

DISTRIBUTION LIST

B1800/B1700 SOFTWARE PRODUCT SPECIFICATIONS

DEIRQII

S. M. Roberson - Prod. Mgmt.  
P. Gonzales - Prod. Mgmt.  
J. M. Ross - Int'l Group P  
C. Kunkelmann - BMG

B. Dent - CSG  
D. Dahm - Corp. Eng.  
Dir. Pgm. - SSG  
M. Dowers - Int'l FE  
C. Hill - IC, BM, & SS

U.S. AND EUROPE

D. Cikoski - (Plymouth)  
J. H. Pedersen (Plymouth)  
W. E. Feeser (Austin)  
J. Berta (Downingtown)  
W. Mirarcik (Paoli)  
G. Smclnik (Paoli)  
T. Yama - F&SSG (Paoli)  
M. E. Ryan (Tredyffrin)  
J. Firth (McLean)  
A. Kosla (McLean)  
A. LaCivita - F&SSG (McLean)  
L. Guell - F&SSG (McLean)  
R. Sutton - F&SSG (McLean)  
L. DeBartelo - WADC (Irvine)  
R. Cole (Pasadena)  
H. M. Townsend (Pasadena)  
N. Cass - Pat. Atty. (Pasadena)  
D. C. Swanson (Mission Viejo)  
J. Lowe (Mission Viejo)  
H. N. Riley (El Monte)

J. C. Allan (Glenrothes)  
W. McKee (Cumbernauld)  
E. Higgins (Livingston)  
Mgr. NPSGrp (Ruislip)  
E. Norton (Middlesex)  
B. Hammersley (Croydon)  
J. Gerain (Pantin)  
J. Cazanove (Villers)  
J. C. Wery (Liege)  
F. Rouvier (Liege)  
G. LeBlanc (Liege)  
C. J. Tooth - SSG (London)

SANTA BARBARA PLANI

S. C. Schmidt  
J. Hale  
R. Shobe  
K. Meyers  
A. van der Linden  
T. Cardona  
R. Bauerle

J. Henige  
E. Yardi  
D. Stover  
L. Sweeney - 2  
G. Hammond - 3  
J. Morrison - 6

Distribution list current as of 12/24/80



Burroughs Corporation


 COMPUTER SYSTEMS GROUP  
 SANTA BARBARA PLANT

B1800/B1700 SQUASH/USER.DISK

## PRODUCT SPECIFICATION

| REV<br>LTR | REVISION<br>ISSUE DATE | APPROVED BY | REVISIONS   |
|------------|------------------------|-------------|---|
| A          | 2/3/78                 | <i>Jale</i> | INITIAL RELEASE - MARK VIII.0                               |
| B          | 1/7/81                 | <i>Jale</i> | Changes for MARK 10.0 Release<br>2-2 Updated "SIZE" option. |

"THE INFORMATION CONTAINED IN THIS DOCUMENT IS CONFIDENTIAL AND PROPRIETARY TO BURROUGHS CORPORATION AND IS NOT TO BE DISCLOSED TO ANYONE OUTSIDE OF BURROUGHS CORPORATION WITHOUT THE PRIOR WRITTEN RELEASE FROM THE PATENT DIVISION OF BURROUGHS CORPORATION"

BURROUGHS CORPORATION  
COMPUTER SYSTEMS GROUP  
SANTA BARBARA PLANT

COMPANY CONFIDENTIAL  
B1800/B1700 SQUASH/USER.DISK  
P.S. 2222 2574 (B)

TABLE OF CONTENTS

|                                  |     |
|----------------------------------|-----|
| INTRODUCTION . . . . .           | 1-1 |
| RELATED DOCUMENTATION            | 1-1 |
| OPERATING INSTRUCTIONS . . . . . | 2-1 |
| INTEGRITY CHECK                  | 2-2 |
| RUN TIME OPTIONS . . . . .       | 2-2 |
| TRACE FEATURE                    | 2-3 |
| TRACE=0 . . . . .                | 2-3 |
| TRACE=1                          | 2-3 |
| TRACE=2 . . . . .                | 2-3 |
| TRACE=3                          | 2-3 |
| TRACE=1 Output . . . . .         | 2-3 |
| TRACE=2 Output                   | 2-4 |
| TRACE=3 Output . . . . .         | 2-4 |
| ERROR RECOVERY                   | 3-1 |
| ERROR MESSAGES . . . . .         | 4-1 |
| NON-FATAL ERRORS                 | 4-1 |
| FATAL ERRORS . . . . .           | 4-2 |

BURROUGHS CORPORATION  
COMPUTER SYSTEMS GROUP  
SANTA BARBARA PLANT

COMPANY CONFIDENTIAL  
B1800/B1700 SQUASH/USER.DISK  
P.S. 2222 2574 (8)

### INTRODUCTION

SQUASH/USER.DISK is a normal-state program that consolidates the available storage areas on a user disk pack or cartridge while other programs are executing in the mix. Unlike the squash procedures available through the operating system, SQUASH/USER.DISK can run with other programs in the mix, although none of the other programs can be accessing the disk which is being squashed. The disk being squashed is made unavailable by the operating system and flagged as "OFF LINE YET IN USE".

