LASER3.TXT: From CompuServe Information Service, CDROM Forum

01/18/92 - Creation
01/23/92 - Revision 1
02/01/92 - Revision 2
03/09/92 - Revision 3
03/14/92 - Revision 3A
03/21/92 - Revision 3B
03/22/92 - Revision 3C
03/24/92 - Revision 3D
04/04/92 - Revision 3E
04/16/92 - Revision 3F
04/18/92 - Revision 3G
05/03/92 - Revision 3H
05/31/92 - Revision 3J
06/21/92 - Revision 3K
10/09/92 - Revision 3L
11/14/92 - Revision 3M
11/26/92 - Revision 3N
12/05/92 - Revision 3P
12/28/93 - Revision 3Q
01/93 - Revision 3R

I thought some notes from the trenches on optimizing the Sony Laser Library
(LL), Model #CDU-7205 (its companion, CDU-535, is an internal version of the
same basic drive, usually minus the software bundles) -- or even getting it
up and running -- on an AT clone might be helpful. I do not hold myself up
as an expert; much of what I've picked up was discovered right here in the
CDROM Forum thanks to helpful and knowledgeable folks with a willingness to
share; this is more a summary of their tips, rumors and suggestions (Thank
you, all!). If you learn, share. Much of this information is transportable
to other drives and systems if care is exercised. Please let me know if you
have something to add or correct, and I'll try to update this file to keep it
current.

The LL is a good, popular external drive and is sold with a bundle of 6 CDROM
disks. I believe the LL has been superceded by the new Desktop Library
bundle that is MPC compatible, but I haven't checked that with Sony yet. The
topics I'll cover here are pretty much limited to a 486/33 AT clone with DOS
5.0 and 8MB of RAM. Most of the discussion will apply to a 386SX processor
or higher. Sorry, not much Windows (defenestrate it!), network, or
Multimedia Extensions info here, but there is some help for Windows 3.1
installation problems if you can stand a few other condescending comments
about it.

For information on multimedia there is a lot of knowledge on the Forum, also
on the Multimedia Forum (GO MULTIMEDIA), the Multimedia Vendors Forum (GO
MULTIVEN), and elsewhere on CIS; and you might also want to review the
3/31/92 issue of PC Mag that has several articles on the subject.

Opinions are usually my own and are highly subjective!

THE BASICS:

To achieve anything with this tome, you *must* know how to edit your CONFIG.SYS and AUTOEXEC.BAT files and have a reasonable understanding of what they do.

For some additional background and discussion you might wish to review PC Magazine's review of CDROM drives in the 10/29/91 issue. It's not one of their better efforts, especially concerning this drive and the software quirks, but it's a start. PC World also did a review of CDROM drives in its 5/92 edition and listed the LL as one of its three "Best Buys", albeit in third position. The two most-favored drives then were NEC's CDR-73M and Toshiba's TXM-3301E, with honorable mention to CD Technology's Porta-Drive T3301 for notebook users and Corel's Blockbuster CDROM Bundle for desktop publishers. Despite the LL's technical non-compliance with MPC specs (not noted in the PC World review), the LL passed their tests on currently-available MPC software (See below for the Media Vision Pro Audio Spectrum Plus with Sony Interface board that will bring the LL into conformance with MPC specs, albeit for lots more $$$). Nor is the LL XA, (eXtended Architecture) or CD-I, compliant to my knowledge. Contrary to my previous report, the LL may be Photo-CD compliant per the latest list in KODAK.TXT available in Library #7 here. That file lists all Kodak-tested drives, but note that it lists specific controller boards, etc. that it tested; mine wasn't listed, so I don't know where I stand. Thank you, Rich Bowers!

In the 12/92 issue, page 408, of PC Computing there's a good article on fast, higher-end CDROM's that are still moderately priced; the NEC InterSect CDR-74 got a nomination for their 1992 most valuable product award. Texcel's DM-5024 was the other drive selected for best multimedia performance.

The 12/22/92 issue of PC Mag (pg. 124) chose the NEC InterSect CDR-74 as its winner for technical excellence (and some big $$$); in the same issue there is an extensive review of CDROM drives (pg. 293) and "27 Good Reasons To Buy a CD-ROM Player" (pg. 345), a review of several software titles and lists of many MPC titles and vendors. Pardon me whilst I drool...

LL's hardware/software installation routines and instructions are generally adequate for plain vanilla systems; but if you have special needs -- a network, other complex drivers or initialization routines, etc. -- they will almost totally desert you. Being confined to only one system with CDROM, I'm light on info for hardware installation and would appreciate a contribution from anyone who's run the gamut. The factory material was adequate for me. As to installation software, there was a mention from Robert Hunter that you should not try and change Sony's default directory, \LASERLIB, as that will create problems.

The PC World review mentioned above that the LL can be mounted on its side. Many other drives cannot be side-mounted, however. Check the PC World chart for information or contact the manufacturer of your drive before taking the plunge.

The LL is reported to be fully-compatible with DR DOS 6, courtesy of Robert Kelsoe.

NOTE: Please see the CAUTION on about page ten of this file if you plan to install LL with Windows 3.1 for the first time.

