MDOS Change Log
Compiled by Andy Frueh

The Myarc Disk Operating System was originally developed by Paul Charlton. After Beery Miller completed the MDOS buyout, Beery Miller, James Schroeder, Clint Pulley, Alan Beard, Barry Boone, John Johnson, Tim Tesch, and Jeff White contributed various bug fixes and new commands as outlined below.

This information is best read after thoroughly reading the MDOS manual. It is listed in chronological order. Note that some features and functions listed in earlier versions may be removed or altered in later versions.

v.97	NOTE	Commands mostly implemented as per the MDOS manual.
v1.2 0	NOTE	First post-buyout version of MDOS
	FIX	Applied KSCAN mode 8 fix to KEY1S.
	FIX	Revised VID XOP'S >12 to >15.
	FIX	Modified XOP >35 to do range check on VDP register #.
	FIX	Modified Memory management to properly identify memory >1.0MB to be 0 wait state.
v1.2 1		
	FIX	Set text screen mode 26.5 * 80. Not all tables were "full" of data to handle all conditions.
	FIX	Jim Schroeder fixed Horizon RAMdisk support for 8/16 bit cards to use CRU >1400 and CRU >1600. Drives DSK6, DSK7, DSK8, DSK9 set for these options as default.
	FIX	Revised XOP >11 by correcting coding errors, clearing the VDP EQ bit in R#46, optimizing low level operations.
	FIX	Revised memory management to be once again compatible with the Myarc 512K card and allow normal memory acquisition. Previous fix in V1.20 was incorrect for the Myarc 512K card. Due to no way of positively identifying memory speed since switches can be manipulated, all memory cards with 1+ MB will have pages >40 to >7F and >C0 to >FF be 0 wait state (original MDOS concept).

		This solves HyperCopy timing problems and other "random" errors seen by people using the Myarc 512K card.
	FIX	MDOS now has a variable reserved FDR capability. Now, 720K disks can store all filenames on the initial 128 sectors, while 90K disks will maintain the TI original number of reserved sectors. Intermediate size disks have varying reserved sector count.

	NEW COMMAND	Added a new high speed video command. Turns the Geneve video wait states on/off. Default is "wait states enabled."
		
		Use of GPL resets this value and will require resetting to VIDEO ON, despite the setting it reports after running GPL.
		
		Also, if using GENMOD and 0 wait MEMEX, some applications will run too fast and will require setting VIDEO OFF to not lose video display data as the 9938 Video Processor can not keep up with our fast CPU.
		
		`VIDEO ON`
		turns video wait to high speed (0 wait states)
		
		`VIDEO OFF`
		turns video wait to normal speed (1 wait state)
		
		`VIDEO`
		displays current setting.

	NEW COMMAND	The command VERIFY ON or VERIFY OFF can be issued from batch file or MDOS command line. Default is VERIFY ON which is how MDOS was written. Using VERIFY OFF, MDOS will not verify disk writes (TI-99/4A style) and will allow speedier floppy access.
v1.2 3		
	NOTE	This was the last 358 sector version of MDOS, primarily for floppy-based systems. All subsequent releases will be hard drive compatible and will not fit on a SS/SD disk.
	NOTE	Use of J. Peter Hoddie Eprom with Horizon RAMdisk is not recommended as supporting

		various 8/16 bit Horizons causes problems. Replace the Hoddie Eprom with original Horizon 8K RAM chip and use Jim Schroeder's Format utility.
	FIX	A major bug using files on the HFDC in update mode was fixed by Clint Pulley. Now, TI-BASE, FirstBase, Telco's TOS/PHONE files, and others work properly. If your system presently has files that may be "bad", copying to Geneve Internal RAMdisk or other floppy device with Clint's Directory Manager will prompt you to repair them. This problem was triggered by opening a database file, accessing a record part-way but not all the way to the end, and closing the file. The file would close at the last record accessed losing everything beyond that point. This bug existed in only the H version of MDOS when working with files stored on the hard drive.
	FIX	The default table for floppy only systems (F&H MDOS) allows DSK9 to be a 16-bit HRD card at CRU >1600.
	FIX	Removed code that interfered with Mode 40/80 usage when used with composite color monitors versus monochrome monitors.
	FIX	Updated MODE/Printer problem that was caused with a fix to v1.21 that was not compatible with quite a bit of software. TPA should now print properly.
v1.50		
	FIX	Fixed problem with formatting floppies from the command line in drives attached to the HFDC.
	FIX	Modified hchar/vchar printing routines resulting in screen writes taking 3.5 seconds versus 6.7 seconds in previous graphic screen writes.
	FIX	Fixed conflicts between the mouse driver and command line hooks caused by table overwrites when defining characters higher than ASCII 128.
	FIX	Fixed a bug with character definitions in certain bitmap modes when reading patterns from the screen.
	FIX	Modified TIME/DATE function to not query for input if in batch mode.

