

EXPLANATION OF DRUM/DISK ERROR AND STATUS CODES

TO: Distribution

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SUBJECT: DRUM/DISK ERROR AND STATUS CODES

This MOSH supercedes MOSH 44 and MOSH 117.

I. ACKNOWLEDGEMENT

This MOSH is based on material prepared by the System Assurance Group at Honeywell, Waltham.

II. PURPOSE

The purpose of this MOSH is to provide a reference for disk and drum error and status messages that might occur during Multics or BOS operation.

## III. DRUM ERRORS

General form of message on on-line console:

DRUM ERROR ASW=zzzzzzEFGHyy DCW=ddddddaaaaaa, xxxxxxCCxxr

where:

ASW

zzzzzz = current DCW relative address  
 EFGH = error (see "DRUM STATUS EFGH" described on Page-3)  
 yy = service pointer

DCW

dddddd = drum sector address  
 aaaaaa = memory address (zero mod 64)  
 xxxxxx = non-relevant data  
 CC = drum command  
     00 = DIS  
     10 = DRUM STOP  
     24 = IDL  
     34 = IDL + INTERRUPT  
     60 = READ  
     64 = WRITE  
     70 = READ + INTERRUPT  
     74 = WRITE + INTERRUPT

xxx = non-relevant data  
 r = number of retries (only 2 rightmost bits)

DCW

DRUM STATUS

## DRUM STATUS EFGH

The following chart shows the values of the drum status message. When more than one of the individual status conditions are present, then the number in the message is the sum of the two conditions. For example, G = 3 means that both conditions specified by a status of G=1 and G=2 are present.

|   |     |  |
|---|-----|--|
| E | = 4 | busy bit   |
|   | = 2 | test mode 1  |
|   | = 1 | test mode 2  |
| F | = 4 | marker interrupt (used by program to cause interrupt after execution).   |
|   | = 2 | parity error on read or write error on fault (core parity).  |
|   | = 1 | transfer timing error during data movement.  |
| G | = 4 | the memory detected an illegal action during an operation in which control information (DCW, status, execute interrupt) was transferred.                           |
|   | = 2 | the drum sector address could not be found, a sector mark was not found during two drum revolutions or an end of sector mark was not detected between two sectors. |
|   | = 1 | the drum is momentarily or permanently inoperable and no data transfer can be made. This can be caused by a drum loss of power, detected malfunction, etc.         |
| H | = 4 | a DCW has specified a data transfer involving a drum address beyond the drum capacity.   |
|   | = 2 | the memory module has failed to answer an interrupt request within the allowable time limits (132 to 272 microseconds).  |
|   | = 1 | indicates that the command field of a DCW 2 could not be decoded by the drum controller as a legal command.  |

DSU-270 AND DSU-470 ERRORS

IV. DSU-270 and DSU-170 ERRORS

General form of message on on-line console:

DS270 ERROR: CMD=CC, AREA=kk, S=ssssss, ADDR=aaaaa, STAT=tttt  
or

DS170 ERROR: CMD=CC, AREA=kk, S=ssssss, ADDR=aaaaa, STAT=tttt

where:

CC = disk command  
    00 = REQUEST STATUS  
    25 = READ  
    31 = WRITE  
    33 = WRITE AND VERIFY  
    34 = SELECT

kk = area (device number)

ssssss = sector number

aaaaa = memory address \*100(8)

tttt = disk status

    100 = device busy positioning  
    140 = device busy because alternate channel in control  
    200 = file inoperable  
    201 = addressed device write inhibited  
    202 = seek incomplete  
    301 = transfer timing alert  
    302 = transmission parity alert  
    304 = invalid seek address  
    310 = header verification failure  
    320 = check character alert  
    340 = compare alert  
    401 = end file (last consecutive block)  
    402 = end file (block count limit)  
    404 = end file (defective track detected)  
    501 = instruction rejected (invalid op code)  
    502 = instruction rejected (invalid device code)  
    504 = instruction rejected (parity alert on device/op code)  
    510 = instruction rejected (invalid instruction sequence)  
    520 = instruction rejected (ESFC busy)  
    1000 = channel busy