LISA BOOT ROM MANUAL

VERSION 1.0

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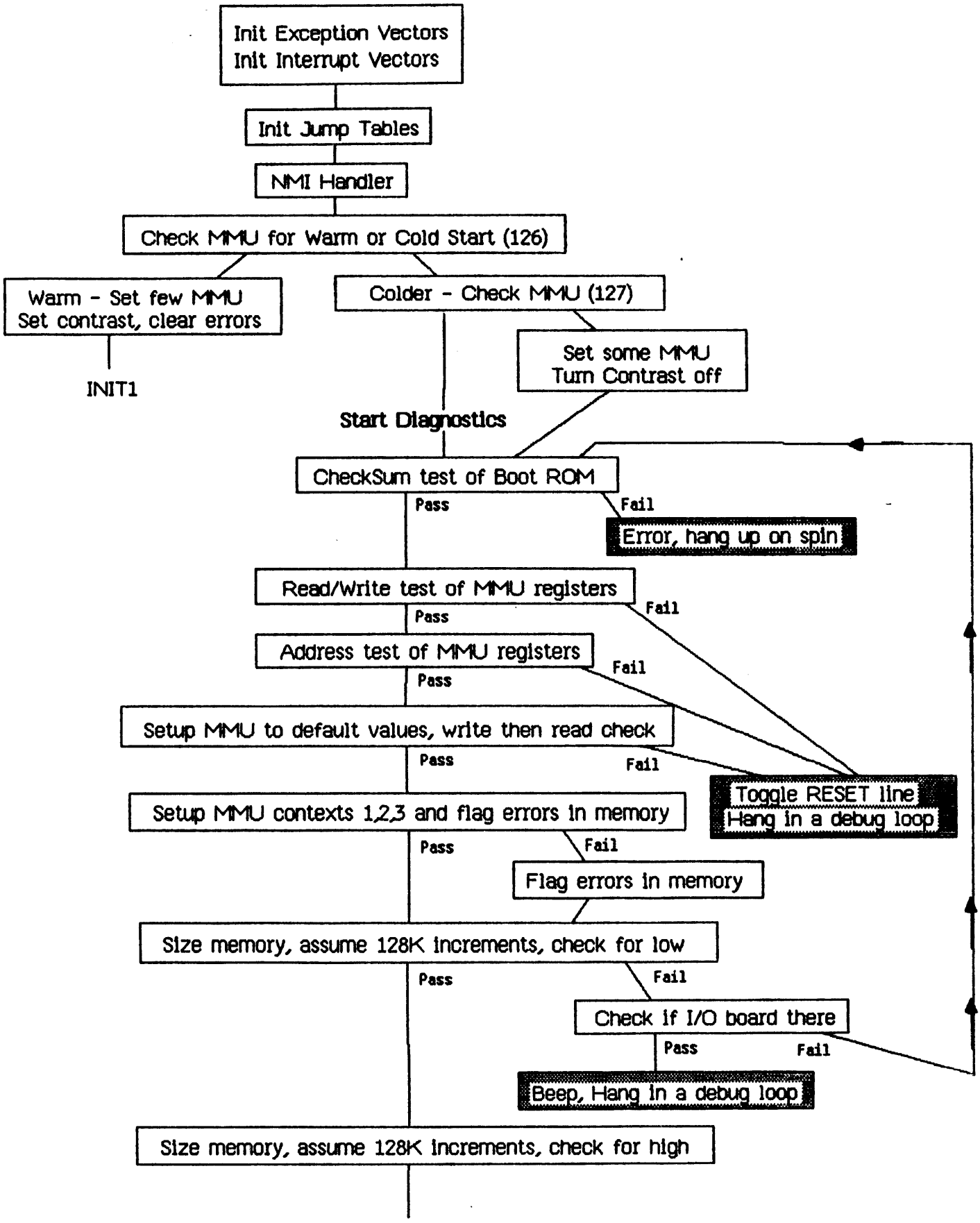
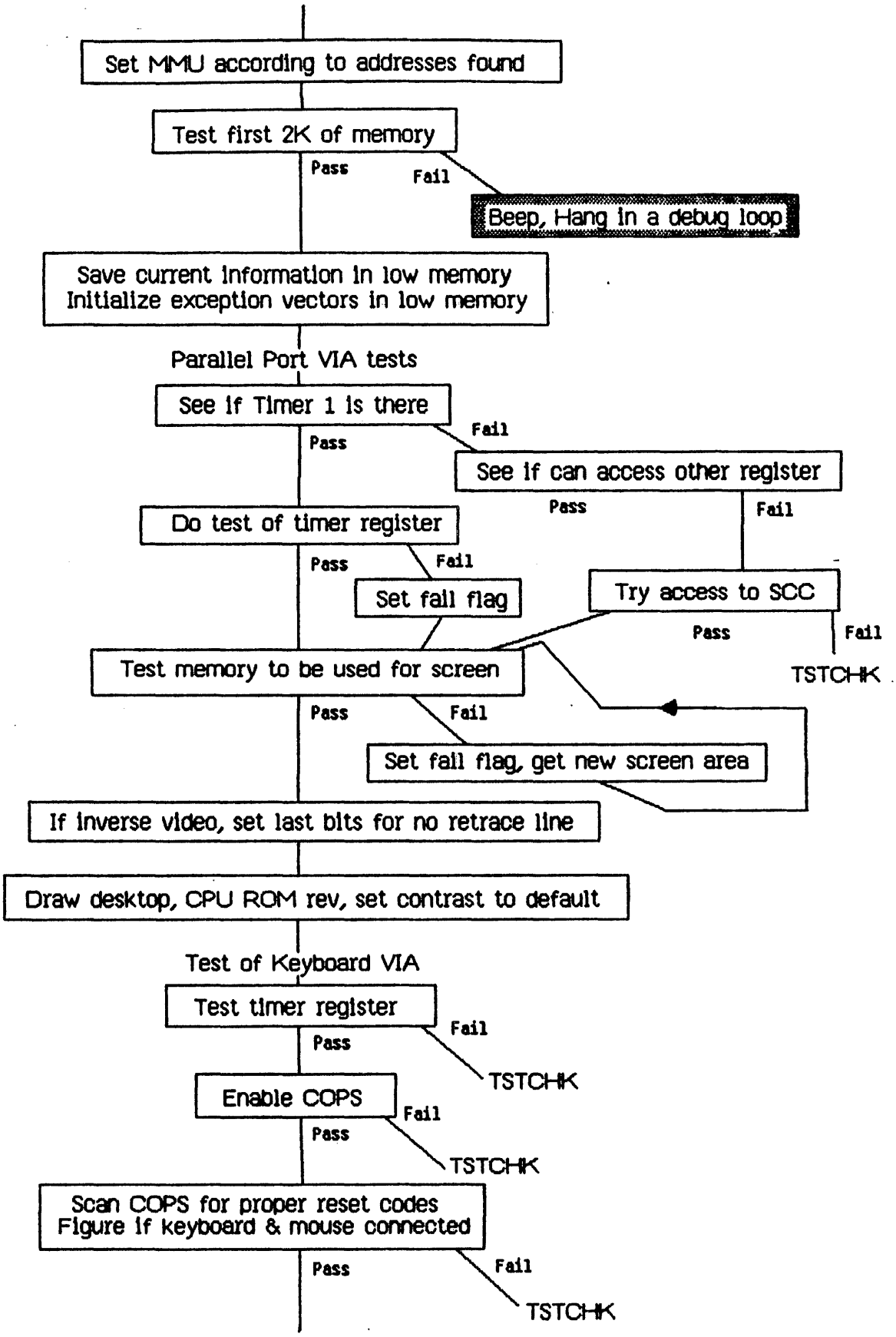
