DECUS
PROGRAM LIBRARY

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TITLE	ONDISK-OFFDISK
AUTHOR	R. D. McCook and T. V. McCaffrey
COMPANY	Department of Physiology Loyola University Maywood, Illinois
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SOURCE LANGUAGE	DIAL

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ABSTRACT:

THE TWO PROGRAMS OFFDISK AND ONDISK PROVIDE THE CAPABILITY OF EASILY DUMPING THE CONTENTS OF THE DF/DS-32 DISK ONTO LINCTAPE AND RESTORING THE DISK WITH THE TAPE IMAGE AT A LATER TIME. THE DISK IMAGE FILES MAY BE FROM ANY ONE OF FOUR DF/DS-32 DISK SURFACES AND CAN BE TRANSFERED TO ANY ONE OF EIGHT TAPE UNITS. THE DISK IMAGE FILES ARE INDEXED AND PROTECTED UNDER THE DIAL MONITOR, AND UP TO FIVE DISK IMAGES CAN BE STORED ON A 1600 BLOCK LINCTAPE.

THESE PROGRAMS CONSIDERABLY EXTEND THE CAPABILITIES OF A PDP-12 SYSTEM WITH A DF-32 DISK, SINCE SEVERAL DISK ORIENTATED SYSTEMS CAN BE RAPIDLY INTERCHANGED.

OFFDISK:

THIS IS A DISPLAY INTERACTIVE PROGRAM FOR SAVING AN IMAGE OF A DF/DS-32 DISK SURFACE ON LINCTAPE. THE DISK IMAGE IS SAVED AS A PROTECTED BINARY FILE UNDER THE DIAL MONITOR. ITS STATUS AS A DISK IMAGE FILE IS INDICATED BY AN ASTERISK (*) PREFIXED TO ITS NAME. ALL INDEXING AND LOOKUP OPERATIONS ARE HANDLED BY THE PROGRAM.

OPERATION IS AS FOLLOWS:

OFFDISK IS LOADED FROM DIAL BY THE FOLLOWING COMMAND:

```
LO OFFDISK,0
```

THE FIRST DISPLAY WILL APPEAR.

```
SWAP DISK TO TAPE
UNIT_ FILE_______
```

THIS IS ANSWERED BY TYPING THE TAPE UNIT NUMBER (0-7) ON WHICH THE DISK IMAGE IS TO BE TRANSFERED AND THE NAME UNDER WHICH IT IS TO BE FILED (UP TO 7 CHARACETERS) . ALL UNFILLED SPACES MUST BE FILLED WITH QUESTION MARKS (?). WHEN THE FILE IS CREATED IN THE INDEX AN ASTERISK (*) IS AUTOMATICALLY PREFIXED TO THE NAME TO INDICATE THE FILE IS A DISK IMAGE. IMPORTANT. THE ASTERISK IS NOT USED IN CALLING THE IMAGE WITH ONDISK. THIS OPERATION IS HANDLED INTERNALLY BY THE PROGRAMS.

IF A FILE BY THE SAME NAME ALREADY EXISTS ON THE TAPE UNIT SPECIFIED THE FOLLOWING DISPLAY WILL APPEAR.

```
REPLACE FILE?
(Y OR N)_
```

A YES ANSWER WILL CAUSE THE EXISTING FILE TO BE OVERWRITTEN. A NO ANSWER WILL RETURN TO THE FIRST DISPLAY FOR A NEW FILE NAME.

IF THERE IS NOT ENOUGH ROOM TO ACCOMODATE THE 200 BLOCK LONG DISK IMAGE THE FOLLOWING DISPLAY WILL APPEAR.

```
NO ROOM ON UNIT

LF TO DIAL
```

A LINE FEED WILL RETURN CONTROL TO THE DIAL MONITOR.

IF THE REQUESTED REPLACEMENT OF A FILE IS IMPOSSIBLE BECAUSE THE EXISTING FILE IS NOT AT LEAST 200 BLOCKS LONG THE FOLLOWING DISPLAY WILL APPEAR.

FILE TOO SMALL

LF TO DIAL

A LINE FEED WILL RETURN CONTROL TO THE DIAL MONITOR.

IF ALL TAPE FILING CRITERIA ARE MET THE DISK UNIT (0-3) FROM WHICH THE IMAGE IS TO BE TRANSFERRED IS REQUESTED BY THE FOLLOWING DISPLAY.

FROM DISK UNIT_

AN ANSWER FROM 0-3 WILL CAUSE THE TRANSFER TO BE MADE TO THE REQUESTED TAPE FROM THE REQUESTED DISK. SINCE NO CHECK IS MADE FOR NON-EXISTENT DISK UNITS, THE PROGRAM CAN HANG IF AN NON-EXISTENT DISK IS REQUESTED.

DISK ERRORS ARE MONITORED DURING THE TRANSFER , IF ONE SHOULD OCCUR THE TRANSFER IS TERMINATED AND THE FOLLOWING DISPLAY APPEARS.

DISK ERROR

LF TO DIAL

TAPE CHECKSUM ERRORS ARE DETECTED AND IF ONE SHOULD OCCUR THE FOLLOWIN DISPLAY APPEARS:

TAPE CHECKSUM ERROR

LF TO DIAL

THE PROGRAM MAY BE RESTARTED AT ANY TIME BY AN I/O PRESET AND START 20 IN LINC MODE.

