01/25/85 Preliminary

An 806 and an 800A, 802, 802H, or new 800 terminal is required to install the 806 TurboDOS. You should also have a text editor like ED or WordStar available on the A drive. You should have two diskettes: a COGITATE 1st time diskette in CP/M format and a COGITATE TurboDOS distribution diskette which is in TurboDOS format. **Prior to installing TurboDOS, you should have a backup of all your files and also have available the TeleVideo distribution diskettes.**

In TurboDOS nomenclature a MASTER is the 806 or 816 and a SLAVE is any userstation. A COMPLEX SLAVE is a userstation with local diskettes such as the 803.

MAKE A BACKUP OF YOUR HARD DISK FIRST!!!

1) The 806 should be brought up under CP/M with a service processor terminal. Putting switch 7 up on S2 on an 800A, 802, 802H or switch 5 up on the new 800, turns the terminal into a service processor terminal.

2) If MmmOST is running, you can cancel MmmOST by typing a control "C". MmmOST should respond by asking you to type "Y" to cancel. Do so. You will now have the CP/M prompt "A>".

3) Let's make room on the B drive to do our installation. Using the CP/M ERA command we will erase the contents of drive B. (Make sure you have backed up everything you want to keep!)

```
A>ERA B:*.*
===> CP/M will ask if it's OK to erase all.  It is! <===
```

4) Insert the COGITATE 1st time diskette. This diskette is in CP/M format so we will be able to PIP it down to the B drive:

```
A>PIP B:=C:*.*[VOR]
```

About 40 files will copy down to the B drive.

5) The COGITATE distribution diskette is in TurboDOS format and cannot be read by CP/M. To get it down to the hard disk, we have to get TurboDOS up. Here's the first problem we have to watch out for. The older 806/20 had Tandon drives with a 2-ms step rate, while the newer ones have a Rodime with a buffered stepper which is much faster. We can tell from the serial number which drive we have. The 806's serial number is on a plate on the rear. If it ends in a G or higher letter, then we have the new (and faster) Rodime drive.

The GEN and PAR files are now set up to work with the 20MB Rodime drives. If your 806 is a 20MB Rodime you can go directly to Step 7! 10MB 806 users or 20MB with the Tandon drives must do the following patch:

6) This is the "patch" required for Tandon drive users. Patches in TurboDOS are accomplished via an editor. We can use WordStar, or ED or any editor you feel comfortable with.

> Using your editor, bring up from the B drive the file named OSLOD806.PAR. This is the operating system loader for the 806 systems! This is a very short text file. You will see these two lines about 8 lines into the file:
>
> ```
> ;STPWDA = 1          ;SET 2MS STEP RATE FOR HARD DISK
> STPWDA = 0           ;SET RATE FOR RODIME DRIVE
> ```
>
> We want the second line to be effective, but the ";" makes it into a comment and is, therefore, ignored. Using your editor, put a semi-colon in front of STPWDA = 0 and remove the semi-colon from the front of STPWDA = 0. Save the file back to the B drive.

We have to make a similar change to OSSGL806.PAR. This is the "single user" operating system for the 806/20's.

> Using your editor, bring up from the B drive the file named OSSGL806.PAR . About 16 lines into the file, you will see the same two lines as described above. Make the same changes that we did on the OSLOD806.PAR file.

Note: Users of 10MB drives should also change the GEN files of the OSLOD806 and OSSGL806 files.

> You will see with your editor that the operative disk specification table is DST202 (20 megabyte, two partitions). Make that line a comment by placing a semi-colon in front of it and remove the semi-colon in front of the line DST102 (10 megabyte, 2 partition).