	FIX	Re-modified character set to MDOS original.
	FIX	Modified Horizon RAMdisk support to "force" use of the proper REMAP configuration if they are using a 16 bit RAMdisk greater than 256K.
	FIX	Clint Pulley fixed Paul Charlton's high speed disk I/O transfer routines. Use hard drive interlace of 7 for optimum speed. Floppy I/O will also be speeded up under certain conditions.
	NEW COMMAND	CASE ON/CASE OFF will convert lowercase filename to uppercase filename. The default is to accept lowercase filename and convert to uppercase automatically.
v1.5 2		
	NOTE	Users wishing to use the WDS ON capability must either use just a Myarc HFDC as their floppy controller, or use a CorComp Disk Controller. Attempts to use WDS at CRU >1200 on the Myarc HFDC with a TI or Myarc Disk controller present will cause lockups. The TI and Myarc Disk controller card DSR's would require modification to allow this support.
	FIX	Modified Drive decrements so that whatever drive assignments you set from AUTOEXEC, they carry forward to GPL mode. GPL mode will not offset drive sequencing as previous versions from 0.97H to 1.50H which were caused when EMULATE drives were active.
	FIX	Fixed usage problems found with LABEL command. Problem was actually a bug with BREAD/BWRITE on sector 0 I/O buffering as the Geneve (and TI-99/4A) can not determine when a drive door has been opened.
	FIX	Modified file redirection to use DV80 files instead of DF1 files.
	NEW COMMAND	Added new MIRROR command that must be used in an AUTOEXEC file. The command provides support to recover hard drive data in the event a cylinder 0 or bitmap crash occurs. MIRROR 1 Stores bitmap of hard drive #1 MIRROR 2 Stores bitmap of hard drive #2

		Note: MIRROR 3 is not available as the HFDC hard drive #3 permits reading from that drive only. Note 1: This command copies sectors >00->1F to sectors >20->3F of the hard drive. In the event of a cylinder 0 failure on your hard drive, then one may use a sector editor (SECTORONE for MDOS) to copy sectors >20 to >3F back to >00 to >1F returning the system to the last successful use of MIRROR. Note 2: MDM5 permits formatting the hard drive using 32 sectors per cylinder. CFORM has extended the capabilities of the HFDC to make use of 33/34 sectors per cylinder. In the event you choose to format 33/34 sectors per cylinder with CFORM (instead of 32), then reformatting cylinder 0 of your drive in the event of a failure will invalidate the use of MIRROR. Note 3: If you reliably use MIRROR and format your hard drive to 32 sectors/cylinder, your chances of recovering data from cylinder 0 failures is much greater. Following a cylinder 0 failure, you MUST only format ONE cylinder. Do not format the entire hard drive or you will overwrite the information that MIRROR stored. Following the restoration of the backup sectors (copying >20->35 to >00->1F), it is possible that a DIR command will abort if files were deleted or if illegal filenames now exist. In they event that they do, you should still be able to use the CHDIR command to access other subdirectories. Access to the root directory and other subdirectories depends upon the deletions or modifications of files that took place following the last use of MIRROR. After having restored the hard drive and recovering any files that you need to recover, it is HIGHLY recommended that you then do a complete reformat of your hard drive. Do not ever save any files to the hard drive following a restoration. You further risk corrupting additional bitmaps.
	CHANGED	Modified the Geneve Internal RAMdisk