AT THE COMPLETION OF A SUCCESSFUL TRANSFER CONTROL IS RETURNED TO THE DIAL MONITOR.

ONDISK.

THIS IS A DISPLAY INTERACTIVE PROGRAM FOR RESTORING A DISK IMAGE SAVED ON A LINCTAPE BY OFFDISK. THIS PROGRAM WILL LOAD ONLY PROGRAMS WHICH HAVE AN ASTERISK PREFIXED TO THE NAME. ALL INDEX LOOKUP OPERATIONS ARE PERFORMED BY THE PROGRAM.

OPERATION IS AS FOLLOWS:

THE PROGRAM IS LOADED FROM DIAL BY THE FOLLOWING COMMAND

LO ONDISK,0

THE FIRST DISPLAY THEN APPEARS.

```
SWAP TAPE
  UNIT_
FILE_______
  TO DISK
```

THIS IS ANSWERED BY TYPING THE UNIT ON WHICH THE DISK IMAGE IS LOCATED AND ITS NAME AS IT APPEARS IN THE INDEX BUT WITHOUT THE PREFIXED ASTERISK (*). AND FILLING ANY FOLLOWING SPACES BY QUESTION MARKS(?).

IF THE REQUESTED FILE IS NOT FOUND THE FOLLOWING DISPLAY WILL APPEAR:.

```
FILE NOT FOUND
  TRY AGAIN?
  (Y OR N)_
```

A YES ANSWER WILL RETURN TO DISPLAY 1 AND PERMIT A NEW NAME TO BE REQUESTED. A NO ANSWER WILL RETURN TO THE DIAL MONITOR.

IF THE REQUESTED FILE IS NOT AT LEAST 200 BLOCKS LONG AND THEREFORE NOT A COMPLETE DISK IMAGE THE FOLLOWING DISPLAY WILL APPEAR.

```
FILE LESS THAN
   200 BLKS
  LOAD ANYWAY?
  (Y OR N)_
```

A YES ANSWER WILL LOAD THE FILE AND THE BLOCKS FOLLOWING IT ON THE TAPE UNTIL 200 BLOCKS ARE LOADED. A NO ANSWER WILL RETURN TO THE FIRST DISPLAY.

WHEN ALL TAPE CRITERIA HAVE BEEN MET THE DISK UNIT TO WHICH THE TRANSFER IS TO BE MADE IS REQUESTED.

```
LOAD DISK UNIT_
```

AN ANSWER FROM 0-3 WILL CAUSE THAT DISK TO BE LOADED. SINCE NON-EXISTENT DISKS ARE NOT CHECKED FOR, A NON-EXISTENT DISK REQUEST WILL CAUSE THE PROGRAM TO HANG.

THE DISK ERROR AND TAPE CHECKSUM ERROR ROUTINES ARE THE SAME AS IN OFFDISK.

ONDISK CAN BE RESTARTED AT ANYTIME BY AN I/O PRESET AND START 20 IN LINC MODE.

AT THE COMPLETION OF A SUCCESSFUL TRANSFER CONTROL RETURNS TO THE DIAL MONITOR. AN ALTERNATIVE TO THIS IS TO CHANGE THE EXIT FROM A SUCCESSFUL TRANSFER TO A BOOTSTRAP ROUTINE FOR THE PARTICULAR DISK SYSTEM YOU MAY BE LOADING, THIS WOULD MAKE THE SYSTEM SELF STARTING. SUCH A CHANGE COULD EASILY BE MADE TO THE SOURCE OF ONDISK.

BOTH OFFDISK AND ONDISK ASSUME THAT 1600 BLOCKS OF LINCTAPE ARE AVAILABLE. IF 1000 BLOCK FORMATTED TAPE IS BEING USED TWO CHANGES MUST BE MADE TO THE SOURCE. THESE CHANGES ARE EXPLAINED IN THE SOURCE COMMENTS.

IMPORTANT OPERATION PROCEDURES.

1. ALL TRAILING SPACES OF FILE NAMES MUST BE FILLED WITH QUESTION MARKS (?).
2. THE PREFIXED ASTERISK (*) IS ADDED AUTOMATICALLY TO THE FILE NAME BY BOTH ONDISK AND OFFDISK. AN ASTERISK SHOULD NOT BE USED IN CALLING OR FILING THE DISK IMAGES.
3. MODIFICATION OF THE SOURCE FILES AND REASSEMBLY IS NECESSARY FOR USE ON 1000 BLOCK FORMATTED LINCTAPE.

STORAGE REQUIREMENTS:

BOTH ONDISK AND OFFDISK USE MOST OF LOCATIONS 2000-6000 IN FIELD 0 FOR PROGRAM STORAGE. ALL OF FIELD 1 IS USED AS A BUFFER FOR TAPE TO DISK AND DISK TO TAPE TRANSFERS. ALTHOUGH THIS PROHIBITS USE IN A 4K MACHINE IT SHOULD BE POSSIBLE TO MODIFY THE PROGRAMS TO USE THE VACANT HALF OF FIELD 0 INSTEAD OF FIELD 1 AS A TRANSFER BUFFER.

HARDWARE REQUIREMENTS.

8K PDP-12, VR-12 SCOPE, TU-55 TAPE TRANSPORTS AND A DF-32 DISK. THE PROGRAMS WILL SUPPORT UP TO EIGHT TAPE TRANSPORTS AND FOUR DISK SURFACES.