Stacker users, please also note that installation of Stacker (a brand of software and/or hardware to increase disk capacity) *after* the installation of a CDROM will probably alter your setup in such a way that your CDROM won't work without some tweaking. Stacker creates a second logical drive, usually D: if you have only a C: hard drive, and thus absconds with the D: drive letter that was formerly used by your CDROM. Instructions for changing drive letter assignments are covered below in discussions on MSCDEX, especially the /L: switch. Depending on your CONFIG, you may also need to adjust your LASTDRIVE statement as well. Thanks, Luc DeBecker!

Sony is out of sync with the current industry practice in that their interface for this drive is proprietary, not SCSI (Small Computer System Interface). But there seem to be enough tweaks to the supposedly standard SCSI interface in use that that standard has plenty of problems, especially, however, for those who want to daisy-chain dissimilar drives, etc. The Sony adapter will permit multiple LL drives (4) to be daisy-chained from it, but the procedure is not for the non-technical among you. For those of you that are installing a SCSI drive, or trying to troubleshoot one, I highly recommend Winn Rosch's informative article "SCSI Made Simple" in the September 1992 issue of PC/Computing. Almost all SCSI adapter, device numbering, terminating, and other potential minefields are simply and thoroughly explained therein. In addition, there is a brief but informative mention of the three basic SCSI standards on page 384 of the 11/92 issue of PC/Computing that also give you some clues about how to make the different standards cohabitate.

Kim Bigelow and Kirkland Duckworth mentioned that, if you have SBPro card, you can find a 4' stereo patch cable at Radio Shack with 2 RCA phono plugs on one end (to plug into the rear output jacks of the LL) and a 1/8" mini stereo plug on the other, which can be plugged into the top input jack on the SBPro. Speakers are then plugged into the SBPro output jack above the sound control. Keith Meyers supplemented that with a mention that you'll need to go into the SBP-SET utility and increase the volume settings for the LINE input -- see your SBP manual.

LL is *not* Multimedia PC (MPC) compliant so if you're having difficulty with selected disks only, check that they do not require a complete PC system that meets those specifications. Many people on the Forum have reported that current CDROM titles that require MPC systems run fine on the LL, but there's no guarantee that this will continue. See below for how to make a LL MPC compliant.

Likewise, if you're having problems with a single title on a fast machine, particularly a 486/33, try slowing it down with the turbo switch, BIOS, or whatever may be appropriate to your system, and try that with a clean boot as below. A lot of software has not been properly tested on a large enough variety of 486's and may not be prepared to receive data back from the hardware as quickly as a 486 can deliver it.

The long-promised MPC upgrade, variously promised by Sony and Media Vision (MV) and which was supposed to be available 3/92 was finally shipped 10/92. The upgrade uses two slots and replaces the original Sony interface card, plus whatever sound board you may have been using. The basis board for this upgrade is the MV Pro Audio Spectrum Plus (PAS+), which is not MV's 16 bit

top-of-the-line product, nor does MV have any plans to add the Sony interface to their Pro Audio Spectrum 16 in the future. But the PAS+ is a great improvement over my AdLib board and is both AdLib and Sound Blaster compatible. You can call (800) 356-7886 to order; $239 per kit plus tax and S&H (about $269 total in CA), and they have different models for either an internal or external Sony drive, presumably either the LL or the model 535. They won't charge your credit card until shipment. Sony is referring inquiries to MV.

Many of the earliest versions of the PAS+/Sony upgrade have a bug and will not display video. If you have the following situation, you probably have a defective bracket adapter that needs to be replaced: The unit does not display video (or does so on only a few CDROM's or is very unstable, but all the drivers, MSCDEX.EXE (v2.21 only, please!), MVSOUND.SYS, and SONY_PFM.SYS loaded correctly (look for error messages when loading and check with the MEM command to see that they are loaded); AND the unit plays audio from both CDROM and normal audio CD disks correctly; AND you can copy a data file from a CDROM onto another disk and successfully use DOS's COMP command to compare them. If you bought your PAS+ with Sony Interface card directly from MV, MV will send you a new bracket adapter, available 11/92, without charge along with a CDROM of "Where in the World is Carmen San Diego, Deluxe Edition" for your trouble, a nice touch; and more than most companies would do under similar circumstances. Alternatively, they will also give you a refund if you don't want to wait for the replacement if you call 800-356-7886. I'm waited; I wanted MPC compliance and better sound. The revised bracket adapter has a "B" suffix on the part number. FWIW, the new bracket adapter alone didn't fix the problem for me after eight weeks of no video from the CDROM. But, EUREKA, the new bracket adapter, followed by removal of the /I:15 switch from the SONY_PFM.SYS command line in CONFIG, did the trick! It's worth the wait!!

The installation process for the PAS+/Sony is NOT for the faint of heart, those who aren't familiar with the guts of a PC, or those who do not know how to manually edit AUTOEXEC and CONFIG and twiddle therewith. The three required drivers use about 33K of UMB on my system, plus oodles of expanded memory (extended memory can't be used), and there are switches galore in the software to set, but the manuals do a pretty decent job of explaining it all so I won't review them here. If you don't have expanded memory for the additional buffers it needs under DOS, don't bother buying the product. Without expanded memory, you aren't likely to have enough conventional memory available to run a program. But, if you don't have expanded memory to stash MSCDEX's normal buffers anyway, you are not going to be happy with almost any drive cuz almost all normal installations require MSCDEX. And if you don't have a 386/486 system with UMB available, that 33K of drivers alone may send you into a RAM-cram mode very quickly anyway; but, then, if you're concerned about MPC specs and performance, you already have such a platform, or you wouldn't be reading this, right? You can install the board to operate under DOS or Windows or both. There are some contradictions in the documentation; watch out for proper orientation of the two cables, both can be reversed very easily.