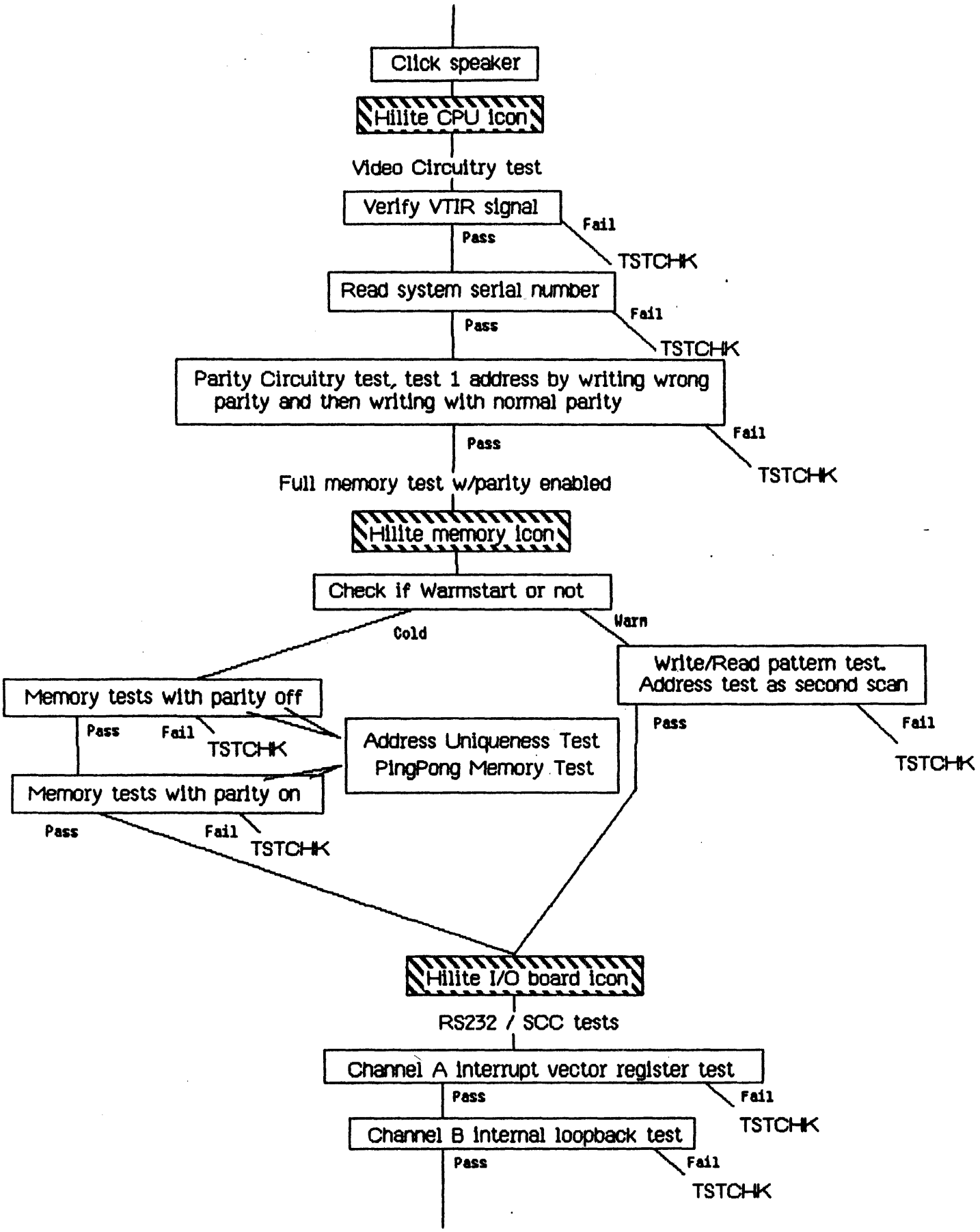