### RELATED DOCUMENTATION

| Name                                   | Number         |
|--|----------------|
| ----                                   | -----          |
| B1800/B1700 Software Operational Guide | 1068731        |
| B1800/B1700 MCP Utilities              | P.S. 2212 5579 |

BURROUGHS CORPORATION  
 COMPUTER SYSTEMS GROUP  
 SANTA BARBARA PLANT

COMPANY CONFIDENTIAL  
 B1800/B1700 SQUASH/USER.DISK  
 P.S. 2222 2574 (B)

### OPERATING INSTRUCTIONS

To initiate the squash, the user should enter:

"EX SQUASH/USER.DISK;"

The program will respond with the following message:

"ENTER UNIT TO BE SQUASHED: DP? OR DC?"

The user should respond with the unit to be squashed.

<job-number>AX<unit mnemonic>

If the unit is available, then SQUASH/USER.DISK will perform the squash. It will print a list of the disk contents both before and after the squash, in a format similar to that of a KA. Before going to EOJ it will display:

"MAXIMUM CONTIGUOUS SPACE AVAILABLE IS "<integer> SECTORS"  
 "TOTAL SPACE AVAILABLE IS "<integer> SECTORS"  
 "SQUASH COMPLETE"

Just as with the MCP squash, it is advisable to verify the integrity of the disk, both before and after a squash. DISKMAP/UTILITY, for example, checks for any errors in disk integrity. (DISKMAP/UTILITY is discussed in P.S. 2212 5579, MCP Utilities.)

### INTEGRITY CHECK

SQUASH/USER.DISK will check the disk for overlapping sectors before beginning the squash. If any overlapping areas are found, it will print their size and location:

OVERLAPPING SECTORS ON UNIT OPD LABELLED DDCGRP

1 SECTOR OVERLAPPING STARTING AT SECTOR 0000ABBA  
 1 SECTOR OVERLAPPING STARTING AT SECTOR 0000A3DA  
 19 SECTORS OVERLAPPING STARTING AT SECTOR 0000ABEA  
 79 SECTORS OVERLAPPING STARTING AT SECTOR 0000AD1A  
 128 SECTORS OVERLAPPING STARTING AT SECTOR 0000D15A  
 160 SECTORS OVERLAPPING STARTING AT SECTOR 000EEA0A

BURROUGHS CORPORATION  
 COMPUTER SYSTEMS GROUP  
 SANTA BARBARA PLANT

COMPANY CONFIDENTIAL  
 B1800/B1700 SQUASH/USER.DISK  
 P.S. 2222 2574 (B)

Overlapping areas cause the program to abort before doing the squash, displaying the message:

<integer> OVERLAPPING AREAS -- SQUASH ABORTED

SQUASH/USER.DISK will also check the available table for out-of-sequence or zero-length entries. Those will be flagged on the first KA listing, and the program will be aborted after displaying the message:

BAD AVAILABLE TABLE -- SQUASH ABORTED

### RUN TIME OPTIONS

Once the squash has begun, the user can set various options, using the "AX" SPO command:

<job-number>AX<option>

Possible options include:

- SIZE            The program will display the current address, maximum contiguous space available and the total space available.
- STOP            The program will terminate at the first convenient opportunity. The program should never be DS-ed while it is running; "STOP" should be used instead.
- NEED <n>        This tells the program that <n> contiguous sectors are needed. The program will terminate as soon as the requested amount of space is made available.
- TRACE <n>       This sets the TRACE option. <n> must be either 0, 1, 2 or 3. See TRACE FEATURES in this section.

BURROLGHS CORPORATION  
COMPUTER SYSTEMS GROUP  
SANTA BARBARA PLANT

COMPANY CONFIDENTIAL  
B1800/B1700 SQUASH/USER.DISK  
P.S. 2222 2574 (8)

### IRACE FEATURE

The TRACE option allows the user to follow the progress of the squash. It is especially useful for recovery in the case of a system failure while SQUASH is executing.

#### IRACE=0

Nothing will be traced. This is the default.

#### IRACE=1

Each piece of data is traced when it is moved.

#### IRACE=2

Each disk I/O (read or write) is traced.

#### IRACE=3

Each disk I/O (read or write) is traced, including the contents of the read/write buffer.

Sample trace output:

#### IRACE=1 Output

AVAILABLE TABLE MOVED FROM 200005FA TO 20000422  
FILE HEADER MOVED FROM 200007BA TO 200004BA  
SUB-DIRECTORY MOVED FROM 200008AA TO 200004FA  
FILE AREA MOVED FROM 200009AA TO 20000532



BURROUGHS CORPORATION  
COMPUTER SYSTEMS GROUP  
SANTA BARBARA PLANT

COMPANY CONFIDENTIAL  
B1800/B1700 SQUASH/USER.DISK  
P.S. 2222 2574 (R)

TRACE=2 Output

READ 20000EC2  
WRITE 200006F2  
READ 200006E2  
WRITE 200006E2  
READ 200003C2

TRACE=3 Output

READ 200003C2 F21000031000000000F210000300F2100007900008F1.....