Media Vision is in Fremont, CA and can be reached at (800) 348-7116. As of April 16th, they expect to have a voicemail system that will explain their PAS-16 upgrade program at (800) 356-7886, not to be confused with the Sony-specific MPC upgrade product. Info on the latter can be obtained from MV

Sales at (800) 845-5870.

[FWIW Dept.: Keith Myers had been doing some digging on the MPC compliance issue and said Sony wouldn't commit to any answers on the LL. (This was before MV released its product.) He reported that they've said they're working with MV to develop new boards that meet MPC and won't admit to developing their own standalone until/if it is actually in the distribution channels. One of Sony's people told him that Sony's policy is to keep distributing the non-MPC material until an MPC fix is available. The inference is that they'll deplete existing stock before bringing MPC adapters of their own into play, I guess. Customer-driven, they are.]

* * *

The latest from the trenches on upgrading the LL, from David Louton, 70242,501:

"The real reason for this message is that I also have been impatiently waiting for the upgrade to the LL from Media Vision. When I got the photocopied spec sheet I was less than enthused (and a bit confused...) so I waited until COMDEX to see if there were any other information and/or options. The people at the MV booth had no clue what the LL upgrade was so they gave me the name and number of a person at MV Customer Service to call. On a lark I stopped at the Sony booth to ask about the LL upgrade. They told me about another upgrade from Trantor Systems Ltd. (510) 770-1400 that consists of a new driver SONY_PF.SYS (9789 bytes, 10/09/92) and a couple of jumpers that will make the drive "MPC compatible and faster". The package costs $39 + T/S/H. One of the jumpers goes from the DRQ3 top pin to an appropriate IRQ pin and the other jumper goes on the DACK2 pair of pins. The driver uses the same options as SONY_CDU.SYS plus options to set the IRQ and the prefetch buffer size.

"I got the upgrade last week and so far it is a bit unreliable. I have been using the new MapExpert CD from DeLorme (maker of Street Atlas) and the Windows 3.1 screen will freeze after anywhere from 2 to 20 minutes into using the program with the CD light flashing on and off. The three finger salute (Ctrl-ALt-Del) gets me a message from Windows stating that the "System is Busy or Unstable ..."; another three finger salute "cures" the problem. I spent at least 4 hours twiddling with the options, jumpers, AUTOEXEC.BAT, CONFIG.SYS, etc. but the problem continues. I called Trantor today but they said it was probably a MapExpert problem even though it never gave me problems before the upgrade. They suggested that I try other CDs to see if they have problems also. Both of the ones I tried eventually caused the same thing; one was a Kings Quest V (run from DOS) and the other was Microsoft Bookshelf 92 (from Windows). I also noticed that if I ejected the CD after the screen freezes the program would notice and complain; when I put the CD back in I could get it to continue.

"When it is operating correctly the disk light does flicker much less, but I do not notice any big speed increase with MapExpert, although that program is mostly limited by screen redraw, not CD access time."

Then the following arrived:

"Reference: Sony Laser Library Upgrade - Part 2

"This message is a follow on to the SONYLLUP.TXT message that I sent to you on 3 December 1992. After spending about 6 hours trying to get the Trantor Systems Ltd/Sony Laser Library to work with my system I finally just gave up. I tried every conceivable combination of interrupts, ports, driver sequences, etc., and it still had the problem where the system would freeze at random times until the disk was ejected. I talked to two people in technical support, and they were not able to solve the problem. I called Trantor Systems Ltd. customer service, and they gave me an RMA number so that I could return the upgrade for a refund. I think that the problem is some kind of conflict with the Bernoulli adapter in my system even though the two boards were not using the same interrupts, DMA ports or I/O addresses. I don't want to discourage anyone else from trying this upgrade since it is much cheaper than the Media Visions upgrade, but I feel that I can not afford to spend any more time trying to get it to work. Now I need to decide if it is worth it to me to try the MV upgrade."

* * *

Back to the LL: There seem to be some conflicts between the bundled disks and various common TSR programs such as Sidekick, etc. If you're having difficulty with only a few disks, try stripping down your CONFIG and AUTOEXEC files onto a diskette with only the bare minimum necessary to run and enable the CDROM drive; boot that; and then try the suspect CD. If the problem disappears, normal detective work -- adding back the lines to those two files one at a time until the problem reappears or changing the order of commands in the files -- may lead to a solution. Terminate and stay-resident programs (TSR's) are frequently the culprits.

There is no adequate Sony documentation of the critical software parameters, or any hints and tricks to load files high (under DOS 5.0 with 386 or above platform), for SONY_CDU.SYS and MSCDEX.EXE, the two principal files required to manage the drive.

Sony Tech Support (201) 368-3774 on the east coast -- the old west coast (714) number has been closed and a referral is given to the (201) number -- doesn't know anything about the LL and now refers people to (408) 955-4343 where a recorder answers. That should give you some idea of what you're in for! They may be able to help with some problems, but they will primarily provide support for the hardware and installation-related software. Software support for the application disks supplied in the bundle is via a (900) phone number, (900) 884-1104, at $2 per minute; the documentation supplied with the disks is some of the worst I've seen. Comments here in the Forum have been mixed about the quality of both, but it leans to the negative kinda strongly. A report from J. Allan Cahill had mentioned being subjected to a five-minute, intrusive questionnaire before just being referred to a Sony dealer for info on the best sound board to use with the LL.