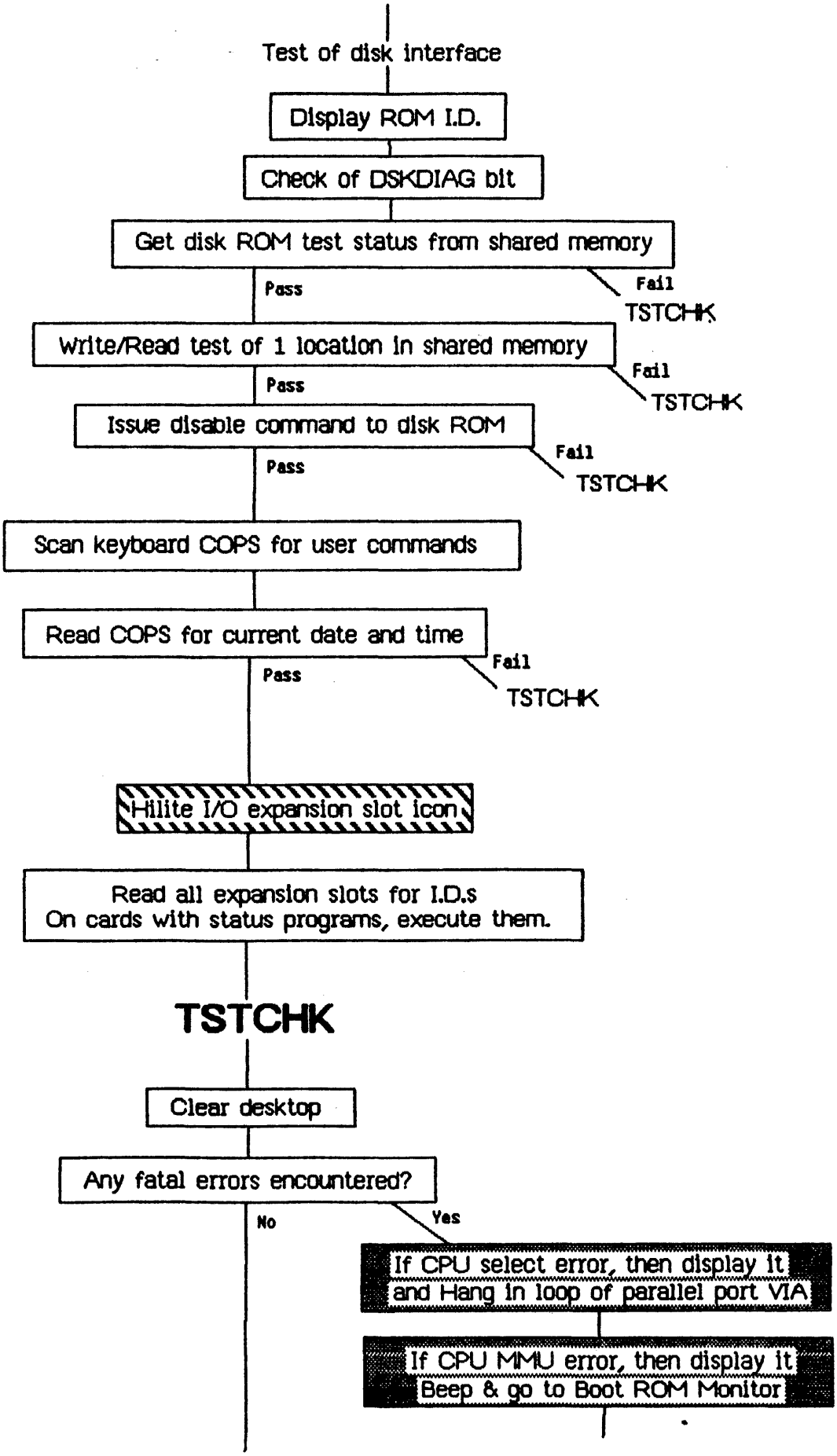
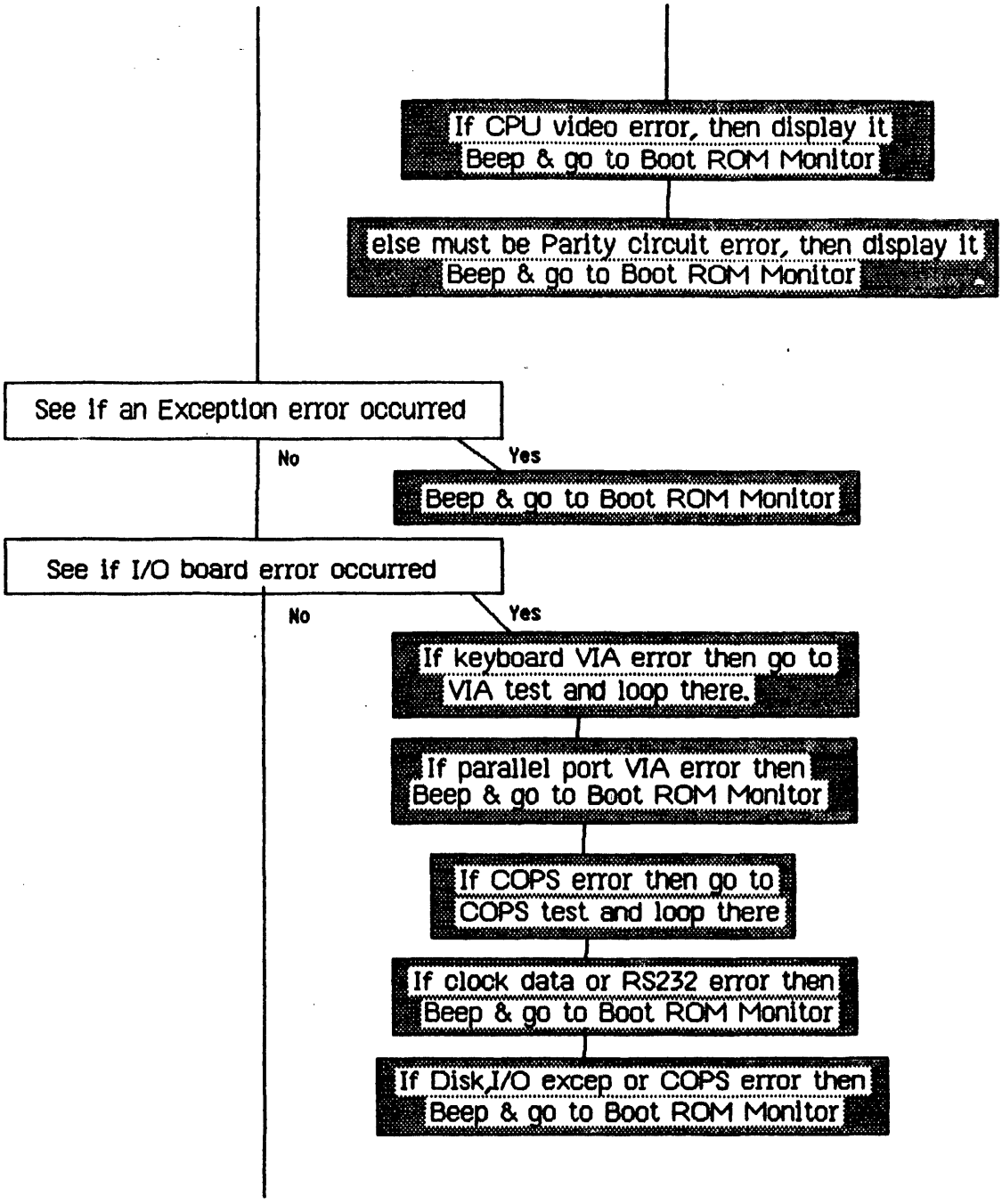
20 June 1983

