

   **   S$PROGA   - PROGRAM FILE

   **   TASK         ID
   **   SMMAP       >01   NOT REPLACED
   **   SCILMT      >02   NOT REPLACED
   **   MLP         >03   NOT REPLACED
   **   SLMFOT      >04   NOT REPLACED
   **   TM$SBD      >05   NOT REPLACED
   **   TXSF        >06   NOT REPLACED
   **   DCOPY       >07   NOT REPLACED
   **   CPYSEQ      >08   NOT REPLACED
   **   PF$LIN      >09   NOT REPLACED
   **   TM$DGN      >0A   NOT REPLACED
   **   FUTIL       >0B   NOT REPLACED
   **   STRTST5     >0C
   **        END OF PROGRAM FILE


END

ELAPSED TIME = 0 MINUTES    16 SECONDS
SIZE OF INPUT ='94 ADU'S
11 WARNINGS ISSUED

***** RESTORE DIRECTORY COMPLETED
```

2302567-9901*A

LIST OF FILES KNOWN TO BE INSTALLED WITH WRITE PROTECTION

The 3780 communications package installs the following files with write protection enabled:

.S$SYSGEN.(system name).DMAP3780
.S$SYSGEN.(system name).MCOMMCOM

If installed on the system disk, the following files are also write protected:

.DXCOMOBJ.TSKSRC.MSTRMSG
.DXCOMOBJ.MAP.TASK3780
.DXCOMOBJ.MAP.TASK2780

The COBOL language package installs the following files with write protection:

.S$MSGX.COBOL
.S$MSGX.COBOLCMP
.S$MSGX.M$41
.S$SYSLIB.RCBMSG   (and all other files with pathnames that begin with
                    .S$SYSLIB.RCB)

Note that there may be other files with write protection. That is why you are advised to perform an MD (Map disk) command to determine the files that are write protected. Enter MD and answer the following prompts. Note that you should substitute your own names for the PATHNAME and LISTING ACCESS NAME prompts. The response to the SHORT FORM? prompt must be NO to obtain information about write protection. In the example, a volume name was supplied as the PATHNAME. The last two NO responses inform MD to list all directories and files that are associated with the directory specified as the PATHNAME. Therefore, the example command will produce a listing of all the directories and files in the volume SYSDSK.

MAP DISK
                 PATHNAME: SYSDSK
     LISTING ACCESS NAME: .MDLIST
             SHORT FORM?: NO
         TOP LEVEL ONLY?: NO
   DIRECTORY NODES ONLY?: NO

On the folowing page is an abbreviated listing resulting showing results of an MD command. It shows how the write protect attribute is reported.

ABBREVIATED LISTING RESULTING FROM AN MD COMMAND

In the MD listing below, look for the second line of each
directory and file entry. In the first entry of the example
(TBLD), the second line begins with the following text:
WPT/DPT/BLK/PERM/FORCED/=NNNYN. The N and Y characters of NNNYN
represent YES and NO values for the corresponding conditions
represented by WPT/DPT/BLK/PERM/FORCED. WPT is the first
condition, and NNNYN contains an N in the first positon, so the
value of WPT is NO. WPT represents write protection, so
SYSDSK.TBLD is not write protected. Note that SYSDSK.TBLD.BDFILE
contains a Y for the value of WPT, indicating it is write
protected.


```
    DISK MAP OF SYSDSK
       TODAY IS 09:59:47 THURSDAY, MAY 27, 1982.
                                NUMBER  CURRENT  TOTAL
                         FILE     OF      EOM    ALLOC
LV NAME                  TYPE   RECORDS   ADU     ADU      LAST UPDATE
-- ------------------     --    ------   -----   -----    ----------------
 0 VCATALOG                                    FILES=152  AVAILABLE=190
     TBLD                 D       54      18      18      5/27/82   9:57:46

   ALLOC: PRI=18    SEC=0      #SECS=0    LRECL=134   PRECL=134   BLK/ADU=3
   WPT/DPT/BLK/PERM/FORCED/=NNNYN  DATA-FMT=BINARY   CREATED  5/21/82  14:31:13

 1 TBLD:                                       FILES=11   AVAILABLE=42
     BDFILE               S      245      80      97      5/26/82   8:55:11

   ALLOC: PRI=1     SEC=1      #SECS=3    LRECL=80    PRECL=864   BLK/ADU=1
   WPT/DPT/BLK/PERM/FORCED/=YNYYN  DATA-FMT=BINARY   CREATED  5/26/82   8:54:52

     BDLST                S       30       1       1      5/26/82   8:55:12

   ALLOC: PRI=1     SEC=1      #SECS=0    LRECL=80    PRECL=864   BLK/ADU=1
   WPT/DPT/BLK/PERM/FORCED/=NNYYN  DATA-FMT=B SUPPRS  CREATED  5/26/82   8:54:51

**SYSDSK.TBLD                                       TOTAL SIZE = 116 ADUS
```

EXAMPLE MFP COMMANDS TO CHANGE WRITE PROTECTION FROM A FILE

The following MFP command specifies that the file SYSDSK.TBLD.BDFILE be neither write protected nor delete protected.


```
MODIFY FILE PROTECTION
              PATHNAME: SYSDSK.TBLD.BDFILE
   WRITE-DELETE PROTECT?: NO
         DELETE PROTECT?: NO
```


The following MFP command specifies that the file SYSDSK.TBLD.BDFILE be write protected. (Write protection also provides delete protection)


```
MODIFY FILE PROTECTION
              PATHNAME: SYSDSK.TBLD.BDFILE
   WRITE-DELETE PROTECT?: YES
         DELETE PROTECT?: NO
```

EXAMPLE BD COMMAND THAT SPECIFIES BLOCK OPTION

Following is an example of Backup Directory to magnetic tape with
BLOCK option specified:

BACKUP DIRECTORY
        DIRECTORY PATHNAME: .VCATALOG
    SEQUENTIAL ACCESS NAME: MT01
       CONTROL ACCESS NAME:
       LISTING ACCESS NAME: LP01
                   OPTIONS: BLOCK

Upon answering the above prompts, the following prompt appears:

BLOCKING FACTOR IN BYTES
  BLOCKING FACTOR: 9600