Sony's Computer Peripheral Products, Optical Products Storage Division's CA office in San Jose, CA, (408) 432-0190, may provide another avenue for help or a place to holler. Also (408) 944-4326 and (408) 944-4225 at various times. I've had good and bad experiences with all those. Greg Hill, is new but knowledgeable and is one of the few people in the tech support group that I've talked to who seems interested and eager. He can be reached at the main (408) 432-0190 number. Literature on the LL and some other Sony products is

supposed to be available from (800) 222-0878, but two requests brought nothing to my mailbox; I'm tryin' a third time but am not holding my breath.

Tracking down dealers from any of these sources, or their distributors, had been almost impossible through Sony: Most of the referrals were to dealers for other lines or to dealers that did not stock the product or were at the high end of the product spectrum. Here in Silicon Valley, that's a crime. A recent, 12/93, call to the (800) number above got me a quick referral to a stocking dealer, so maybe that's improving. For info, the LL can be found at deep discount hereabouts for about $499. There are other Sony drives, many of which are MPC compliant; and some of which are bundled with alternative CDROM titles by third parties at considerably reduced prices.

A recent addition to the Forum, Rory Sellers (72110,3111), works for Sony and has volunteered to help with some questions and problems, mostly DOS and Windows-related. He disclaims any PS/2 hardware background, I understand.

In desperation, if you have not succeeded in getting anything to work, remove all your add-in boards, especially fax, modem, and others that use IRQ or DMA, that aren't absolutely necessary to get your system running. If that clears up the problem, you have some serious conflict-hunting to do. It sounds more daunting than it is; just use care in labelling your cables and note where the boards came from. Funny thing, you'll have to leave your disk drive controller board, video board, CDROM controller and possibly a memory expansion board; but nuke the rest while troubleshooting if they're not vital.

THE SOFTWARE:

SONY_CDU.SYS is the device driver necessary to operate the drive. You should have the most recent version, 2.20(a), which is dated 6/11/91 and is 9,216 bytes. I've also seen a version on the Sun Moon Star BBS, mentioned below, that's dated 6/19/91 and which is 9,145 bytes, but I haven't tested it; I've also heard of a version (from Rich Bowers, I think) dated 1/10/91, 8,993 bytes but haven't seen a copy. A statement must be present in your CONFIG.SYS file enabling this device driver. Other CDROM drive brands will have different file names but will require a similar proprietary driver. Carlyle Maw ran across an older version of SONY_CDU.SYS (8,993 bytes, dated 1/10/91) that ran on his Zenith 386-25, when the newer one wouldn't.

MSCDEX.EXE is the file containing the Microsoft CDROM Extensions, also necessary; this file written by Microsoft is used in virtually every CDROM installation, no matter who made the drive. It assigns the drive a drive number and tell DOS how to access the drive as though it were a conventional disk drive. The version distributed with the LL has been 2.20, dated 6/16/91 and is 25,600 bytes in size. This file and its code do not change from one brand of drive to another, and a statement must be present in your AUTOEXEC.BAT file enabling MSCDEX. There are slipstreamed versions of version 2.20, i.e. revisions have occurred; the file was modified; but the version number was not changed. I've seen three slightly different versions of 2.20. If you're upgrading from version 1.x of MSCDEX, check with the manufacturer of your drive; you probably will need an updated device driver to use MSCDEX version 2.x.

There is a later version of MSCDEX, version 2.21, that I (and Microsoft and

most manufacturers of CDROM's) highly recommend. It does not require the use of DOS's SETVER command in your Config, as the earlier one does (but some of your other programs may need SETVER!). This file is 25,431 bytes and is dated 7/23/91. This newer version seems to load high easier, and I have only heard one complaint here about it, out of hundreds of users. MS says, however, that they know of problems loading any version of MSCDEX high and will not support it in that mode. Their voice support line for CD and Multimedia Support Group is (206) 454-2030. Most manufacturers are now distributing version 2.21. MSCDEX.EXE is available on CompuServe (Go MSL, file CDEXT.EXE, a self-extracting file) and is 25,431 bytes long and dated 2/4/92 OR 7/23/91. There was a defective version of MSCDEX v2.21 being distributed by MS, including here on CIS, that was withdrawn and was indistinguishable from v2.21 that works, so don't nuke your current copy of MSCDEX until you're happy with the way v2.21 works.

The version numbers of MSCDEX and SONY_CDU are reported to your screen when the respective files load, but you may have to read quickly or put a temporary PAUSE statement in your AUTOEXEC immediately after the MSCDEX call to catch it before it flies by.

MS has legitimized MSCDEX v2.21 and now strongly suggests its use with Windows 3.1, but Dave Manzari reports that the Windows README.WRI file says you should remove the LANMAN... DEVICE statement, as below.

J. Fortney and J. Chwan noted that MSCDEX 2.21 ships with Windows 3.1 and the setup program will automatically load the driver (beware that you don't lose your copy of a functioning MSCDEX!); it also loaded high with QEMM 6.02. I didn't find it in my upgrade disks; three other denizens of our Forum have not been able to find this v2.21 in their W3.1 material. Paul Hixson found a mention of need for 2.21 in the W3.1 READ.ME file supplied with his upgrade kit.