7) We must now "gen" up a TurboDOS loader and "single user" operating system. The TurboDOS GEN program is nothing but a link editor. Enter the following commands:

```
A>B:                          This will get us up on the B
                              Drive where all our "stuff" is!

B>GEN OSLOD806 OSLOAD.COM     This will gen up the loader

   ===> You will get a lot of output from GEN <===
   ===> You should not get any error messages <===

B>GEN OSSGL806 OSSINGLE.SYS   This will gen up the single
                              user TurboDOS

   ===> You will get the GEN output here <===
```

8) Now that we have configured and genned our loader and single user operating system, we will create what we at COGITATE call a SYSPRIME diskette. This is a CP/M formatted and bootable diskette that we can use to get up on an empty 806 system.

First use your standard CP/M utilities to format a CP/M diskette. Then use PIP to copy all the files from the B: disk to the diskette:

```
B>A:PIP C:=B:*.*[VOR]
```

9) We are now ready to fire up the single user TurboDOS! Type the following commands:

```
B>C:                          Get on the C diskette

C>OSLOAD C:OSSINGLE           This will Load the single user
                              operating system

   ===> You will see OSLOAD do a memory test        <===
   ===> OSLOAD will then load and run OSSINGLE.SYS  <===
```

You should get the TurboDOS prompt:

```
0C}                           You're on the c drive under
                              user 0!
```

10) We want to make our SYSPRIME diskette bootable:

```
0C}BOOT A: C:                 Copy the boot tracks to C
```

Save this diskette! With it you can get up on TurboDOS to recover from any problem very quickly!

11) TurboDOS will run much faster if we format the disk using the TurboDOS format program:

```
0C}FMTHD20 A:                    Format the A & B Drives!
                                 Use FMTHD10 for 10MB units.
```

12) The format program cleans up the drive. We now must initialize the directories and map out any bad sectors!

```
0C}ERASEDIR A:                   This will initialize the
                                 directory

   ===> You will be asked if "Hashed" directories  <===
   ===> are desired.  The answer is Y for Yes!     <===
   ===> It is ok to proceed!                       <===

0C}ERASEDIR B:                   Same as above!
```

We map out bad sectors via the VERIFY command. If any are found, a file named BLOCKS.BAD will be created to "tie up" the bad ones. We don't want that file to be visible, so we will change to user number 30 to hide this file! We also want to make sure our command files are all set GLOBAL.

```
0C}SET *.COM;+GN                 Set all the COM files
                                 "global". This lets us use
                                 them from other user numbers.

0C}30C:                          Go to user 30.

30C}                             See our new prompt!
```

We can now issue the VERIFY command:

```
30C}VERIFY A:

   ===> Answer Y to let TurboDOS proceed!  <===
   ===> You will get a period for each     <===
   ===> block.  About half a screen worth. <===

30C}VERIFY B:                    Same as above!

30C}0C:                          Get back to user 0

0C}
```

13) Let's copy all the files from the diskette to the A drive:

```
0C}COPY C: A: ;N

  ===> You will see each file copy down. <===
```

14) Since we formatted the hard disk we have lost the boot tracks; however, we cleverly saved it at Step 10! Let's put it back on the hard disk:

```
0C}BOOT C: A:                    This will read the "boot"
                                 tracks and write them out
                                 to a file named CPM.806
```

===> You will see some "*" as it reads and writes <===

15) Put the COGITATE distribution diskette in the drive (better remove the 1st time diskette first!). That is the C drive and it has the rest of our TurboDOS on it. Let's take a look at it:

```
0C}DIR                           Do a directory of C
```

===> You will get a long directory display <===
===> Notice that it is alphabetical and <===
===> that you have a LOT of files on it! <===

16) Now we're going to copy this diskette down to the A drive with our other files from the first time diskette:

```
0C}COPY C: a: ;N                 This will copy all the files
                                 from C to a. The ;N means
                                 do not ask for confirmation
                                 of each file.
```

===> You will see the individual files copy down <===

17) We now have both our TurboDOS disks down to the A drive. Let's get on the A drive:

```
0C}A:                            Set our default to the A drive

0A}
```

18) Let's take a break! We are now up on a single user TurboDOS. We have not yet set up a "master" operating system or any slave operating systems! We also must set up the proper slave operating system for each type of slave we have in the system.