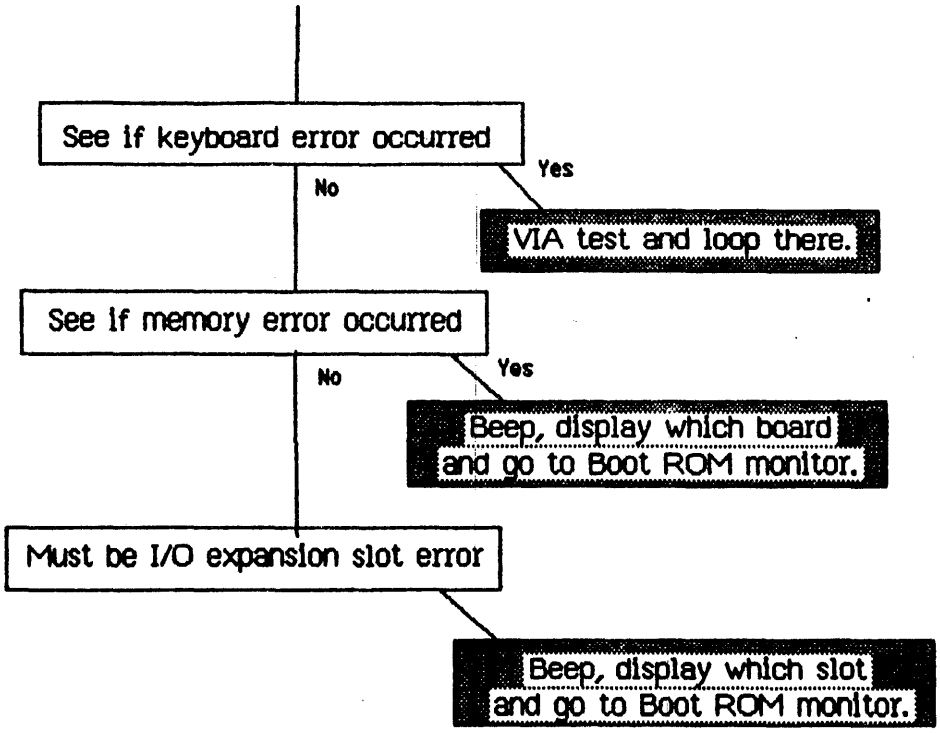

Init Exception Vectors
Init Interrupt Vectors
Init Jump Tables
NMI Handler
Check MMU for Warm or Cold Start (126)
Warm - Set few MMU
Set contrast, clear errors
INIT1
Colder - Check MMU (127)
Set some MMU
Turn Contrast off
Start Diagnostics
CheckSum test of Boot ROM
Pass
Fail
Error, hang up on spin
Read/Write test of MMU registers
Fail
Pass
Address test of MMU registers
Fail
Pass
Setup MMU to default values, write then read check
Pass
Fail
Toggle RESET line
Hang in a debug loop
Setup MMU contexts 1,2,3 and flag errors in memory
Pass
Fail
Flag errors in memory
Size memory, assume 128K increments, check for low
Pass
Fail
Check if I/O board there
Pass
Fail
Beep, Hang in a debug loop
Size memory, assume 128K increments, check for high