And to further confound you Windows fans, Dave Manzari noted that the README.WRI file found in W3.1 strongly suggests the use of MSCDEX.EXE v2.21 and shows a patch to your SYSTEM.INI file that may be required to get it to run.

The latest SONY_CDU, but a 9,145 byte version I haven't tested, plus MSCDEX version 2.21, is available from the Sun-Moon-Star BBS at (408) 452-8281; the filename is SONY.ZIP.

Duncan Kruse found the Sony 2.20(a) driver, plus MSCDEX *v2.20*, on the Phillips BBS (310) 532-6436 in file SONY220A.EXE. Tough to get on that board, he says.

Steve Williams ran into the only problem I've heard reported with old v2.21, an error message, "CDR103: CDROM not High Sierra or ISO-9660 Format". He'd just added a new copy of old v2.21 on a working system and suddenly got the error. When he copied v2.20 back into the directory, the system worked fine again. One out of hundreds isn't bad; but rename your old v2.20 before copying the new one into your directory and overwriting the old version irrevocably. Steve subsequently reported that he was able to load v2.21 successfully by changing the loading order in his AUTOEXEC but then had problems getting Windows to run properly.

Steve Solomon tipped us that v2.21 is available on Creative Lab's BBS at 408-428-6660 (all speeds) or 408-428-6662 & -64 (9600 bps only); it's got a newer date but compares identically to the 7/23/91 one I have. It's one of the few on-line, gratis sources I know of. Frequently busy on the main number. It's in Library #8; the file name is MSCD221.ZIP. Navigation and sloooooow prompts (I've waited as long as 30 seconds or more for a prompt and thought I'd locked up my system) on this board are a challenge. But worth what you paid for it!

MSCDEX is also available gratis (and with hairy license and indemnity stuff, as is the case here on CIS) directly from Microsoft's BBS at (206) 936-6735. Hey, use it; it may be the only freebie you'll ever get from Bill Gates.

There is a reported hack to v2.20 if you have a disassembler, like Norton's DISKEDIT to get it to run without SETVER, but we've had enough public debate over the Street Atlas hack of late, so I'm not going to post it here.

Matt Seitz said that his firm, Meridian Data, in CA at 800-76SALES (800-767-2537) or 408-438-3100, sells MSCDEX; they recently received v2.21 and have it available. Matt also has available, I'm told, thru CD-Net a version of MSCDEX called CDNETEX which is loadable/unloadable (unlike MSCDEX).

Matt also supplied some valuable info on technical MSCDEX material for the seriously code-inclined amongst you: 1) The book MS-DOS EXTENSIONS by Ray Duncan (Microsoft Press, ISBN #1-55615-212-4) contains the MSCDEX functions but not the device driver functions; 2) The book MS-DOS PROGRAMMER'S SOURCEBOOK (ibid) also contains the MSCDEX functions but not the device driver calls; 3) The book DOS INTERRUPTS by Ralf Brown and Jim Kyle (Addison-Wesley, ISBN #0-201-57797-6) contains the same as those above, but it also has MSCDEX 2.1 version of the Get Directory Entry call, which allows you to use the same data structure for both ISO-9660 and High Sierra volume formats; and 4) the MSCDEX Dev. Kit description, a text file in MS Forum on CIS and from Meridian's BBS at (408) 439-9509. This contains the MSCDEX functions and device driver functions. I hope, someday, I'm smart enough to understand what all that means!

Edward Mainzer reports that the NEC BBS, (508) 635-6328, includes a CDROM conference that has MSCDEX, version unknown, and other files, including a demo of a music player software title, available in a file named CD_T128.EXE.

If you have a penchant for some technical info, you can check file DR0498.ZIP in the MS Software Library (GO MSL), but it's not for the non-technical.

I understand, thanks to some dialogue between Jim Duke and Steve McKnelly, that some applications actually look for the presence of MSCDEX and will not load without it. If you have a system (OS/2, non-DOS or a network?) that can't use MSCDEX, Jim (70414,1653) has developed MDICDEXT -- I think it's a part of SCSI Express for NetWare 386 -- which satisfies the need, without MSCDEX, for most, but not all, such apps.

There had been considerable speculation, for the Windows-reliant among you, that Windows 3.1 does not require MSCDEX. It does. Clarke Ferber, who has a beta release of Windows NT that is scheduled for release early in 1993, reports that NT does not require MSCDEX, but you will need a supported SCSI-2 CDROM and controller. The CDROM just appears as another drive letter

available for use. NT does not, at this time, support non-SCSI CDROM's and
it does need SCSI-2 for audio support. Check the WINNT forum, Library #1 for
a file similar to 09HW.TXT for a list of supported hardware for NT -- if you
live to plan in advance.

CAUTION: On April 12th Craig Frank reported a complete crash of his hard
disk that he attributes to the LL installation software not being Windows
3.1-aware. In the process, LL didn't create the LL Program Group, although
it does say that if you have 3.0 installed, it will detect and set up the
program appropriately. I guess if it's gonna tank your whole system, it's
sorta academic whether it sets up the Program Group... Sorry, Craig!