TurboDOS allows us to set up many types of slaves. It is the "GEN" and "PAR" files that are the makings of a TurboDOS operating system. Let's take a look at what we have:

```
0A}DIR *.GEN                     Pull a directory of the GEN's
```

You will see a lot of them! Here's the key:

```
OS  = Operating System    - they all have that!
LOD = LOaDer              - the program that Loads TurboDOS
SGL = SinGLe user         - that's what were up under now!
MAS = MASter op sys       - using a dumb tube for console
REM = master with REMote  - using the master command for
                          - the console
SLV = SLaVE op sys        - a slave operating system
806 = the 806's           - runs only on any 806
846 = 816/40              - runs on the 816/40's
800 = New 800             - runs on 800, 803, 803H
80A = for the 800A        - runs on 800A, 802, 802H
80F = 802                 - runs on 802's and 802H's
80W = 802H                - runs on 802H's
803 = new 800's           - for new 800, 803, & 803H
83W = 803H                - runs on 803H's
TP1N = TPC 1              - runs on the TPC1
```

As you can see, we have the makings of a lot of stuff. We have to tell TurboDOS who goes where and what to use. We do this with the editor by modifying the GEN and PAR files and the GEN program.

19) Before we go any further, let's get rid of all the read only's that are on the files:

```
0A}SET *.* ;-RN          Subtract the read only attribute
                         from all the files
```

===> You will get a list of the files being set <===
===> It should be very fast! <===

20) First let us dig into the master operating system. This will be the one that runs in the 806. When we're done, we will name it OSMASTER.SYS. I recommend we use the OSREM806 version because the remote console feature is very nice!

The first problem is the Rodime or Tandon disk drive. If you have an 806/20 with the Tandon, then we must make a "patch" similar to what we did on the loader and on the single user operating system. Using your editor, bring up the file named OSREM806.PAR. About 17 lines into it, you will find our STPWDA lines. Make the same changes you did before.

If your configuration is all 800A's or new 800's with 64K, then there are no more changes to be made. If this is the case we will gen up our master and slave operating systems as follows:

```
0A}GEN OSREM806 A:OSMASTER.SYS


0A}GEN OSSLV80A A:OSSLAVE.SYS
0A}GEN OSSLV800 A:OSSLAVE@.SYS
```

OSSLAVE.SYS is the default slave operating system that will be downloaded to the 800A's and OSSLAVE@.SYS is the default for the new 800 terminals.

Users with only the 800A's and/or the new 64K 800's can skip the next section and go directly to Step 21, do not pass GO, do not collect $200.00!

If our system consists of other types of slaves, then we have to inform the master operating system who goes where and what boot to send down!

Using your editor, bring up OSREM806.PAR. Partway into it, you will see:

```
SST422 = "      "
```

The SST422 is the Slave Suffix Table. Normally TurboDOS downloads a file named OSSLAVE.SYS to an 800A type workstation and OSSLAVE@.SYS to an 803 type workstation. However, if we want to have different types of slaves downloaded to different ports, then we must somehow tell TurboDOS which slave operating system goes to which port. We do this by putting letters or numbers into the SST422 table. For example, if we made the table look like this:

```
SST422 = "ABC123"
```

Then whoever is plugged into port 1 would have OSSLAVEA.SYS downloaded to him; whoever was in port 5 would have OSSLAVE2.SYS downloaded to him, etc.. This allows us to configure specific slave operating systems for specific ports!

It is up to you to decide the contents of these two entries. If you are having trouble, give me a call and I will be happy to assist! This is one of TurboDOS's most powerful facilities!