WRITE 200003C2 F21000031000000000F210000300F2100007900008LF.....

BURROUGHS CORPORATION  
COMPUTER SYSTEMS GROUP  
SANTA BARBARA PLANT

COMPANY CONFIDENTIAL  
B1800/B1700 SQUASH/USER.DISK  
P.S. 2222 2574 (8)

### ERROR RECOVERY

If SQUASH/USER.DISK is abnormally terminated, either because of a Clear/Start, DS, or program failure, then the input disk may be corrupted. However, it should be possible to recover most of the data. The user should run DISKMAP/UTILITY to discover what, if any, errors there are. Using the DISKMAP/UTILITY output, along with a KA of the disk before and after the squash, should make it possible to salvage the disk.

To do this, it is necessary to understand the order of the squash operation. Each piece of data starting with the lowest address is moved into the lowest available disk address. The steps of the squash occur in this sequence:

- 1) The data is moved.
- 2) Relatives are informed of the move (for example, a file-header must be told if one of its areas is moved).
- 3) The old space is returned to the Available Table.
- 4) The new space is removed from the Available Table.

How much information is lost depends on what the program was doing when it was aborted. From the KA, the user should be able to tell what was being moved at the time of the failure and attempt to recover the lost data. This can be done by removing bad areas and using IAD (installation allocated disk) files to recover lost information.

BURROUGHS CORPORATION  
 COMPUTER SYSTEMS GROUP  
 SANTA BARBARA PLANT

COMPANY CONFIDENTIAL  
 B1800/B1700 SQUASH/USER.DISK  
 P.S. 2222 2574 (B)

## ERROR MESSAGES

### NON-FATAL ERRORS

The following errors are non-fatal. If user input is required, the program will request a response and then wait for an AX message.

<unit> IS AN INVALID UNIT NAME

Valid unit names are DP<letter> and DC<letter>.

<unit> COULD NOT BE ASSIGNED

The unit could not be assigned to the program. Check that it is on-line, and has no users.

<unit> LABELLED <name> IS NOT A USER DISK

Only user disks can be squashed by SQUASH/USER.DISK

<option> IS NOT A KNOWN OPTION

The user entered an invalid option.

VALUE OF <value> FOR <option> IS NOT NUMERIC

TRACE and NEED require numeric values.

TRACE CANNOT BE SET TO <value>

TRACE can only be set to 0, 1, 2 or 3

NOT READY

ON <unit> -- PLEASE CORRECT AND AX WITH OK

WRITE LOCKOUT

The unit being squashed has gone not ready or a write lockout has occurred. The unit should be readied or write enabled in order.

BURROUGHS CORPORATION  
 COMPUTER SYSTEMS GROUP  
 SANTA BARBARA PLANT

COMPANY CONFIDENTIAL  
 B1800/B1700 SQUASH/USER.DISK  
 P.S. 2222 2574 (B)

for the squash to continue. The program will wait until the user enters <job-number>AX OK before continuing.

### EAIAL ERRORS

The following messages appear when the program discovers an uncorrectable error. They will be followed by the message:

#### SQUASH ABORTED

If SQUASH/USER.DISK terminates abnormally, the disk will not be readied. The user should ready the unit and check its integrity before using it. The disk may be bad, so the user should follow the instructions in the ERROR RECOVERY section.

#### ID UNCORRECTED AFTER 10 RETRIES

A disk I/O error could not be corrected.

#### INVALID FILE HEADER AT SECTOR <hex address>

A file header contained invalid information:

- 1) More than 105 areas were requested for the file, or
- 2) The number of assigned areas was greater than the number of areas requested.

#### PROGRAM ERROR

The squash could not continue due to a programmatic error. A memory dump will be generated before the program goes to EOJ. Save the dump and write a Trouble Report.

#### <integer> OVERLAPPING AREAS

See the INTEGRITY CHECK section.

BURROUGHS CORPORATION  
COMPUTER SYSTEMS GROUP  
SANTA BARBARA PLANT

COMPANY CONFIDENTIAL  
B1800/B1700 SQUASH/USER.DISK  
P.S. 2222 2574 (B)

BAD AVAILABLE TABLE

See the INTEGRITY CHECK section.

BURROUGHS CORPORATION  
COMPUTER SYSTEMS GROUP  
SANTA BARBARA PLANT

COMPANY CONFIDENTIAL  
B1800/B1700 SQUASH/USER.DISK  
P.S. 2222 2574 (B)

INDEX

ERROR MESSAGES 4-1  
ERROR RECOVERY 3-1  
  
FATAL ERRORS 4-2  
  
INTEGRITY CHECK 2-1  
INTRODUCTION 1-1  
  
NON-FATAL ERRORS 4-1  
  
OPERATING INSTRUCTIONS 2-1  
  
RELATED DOCUMENTATION 1-1  
RUN TIME OPTIONS 2-2  
  
TRACE FEATURE 2-3  
TRACE=0 2-3  
TRACE=1 2-3  
TRACE=1 Output 2-3  
TRACE=2 2-3  
TRACE=2 Output 2-4  
TRACE=3 2-3  
TRACE=3 Output 2-4