Several others have reported problems trying to install LL with W3.1, and
Sony says there WAS a compatibility problem with the installation routine and
that they were working with Microsoft to resolve it. Bill Seymour checked in
to tell us that Sony now has a fix available; they will send it to you
gratis, apparently on a CD, so call their customer support phone number.
Apparently the old install program in LL nukes an icon file, LASERLIB.IL, and
the icon isn't available so it can't setup the program group. If you recopy
that file from Windows disk #6 to its proper place and know how to manually
add a program group and do other installation routines, it will run. For
someone who knows his stuff on this problem, you might want to contact Greg
Hill, above.

Craig Frank reported -- "after much heartbreak and no help from Sony..." --
that the only way he found to get W3.1 happening was to delete 3.1 from his
disk completely. He reloaded 3.0 and installed LL, which successfully
installed the program group and icons; and then he reloaded 3.1, which
retained the 3.0 program group. A lot of work, but it did the job. I knew I
didn't like Windows!

Carl Nelson found what may be a less painful way of doing it. He browsed
thru the LLINSTAL.EXE file and found a list of Windows files, which he
presumed were being used to validate the presence of Windows (3.0) on his
hard disk. He found that one of these files, SYSTEM\KERNEL.EXE, no longer
exists in W3.1; it has been replaced by KRNL1286.EXE and KRNL1386.EXE. He
created a dummy replacement SYSTEM\KERNEL.EXE file, reran the LLINSTAL
program, and everything functioned perfectly. Congrats, Carl!

A quick tutorial on how to create the dummy file in Windows 3.1 that Carl
used follows, but DO NOT use this method under W3.0, or you will erase your
existing KERNEL.EXE... and feel incredibly stupid and probably never get
Windows 3.0 to run again:

    At a DOS prompt, type COPY CON C:\WINDOWS\SYSTEM\KERNEL.EXE and
    press return. The cursor will advance to the next line with no
    other discernable activity. Type any letter you choose on that
    line and press return. The cursor will advance to the next line.
    Press the F6 key, and a "^Z" will appear; then press return.
    You'll see the message "1 file(s) copied", and you're done!

Even tho' I swore I wouldn't turn this tome into a Windows tutorial, I guess
I should also mention that MS (GO MSKB, Doc #Q82419, 4/16/92) says that in
W3.1 LANMAN10.386 is always installed, even if you're using a version of
MSCDEX greater than 2.1. You should remove the DEVICE=LANMAN10.386 from

386Enh section of SYSTEM.INI if you're using MSCDEX 2.2x. One less source of conflict and memory-mushing gone!

Likewise, MS also recommends that MSCDEX should not be loaded from the Windows DOS prompt, unless you're very careful. Apparently, folks are accidently loading multiple copies of MSCDEX on top of each other with less-than-productive results. Install MSCDEX in your AUTOEXEC file, before starting Windows. They still maintain that MSCDEX can't/shouldn't be loaded high, but we know that's usually googrum.

A lot of the messages here have centered around "What are all those switches in SONY_CDU and MSCDEX" and "Why can't I get those @#$%$#! files to load high?" Sony says, officially, that these files cannot be loaded high. Microsoft says MSCDEX *cannot* be loaded high because of some code in it that only acknowledges up to 640K; they're "looking into it" per an 11/91 mention in MSKB on CIS. They told me in early March '92 that they have no current plans to update MSCDEX. End of discussion from them, 'cept for the mention in the paragraph above. Real world: You can do it. It will either be ridiculously easy, or you will be up half the night cussing. If you have inexplicable problems that are not TSR conflicts, you can always reload it low and see if the problems evaporate, but there have been no reports of such problems here. Several people have reported complete failure in trying to load any version of MSCDEX high, however. Many of the easiest successes have been reported by users of QEMM, a memory manager program in widespread use, in lieu of using DOS' EMM386. FWIW, Qemm was a catastrophe for me; it choked on almost everything and obliterated parts of my AUTOEXEC. But, judging from the many very satisfied customers, I'm a distinct minority in that regard.

Addressing the question of loading high first, both these files can carry some pretty significant RAM overhead if loaded into conventional memory, 15K and up for MSCDEX and 8K for SONY_CDU. If you want your CDROM to play pretty music while you pound on your wordprocessor -- as I do -- making it the world's most expensive CD player, the LLTSR program, which lets you play audio CD's, gobbles another 27K of precious conventional memory. If you can't get some of this overhead into Upper Memory Blocks (UMB), you may find yourself restricted to running programs written in 1983, when 64K of RAM was heavy-duty computing. [If you want to cut down the memory requirements for LLTSR, AND if you're NOT going to use Sony's LLPLAY, download HCDPLAY.ZIP from the Sun Moon Star BBS above. It's a Hitachi CD player that seems to work fine with the LL.] Note that many reported problems with getting MSCDEX to load high may be caused by its propensity to want use as much as 65K of upper memory when loading (and oodles more if you've increased the buffers and aren't using the /E switch), which scales way back when it's actually running. One user reported 128K was needed on his system.

John Miriello, a glutton for punishment if ever there was one, has tried loading the drivers high on both 386/25 & 486/33 platforms, using DOS 5.0, 386MAX 6.0, and QEMM 6.0, and thinks 386MAX was the easiest.

OS/2:

Ah, a late-comer to the CDROM wars! Not too much traffic on the Forum yet that I begin to understand, but Frank Zirpolo did check in with the

information that there has been debate and support on the IBM OS/2 Forum and that MSCDEX may not work under OS/2 (he says IBM says it won't); he suggests getting OS/2 drivers (if available!?!) for your drive so you won't have to use MSCDEX at all.