As an example, let's say we're configuring for three 800A's and one 803. I would change my entries to look like this:

```
SST422 = "   A  "              ;OSSLAVE.SYS for ports 1,2 & 3
                               ;OSSLAVEA.SYS for port 4
```

I would save the OSREM806.PAR file I was editing and gen up the following operating systems:

```
OA}GEN OSREM806 OSMASTER.SYS

   ===> This will produce the master operating system  <===

OA}GEN OSSLV80A OSSLAVE.SYS

   ===> This will produce the slave operating system   <===
   ===> for ports 1,2 and 3                            <===

OA}GEN OSSLV803 OSSLAVEA.SYS

   ===> This will produce the slave operating system   <===
   ===> for the 803 in port 4                          <===
```

You may have as many slave operating systems as you require to configure your system. This is a little tricky because of the variety of slaves or userstations that you can use from TeleVideo.

Proceed with the configuration of your master and slave operating systems. There may be additional changes later for printer and baud rates, bank select and so forth; but for now, let's bring them up straight vanilla!

21) Whew! The hard part's over. You should now have the following files on your system:

```
OSLOAD.COM              The loader we started with
OSSINGLE.SYS            The single user we've been using
OSMASTER.SYS            The master operating system
OSSLAVEx.SYS            One or more slave operating systems
```

22) There are a few housekeeping steps we must do:

```
OA}COPY OSLOAD.COM MMMOST.COM

   ===> Copy our loader to MmmOST                      <===
   ===> You will see why we do this later!             <===

OA}COPY LOGON.COM 31A:WARMSTRT.AUT

   ===> Copy and rename the logon program to user 31 <===

OA}COPY USERID.SYS 31A:

   ===> Copy the list of users to user 31              <===

OA}CHANGE A:

   ===> This will force a "flush" of any buffers that <===
   ===> occured prior to us rebooting the system       <===
```

23) Let's give it a go! Hit the red reset button. If it says "booting from floppy", just hit the reset button again. You should see:

1) The "booting from hard disk" message
2) The CP/M copyright
3) OSLOAD do his memory test

===> Remember we copied OSLOAD.COM to MMMOST.COM <===
===> CP/M always loads and executes MMMOST.COM <===
===> But it's really OSLOAD.COM! <===

4) OSLOAD should say OSMASTER.SYS being loaded
5) The cursor should return to the left and the terminal should be dead!

But TurboDOS should be alive! Remember the remote version of the master operating system does not use the RS232 terminal! Later we could hook up a printer to the terminal port!

Set the terminal you're using (or a different one) up as a slave or userstation. Make sure the RS422 cable is in the proper port! Reboot your slave userstation. You should get a bunch of +'s and -'s! You should get a 0A} prompt!

We're up!

Take some time to experiment with the COM files. **Make sure you don't do the format or ERASEDIR again!** Get familiar with the user areas, and the global facility.

FILES REQUIRED FOR NORMAL OPERATION

We have a lot of baggage on the A drive at this point. Most of these files are not required for operation. Only the *.SYS files, and the *.COM files are necessary! All the GEN, PAR, and REL's can be removed. It would be wise to make backup diskettes of them, though.

FILES REQUIRED TO GEN

To regen an operating system, the GEN command must be issued from a drive that has all the GEN, PAR, and REL's on it. If space is not a problem, I suggest you move them to user 29 on the A or B drive.

MODIFICATIONS FOR 128K USAGE

The new 800's, 803's, 803H's, and TPC1's have room for bank select. This will give the user a TPA of 63K bytes! The GEN file must be modified to support the TurboDOS bank select capabilities.

In the GEN file:

> The NETLOD, NORLOD, FASLOD, modules must be removed by deleting the line or preceding the module name by a semi-colon to make them into comments. The semi-colons in front of BNKMGR, BNKREQ and BNK803 must be removed to make these lines active.

The slave operating system must be regened and the slave must be rebooted before it will take effect. **NOTE: The GEN command for a 128k slave MUST be followed by ;K0E000!!** (i.e. GEN OSSLV800 OSSLAVEB.SYS ;K0E000)

HOT LINE FOR HELP

Advice and spiritual guidance is available from:

Jim Harlan (313) 352-2345
COGITATE, INC.
24000 TELEGRAPH ROAD
SOUTHFIELD, MI 48034 USA
Telex: 386581 ELN: 62757512