	COMMAND	"RAMDISK" command to be universal in all memory configurations. In a warm boot or cold boot of the operating system, the RAMDISK will reinitialize if TIMODE is enabled. One may disable the TIMODE in a redirected autoexec file ("&filename") if the RAMdisk is kept the same size without losing the disk contents. This was required to solve TIMODE/RAMDISK memory conflicts in systems with no expanded memory on their Geneve.
	CHANGED COMMAND	Removed VIDEO command. Too many users were using VIDEO ON with MDOS programs that were incompatible and they thought MDOS was the problem. Programmers must implement these commands if they want the extra speed.
v1.5 3		
	NOTE	EXEC will no longer run MY-Word on stock memory systems unless TIMODE is active. If you have extended memory, TIMODE is not necessary. Use the modified MY-Word loader.
v2.0 0		
	NOTE	Tim Tesch's CRaCkit utility is now used to compute a checksum for MDOS distributions. The checksum for v2.00 is B74C (unsupported in CRaCkit 2.0).
	NOTE	There is one bug left in MDOS that has been present all the way back to MDOS 1.14 and possibly earlier. MDOS opens/closes files differently than the 4A system and returns file parameters back if there is insufficient space for a file. Due to this, few programs perform all the necessary error detection. When copying files, use Clint Pulley's Directory Manager for MDOS mode and you should never experience the problem.
	FIX	Added support for 3.2MB Horizon RAMdisks using HRD formatting program by James Schroeder.
	FIX	Added support for 1.44MB floppy drives. See Appendix C in the MDOS manual.
	FIX	Modified Power-up routine while in GPL mode. Eliminates lockup when using ROMPAGE/OLDDSR utilities and exit GPL

		improperly.
	FIX	Scroll-Back Buffer has been fixed as noted: 1. PAGEUP now works properly 2. When finished looking at the buffer, the screen is returned to the previous state. 3. Changes were made to accommodate the MODE 90 command; buffer now can be reviewed in 26-line mode 4. Bug fixed, 40 column scroll-back now works properly 5. Graphics mode trap added. Scroll-back only works in the TEXT modes. 6. CTRL-C deactivated while in the scroll-back routine 7. All screen reads/writes are TTYOUT independent 8. Tested with VDP wait states on/off - no ill results 9. SCREEN DUMP ADDED - Pressing "P" dumps the current screen to the printer.
	NEW COMMAND	Added HARD command. HARD OFF Turns off HFDC access HARD ON Restores HFDC access (default)
	NEW COMMAND	Code for a new command, DISK1 <OFF> or DISK1 <ON> was added. This will effectively turn on or off the "HDS1.DSK1." emulation, so users may choose whether files are accessed on that subdirectory while in GPL mode.
	CHANGED COMMAND	The MODES command has been changed. New features are: MODE 60 --> Graphics Mode SIX activated MODE 90 --> TEXT mode II, 26 line mode activated
	CHANGED COMMAND	Added new /N switch to FORMAT. The command when /N is used disables the floppy verification of all sectors on the disk. Floppy formatting is much quicker when this feature is active.
	CHANGED COMMAND	1. High ASCII is no longer masked - DV80 files with IBM graphics will be displayed; a file to define the high-ascii was made available. 2. DF128 files are displayed without any MDOS interpretation. PC text files with CR/LF

		combinations will display properly
		3. The MORE function "/M" has been changed.
		      a) works in 24 and 26 line modes
		      b) the prompt is now "`Press any key,`
		      `(A)bort, or (N)onstop...`" and works
		      equally well with DV80 and DF128 files
		4. File-closing problems were eliminated.
		Certain files would exit the TYPE routine, leaving a file open. Enough of them caused system failure.

v2.21		
	NOTE	Memory pages >C0 through >EF will be treated as FAST RAM if available for system usage.
	NOTE	If you have not obtained EXEC 2.11 from Tim Tesch, it would be wise to obtain this program, which includes enhancements such as ROMpage support, SuperCart support, video fixes, and more. Programs such as MDM5 and Spell-It! can be used from MDOS without using the WDS support (TI ON/OFF).
	NOTE	COPY command may still exhibit problems; cause still unknown.
	NOTE	FORMAT command may fail when both a Myarc floppy controller and Myarc HFDC are in the system. If you experience this problem, the best remedy is to turn your system OFF for 20-30 seconds.
	FIX	RS232 detect routine modified to be DSR independent.
	FIX	Keyscan modification (same one made to GPL and EXEC 2.11)

	CHANGED COMMAND	The REMAP table has been changed.
		    Device 20 - PFM Flashdisk #1
		    Device 21 - reserved for Flashdisk #2

v2.50		
v4.00		
v5.00		
	NOTE	Besides SCSI devices (including ZIP disks), the new MDOS is capable of supporting the PFM and Rave devices, the Psystem, and more.
	NOTE	MDOS now consumes 120K of memory. The

		SCSI support added 16K (8K for code, 8K for buffers). MDOS 2.5+ require an additional 32K of fast RAM for SCSI access.