Bill McHugh responds that OS/2 does not use MSCDEX; it is replaced by an installable file system. His advice that follows is for an NEC drive. Put the following line in your CONFIG for OS/2: IFS=C:\OS2\CDFS.IFS /Q. If there is another IFS= line, do not remove it, just add the above. He also mentioned that the built-in driver only covers IBM and Toshiba drives, so you will need to add that to CONFIG. The built-in device is DEVICE=C:\OS2\CDROM.SYS /I /N:4.

CONFIG.SYS:

A reminder: Please have a bootable DOS diskette handy before you start twiddling with CONFIG.SYS.

DEVICE #1 -- To begin with, there are some basics to getting your 386 or above beast to load these files high. In your CONFIG file the *very* first DEVICE statement should be DEVICE=C:\dos\himem.sys (or use the Drive:\Path appropriate to your system, here and elsewhere below). [N.B.: If you have a proprietary driver of some kind that you must use to enable extended or expanded memory on your system, you should load that as the very first driver.] I've also found that SET, FILES, BUFFERS, BREAK, and a few other commands can precede the HIMEM statement, if necessary. Use the HIMEM.SYS file that came with DOS 5.0 (unless you're using Windows 3.1, then use it's version of HIMEM)! Mine is dated 4/9/91 and is 11,552 bytes. Some previous versions of this file were supplied with applications, including Windows, and might be lurking on your systems; they are probably not compatible with loading files high. DOS 5.0's manual specifically says NOT to use the HIMEM that comes with Windows 3.0. In my file, the only lines that precede the above DEVICE statement are FILES, BUFFERS, STACKS, and BREAK commands. I used a /int15=1088 switch on HIMEM to allocate some extended memory in a strange way, but it's not critical to making the Sony files behave.

DEVICE #2 -- The very next line after the HIMEM line should be the DEVICE statement for EMM386, DOS's memory manager. My line originally read DEVICE=C:\dos\emm386.exe 1024 /I=E000-EFFF ram. This allocates 1,024K to expanded memory (the 1024 parameter), and the /I parameter reenables the E segment of memory and provides about 64K more UMB space (Bless you, PC Computing Magazine, for that one!). That particular /I parameter is not appropriate to an IBM PS/2 Microchannel machine. Incidently, PC Mag, in its 2/11/92 edition dealing with memory managers, says that switch should be /I=e000-f7ff, but is discussing a DOS 5.0 file EMS386.SYS, which I've never seen; I think they may have a typo working. You may also be able to add additional /I parameters to that command line; I also have /I=B000-B7FF in mine for another 32K of UMB, but that may be a system-by-system determination. Windows 3.1 will not boot with /I=Bxxx.... Using a good memory manager will help identify areas of unused upper memory; Manifest and ASQ work well. If you have Windows 3.1, there is a good tool, MSD.EXE, that is undocumented that is located in your Windows directory on your hard disk that will also do the job (it erroneously some free RAM in my A & B segments that wasn't there, but it's free and you can always experiment a little).

The "ram" parameter must be specified to access UMB *and* expanded memory. If you don't use/want any expanded memory (caution!), substitute "noems" instead, without the quotation marks, and access to the UMB's is still provided. Without one of those last two parameters, not much is heading high. However, please note that MSCDEX, covered in the AUTOEXEC section below, will LOADHIGH easier on most systems if the /E switch is used; expanded memory can also be used by its buffers, so you may want to have some handy, otherwise you will pay a heavy RAM penalty.

You can also twiddle with the /M switch on EMM386.EXE to change the location of the EMS page frame to provide more contiguous UMB space for loading larger programs like MSCDEX. Mine now reads DEVICE=C:\dos\emm386.exe 1536 FRAME=E000 /I=B000-B7FF ram. Remember to have a bootable DOS diskette handy, just in case.

Bernie Bildman reports that by inserting the statement DEVICE=emm386.exe ram i=e000-efff i=b000-b7ff x=d800-d9ff he was able to load MSCDEX 2.2x high and return over 110K of RAM for use elsewhere. He was, however using an NEC CDR82 drive and the x= portion of the statement he says is relevant to that drive only. I haven't tested all this yet, nor do I know enough about memory allocation to be able to discern any problems; but the i=B... portion recovered an additional 29.3K+ of UMB for me, at the expense of about 30K of expanded memory. I do understand, though, that if you have a VGA board connected to a color monitor, you should exercise care in allocating away much of the A or B memory segments as above as they are normally used for VGA buffers.

Speaking of which -- nice segue? -- PC Computing published (7/92 issue) a mini-guide on memory tricks to maximize UMB's, among other things. In addition to (I)ncluding the E segment above, except PS/2's, they also provided other clues: Diddle with the FRAME=E000 switch to EMM386 to try locating the page frame for expanded memory in the E segment; If you're using an EGA board with a color monitor, you can "I" the B=000-B7FF segment to provide 32K more UMB's; for EGA board with monochrome monitor also add B800-BFFF; and for Hercules, CGA and mono display adapters they had even more segments to include.