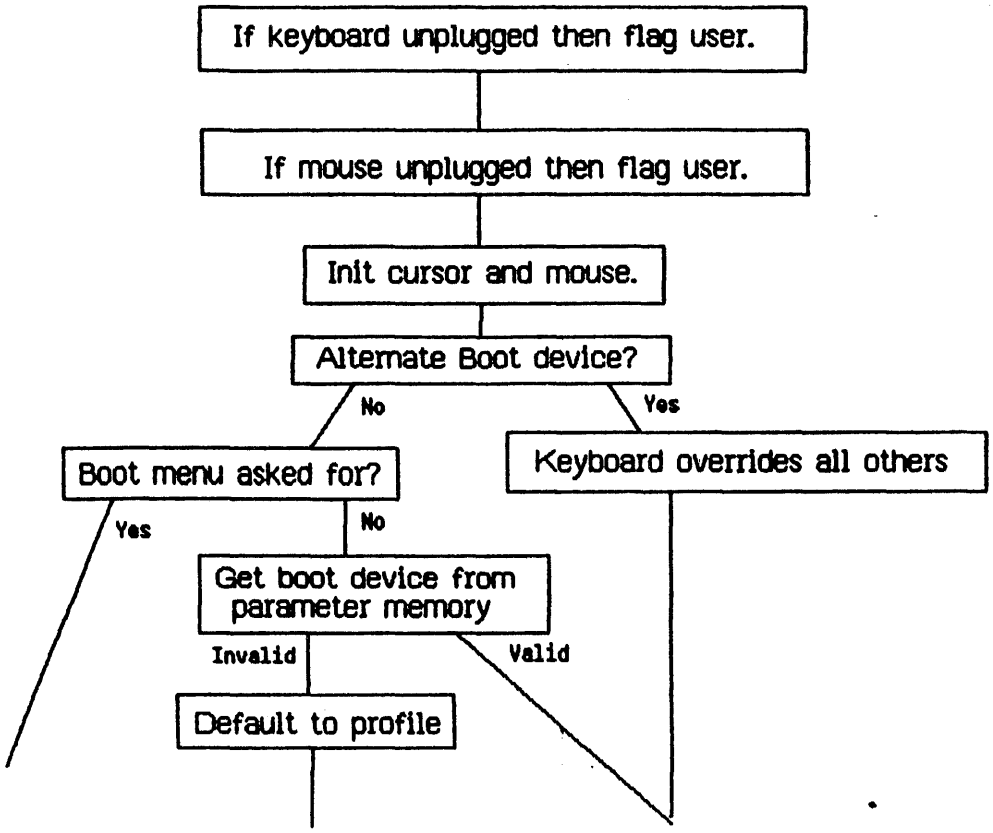

Set MMU according to addresses found
Test first 2K of memory
Pass
Fail
Beep, Hang in a debug loop
Save current information in low memory
Initialize exception vectors in low memory
Parallel Port VIA tests
See if Timer 1 is there
Fail
Pass
See if can access other register
Pass
Fail
Do test of timer register
Pass
Fail
Set fail flag
Try access to SCC
Pass
Fail
TSTCHK
Test memory to be used for screen
Pass
Fail
Set fail flag, get new screen area
If inverse video, set last bits for no retrace line
Draw desktop, CPU ROM rev, set contrast to default
Test of Keyboard VIA
Test timer register
Fail
Pass
TSTCHK
Enable COPS
Fail
Pass
TSTCHK
Scan COPS for proper reset codes
Figure if keyboard & mouse connected
Pass
Fail
TSTCHK