Some have suggested removing some routines such as TREE or FORMAT. The fact is that removing these and/or other routines would not allow us to shrink MDOS. The bulk of the code is found in the libraries of functions which make up MDOS; device handlers, video routines, DSR routines, and more. To shrink MDOS by 8K would require a lot of code shuffling, something which could "break" MDOS/GPL and the programs they run.

So we face the memory issue once again. In the future it may be possible to have MDOS detect whether a SCSI or HFDC is in the system then use only the memory/pages needed for the cards. However, if you have one or both of these cards and you need more memory, then buying expansion RAM is the way to go. Whether you buy a Memex, Myarc 512, Rave, or 384K upgrade you will eliminate your memory shortage. |
	FIX	Fixed bug present in MDOS 2.50, caused MDOS to lock during power-up.
	FIX	RAM count for pages >C0-EF modified to count them as FAST RAM.
	FIX	Re-added Jeff Whites keyboard filter to the MDOS keyscan routine. Keyboard processing now operates the same as GPL and EXEC 2.11.
	FIX	SHIFT-SHIFT-CONTROL works with all versions of PFM.
	FIX	Jeff White fixed SCSI Genmod support.
	FIX	Creation time stamp routine corrected when using COPY CON. It no longer uses the last time/date created in the buffer but goes out and checks the current time.
	FIX	CALL DIR(), EXTENDED BASIC w/OTHER RAMIFICATIONS!

A long-present DSR bug was finally eliminated. This bug caused the CALL DIR() to lock up whenever it was used with an emulate file or a HFDC floppy. |

		The CALL DIR code is located in two areas, one for all floppy support and the other for HFDC. The HFDC CALL DIR code is not used but could be added at a later date. Directories are not displayed, but that too could be added later. Removing this bug should stabilize other HFDC Floppy operations.
	FIX	SAVE PROGRAM (under Advanced BASIC or Extended BASIC in GPL) Fixed problem with SAVing files. Before, saving a file over an existing file would blast the create date. Now the creation date is preserved, even if the file being saved is a different type than that on the disk (ie, saving a XB IV254 file over the existing PROGRAM file).
	FIX	RAVE RAMDISK SUPPORT 1. A Rave RAMDISK using the default MDOS configuration will give you 32K more memory showing up at pages >B9, >BD, >BE, and >BF. 2. I could not automatically check for the Rave - there was no room for the routine. So, to use the Rave as a RAMDISK, you have to do some sector editing. Search MDOS 5.00 for HEX String: >9640 To activate the Rave RAMdisk, replace the string with >0000. 3. A formatting routine is available for the Rave but is not included here.
	CHANGED COMMAND	REMAP Typed in alone, remap now displays the current mappings for each drive number. To save space, only the drive number and map letter (as shown in REMAP_TXT) are displayed.
	CHANGED COMMAND	SETDSK Typed in alone, setdsk now displays the current paRAMeters for each drive.

	CHANGED COMMAND	CHKDSK /F Jeff White fixed the display routine for hard drives with capacities in excess of 99MB. Now writes back the corrected bitmap if bad sectors are found on the FLOPPY being verified. If the disk is write-protected, MDOS will display an error message. CHKDSK * Checks for fractured files on FLOPPIES only. Because code for this operation is floppy-specific, hard drives are not supported.
	CHANGED COMMAND	DISKCOMP Bad sectors on source/target disks caused this routine to increment the TOTAL number of sectors by one for each bad sector, thereby causing the routine to loop indefinitely (verified w/2.21). Now both source and target disks are checked for errors. Should an error occur, it is reported, and that sector skipped.
	CHANGED COMMAND	DISKCOPY Bad sectors caused the DISKCOPY command to fail similarly to the way DISKCOMP failed (verified w/2.21). The bugs have been removed, and this command will copy disks properly. Bad sectors are skipped on the source. The bad sectors not read on the source are written to the target using whatever is in memory at the time of the copy. Errors on the TARGET diskette will cause the DISKCOPY to skip writing of that particular sector. This means that the data did not copy correctly, and it is time to reformat the target disk or throw the target disk away and get a new disk!
	NEW COMMAND	PSYS Use this command for Psystem emulation. Jerry Coffey has tested this with the psystem development system and is putting together a package for Geneve users. Syntax is as follows: `PSYS` displays current setting