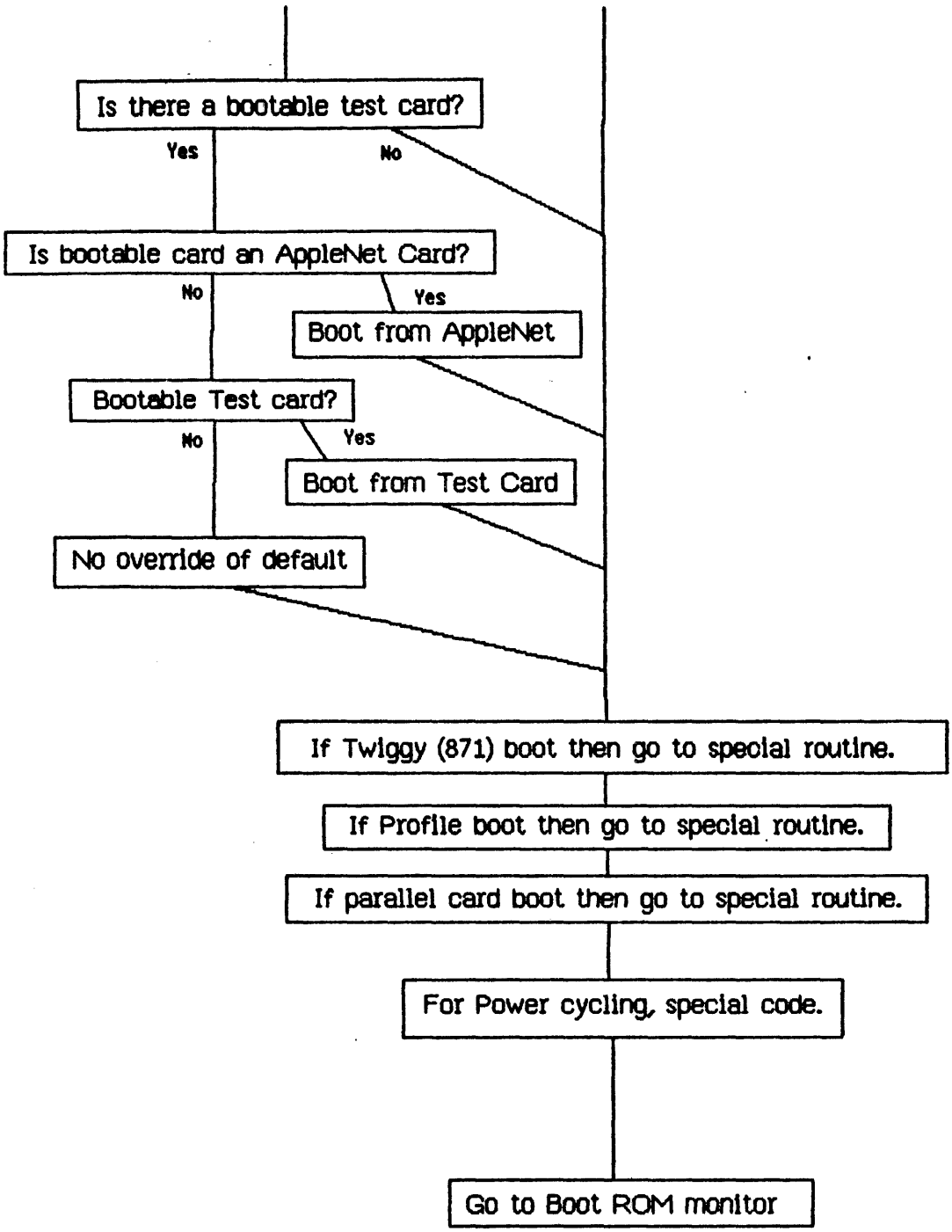

Click speaker
Hilite CPU icon
Video Circuitry test
Verify VTIR signal
Fail
Pass
TSTCHK
Read system serial number
Fail
Pass
TSTCHK
Parity Circuitry test, test 1 address by writing wrong parity and then writing with normal parity
Fail
Pass
TSTCHK
Full memory test w/parity enabled
Hilite memory icon
Check if Warmstart or not
Warm
Cold
Write/Read pattern test. Address test as second scan
Pass
Fail
TSTCHK
Memory tests with parity off
Pass
Fail
TSTCHK
Address Uniqueness Test
PingPong Memory Test
Memory tests with parity on
Pass
Fail
TSTCHK
Hilite I/O board icon
RS232 / SCC tests
Channel A interrupt vector register test
Pass
Fail
TSTCHK
Channel B internal loopback test
Pass
Fail
TSTCHK


Test of disk interface
Display ROM I.D.
Check of DSKDIAG bit
Get disk ROM test status from shared memory
Pass
Fail
TSTCHK
Write/Read test of 1 location in shared memory
Pass
Fail
TSTCHK
Issue disable command to disk ROM
Pass
Fail
TSTCHK
Scan keyboard COPS for user commands
Read COPS for current date and time
Pass
Fail
TSTCHK
Hilite I/O expansion slot icon
Read all expansion slots for I.D.s
On cards with status programs, execute them.
TSTCHK
Clear desktop
Any fatal errors encountered?
No
Yes
If CPU select error, then display it
and Hang in loop of parallel port VIA
If CPU MMU error, then display it
Beep & go to Boot ROM Monitor

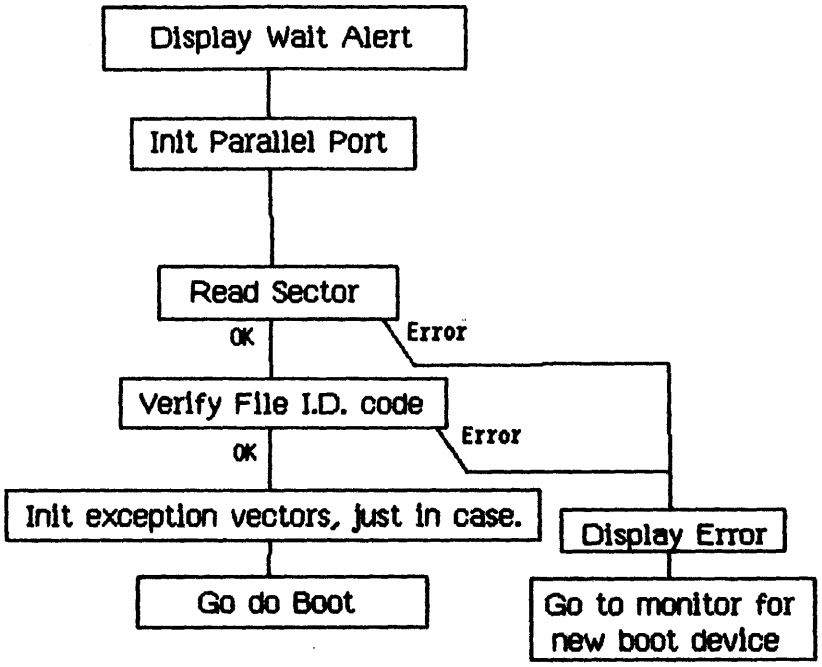
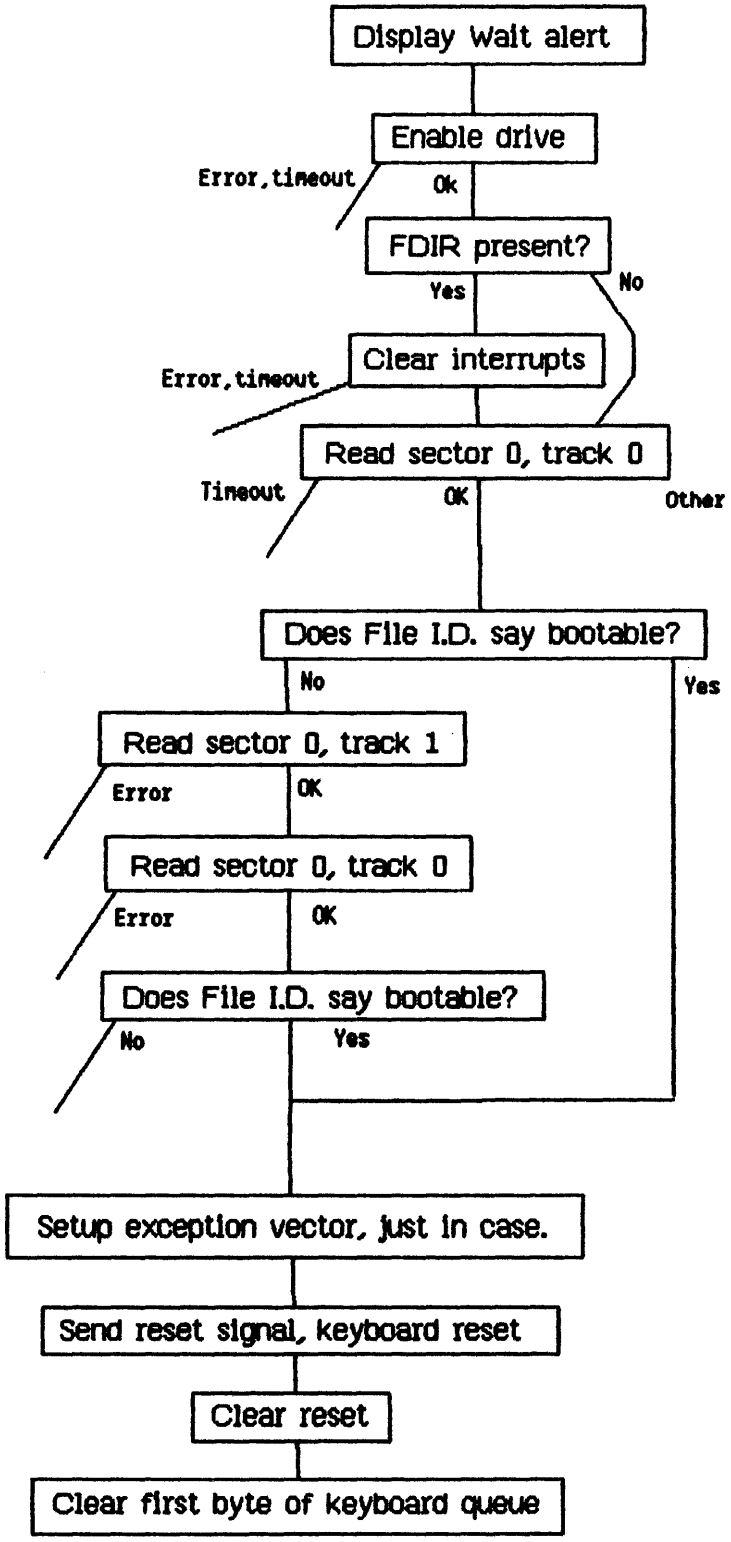

If CPU video error, then display it
Beep & go to Boot ROM Monitor
else must be Parity circuit error, then display it
Beep & go to Boot ROM Monitor
See if an Exception error occurred
No
Yes
Beep & go to Boot ROM Monitor
See if I/O board error occurred
No
Yes
If keyboard VIA error then go to
VIA test and loop there.
If parallel port VIA error then
Beep & go to Boot ROM Monitor
If COPS error then go to
COPS test and loop there
If clock data or RS232 error then
Beep & go to Boot ROM Monitor
If Disk,I/O excep or COPS error then
Beep & go to Boot ROM Monitor


See if keyboard error occurred
Yes
No
VIA test and loop there.
See if memory error occurred
No
Yes
Beep, display which board and go to Boot ROM monitor.
Must be I/O expansion slot error
Beep, display which slot and go to Boot ROM monitor.


If keyboard unplugged then flag user.
If mouse unplugged then flag user.
Init cursor and mouse.
Alternate Boot device?
No
Yes
Boot menu asked for?
Keyboard overrides all others
Yes
No
Get boot device from parameter memory
Invalid
Valid
Default to profile


Is there a bootable test card?
Yes
No
Is bootable card an AppleNet Card?
No
Yes
Boot from AppleNet
Bootable Test card?
No
Yes
Boot from Test Card
No override of default
If Twiggy (871) boot then go to special routine.
If Profile boot then go to special routine.
If parallel card boot then go to special routine.
For Power cycling, special code.
Go to Boot ROM monitor

Boot from Profile



Floppy disk Boot