		`PSYS ON`
		Enable psystem emulation
		
		`PSYS OFF`
		Disable psystem emulation (DEFAULT)

v6.00		
	NOTE	Anyone wanting to use MDOS 6.00 **MUST** have the extra 32K RAM on their Geneve. Multiple memory locations are hard-coded making moving things around difficult.
	NOTE	GPL was not modified for MDOS 6.00 as there was really nothing to add or fix. However, I have modified the version and included it with MDOS 6.00 to keep things straight.
	FIX	RAVE RAMDISK CYA will now modify MDOS 5.00 and 6.00 with respect to the Rave RAMdisk. No more sector editing required.
	FIX	SETDSK / REMAP / HARD <on/off> Modified text output shown during an error in SETDSK/REMAP/HARD commands. Changed display in HARD command; now shows current status.
	FIX	Support for the 512K PFM FLASH chip was added.
	FIX	Removed some offending code (Winchester) from MDOS. Also removed TI ON/OFF capability, which previously used to access the HFDC/SCSI at CRU >1200 as "WDSx". This has cleared up some conflicts between the SCSI and the HFDC.
	FIX	YEAR 2000 (a) The DIRectory routine now displays the full year. (b) The clock code was modified to fix a Year 2000 bug. Dates through 2050 were checked, including dates falling on a leap year, and were found accurate. I am happy to say MDOS 6.00 is Year 2000 "compliant," though there may be programs used on the Geneve which are not.

		(c) Researched possibility of changing clock code to give user the full year. Decided not to make change, as it would likely break multiple applications which rely upon the 8-character output string.
	FIX	For Rave RAMdisk support, modified low-level sector code. Stabilized the access routine, which at times caused corruption in the first 32K.
	CHANGED COMMAND	MIRROR command has been REMOVED. Instead, please use the accompanying file SAVEIMAGE. This program will let you save sectors 0-33 (CFORM compatible) from any HFDC or SCSI device to any other device. LOADIMAGE, used to restore the sectors, is not released here, as I do not feel comfortable giving that out with MDOS. If you want a copy, feel free to ask. Docs are included with SAVEIMAGE.
	CHANGED COMMAND	Removed the "TI ON/OFF" command, implemented by Beery Miller some time ago. Beery implemented this command so that people could use the HFDC or SCSI at CRU >1200, and access it as "WDSx".

Unfortunately, these routines were one source of the trouble most folks have with the HFDC, and as such, were removed.

Anyone using the "WDSx" feature will need to continue using the older versions of MDOS or change the manner in which they access their devices. |
| | **NEW COMMAND** | SCSMAP (SCSI REMAP) COMMAND

Some SCSI devices won't respond to SCSI ID 0, 1, or 2. To fix this problem, I've added a new command (CYA compatible) which remaps a specific ID to SCS1, SCS2, or SCS3.

Command: SCSMAP <drive><device>

Examples:

`SCSMAP 13`
Maps SCSI ID 3 to SCS1. |

		`SCSMAP 26` Maps SCSI ID 6 to SCS2. Note that remapping a SCSx drive to the SCSI controller ID could cause a lockup!

	NEW COMMAND	VIDEO Command again available
		
		After being removed some time ago, I've placed the VIDEO command back into MDOS. This command turns the video wait states on/off. While it reports the current state of the command, please note that it ***may*** report the status incorrectly. This command was added as a convenience.
		
		`VIDEO FAST`
		turns off wait states
		
		`VIDEO SLOW`
		turns on wait states

	NEW COMMAND	IBMGRF The MDOS internal character set has been expanded to 255 characters. This means that characters 128-255 are now defined and available using the following command: `IBMGRF <on/off>` IBMGRF OFF - "Normal" characters 0-127 (default) defined. Characters 128-255 are not redefined. IBMGRF ON - ALL characters 0-255 defined. This causes at least one program, Clint Pulley's Directory Manager, to look "wrong". Clint defines his characters before asking MDOS to define the remaining chars, hence the screw up. Create a batch file for DM which turns IBMGRF off/on before/after using DM. Using this command eliminates the need for "IBMGRAPHICS", a program released a few years ago, and gives the added benefit of retaining those characters at all times. Additionally, CYA will embed your favorite

		character set within MDOS.
		Thanks go out to Tony Knerr for his idea and his original program, CHARAPATCH!