If you want an additional resource for scavenging additional memory for UMB via the switches for EMM386.EXE, I enthusiastically recommend the brief, how-to, article on page 445 of the 11/10/92 issue of PC Magazine. Likewise, the 11/92 issue of PC World has a short piece on page 258 that provides a basic introduction to memory management and some simpler explanations of the use of EMM386.EXE. The memory examination features of Manifest (often bundled with QEMM), ASK (Qualitas) or MSD (supplied with Windows 3.1 but undocumented) will be very helpful to avoid trial and error twiddling with memory, but note that I got slightly different results from each one.

DOS -- Next, you need the CONFIG statement that loads DOS high and enables the Upper Memory Area: DOS=HIGH,UMB. The order of the three previous lines is important.

LASTDRIVE= -- Sony's installation process has probably put a LASTDRIVE=Z statement in your CONFIG file somewhere. Get rid of it! It may be mislocated, and the statement wastes RAM by allocating RAM for drives all the way to #Z -- 88 bytes for every drive assignment you don't need. Rather than

test my system for compatibility with the complete absence of a LASTDRIVE
statement, I inserted a LASTDRIVE=E statement immediately after the DOS line
above. The actual letter used should be one higher than the letter of your
highest drive letter (that should be DOS's default, but belt and suspenders
won out at 4am one morning). Don't forget about RAM drives and/or network
drives you may have. On my system, I have a C: hard disk; the CDROM is D:,
hence LASTDRIVE=E. Remember the extra Stacker drive as noted at the
beginning of this file, if you use that program. If you add an additional
hard disk, repartition an existing one and add partitions, or add disk
capacity increasing software, such as Stacker, that adds an additional
partition, and you'll have to reset LASTDRIVE (and the CD drive assignment!)
accordingly. I've also heard that some DAK CDROM's assign themselves as
drive S: during installation, so you may need to examine that situation if
you have a DAK drive and reset the drive letter if possible as below.

SHELL -- Here, I inserted my SHELL statement, SHELL=C:\dos\command.com
c:\dos\ /p /e:1024 /f (the /f switch is an undocumented DOS switch to select
"Fail" when you access a floppy drive that doesn't have a diskette in it.
Thanks, PC Magazine). Yours may vary, of course.

DEVICEHIGH #1 -- Laser Library time, finally.
DEVICEHIGH=C:\laserlib\sony_cdu.sys /D:SONY_001 /B:340 /Q:* /T:* /M:H does it
for me. Most comments suggest that these defaults, or the one the install
program generates for you, are OK. Explanations of the switches follow, to
the extent I've seen discussion of them. Special thanks to Scott Welliver
for filling in several blanks:

/D:device_name Switch: The /D: switch provides a name for the drive. This
                          name *must* be the same as used in MSCDEX's /D:
                          switch, covered below in the AUTOEXEC section,
                          otherwise the two files will not cooperate. Sony's
                          default was SONY_001 for me. Someone mentioned
                          that these two /D: switches are case-sensitive;
                          they are not case-sensitive on my PC.

/U:n Switch: There is a /U:n switch in which the n=number of CDROM drives.
                The default is n=1, so your installation may not provide it
                at all.

/B:nnn Switch: The /B: Switch is the I/O address or base address of the
                CDROM host adaptor. Default is nnn=340.

/M:n Switch: The transfer mode, where n=D for DMA; P for software; H for
                High speed software. Default is P for PC/XT and H for PC/AT.

/T:n Switch: The channel number of the CDROM host adapter, which only
                works with /M:D. The default drq is /T:* in which the "*"
                indicates not to use DMA requests.

/Q:n Switch: The IRQ channel number of CDROM host adapter. The default is
                /Q:* in which the "*" indicates not to use the interrupt.

The order of the switches was reported to be important, but Sony's install
routine did not follow the above order in my case, so I'm not sure if order
is important or if the above-listed order is correct.

Mary Kelbell found that if she did not DEVICEHIGH the driver in her CONFIG file, then MSCDEX, which is substantially larger, LOADHIGH'd easier in her AUTOEXEC.

DEVICEHIGH #2 -- Following the SONY_CDU statement, I inserted DEVICEHIGH's for my video driver, SETVER (Yes, I know I don't need it for MSCDEX v2.21, but I have one other troublemaking program that needs it.), and mouse. (Please see note below on LLTSR.EXE for additional comments on these device drivers.)

DEVICEHIGH #2+ -- If you elected not to use MSCDEX version 2.21, you will need a DEVICEHIGH=C:\dos\setver.exe statement in CONFIG to permit MSCDEX to load in your AUTOEXEC later. Absence of SETVER will produce the now-famous "Incorrect DOS Version" error message when AUTOEXEC tries to load MSCDEX. (Please see note below on LLTSR.EXE for additional comments on these device drivers.)

These additional device drivers should usually be loaded in decreasing order of size, per MS's instructions, but you may have difficulty or conflicts. Try adding one at a time where possible, check with MEM/C|MORE often and read MS DOS 5.0 manual carefully, especially the sections on DEVICEHIGH, Customizing your system, Optimizing your system, etc. I know that violates the first rule of computing, "Never read the manual," but... Loading devices and programs high is an art and just changing the order of them makes a big difference!

AUTOEXEC.BAT:

Again, a reminder: Please have a bootable DOS diskette handy before you start twiddling with AUTOEXEC.BAT.

Aside from providing some alterations to my environment with the SET command, I launched right into a PATH statement in my AUTOEXEC. The PATH must include C:\laserlib. A typical PATH might read as follows:
PATH=C:\;C:\dos;C:\laserlib

LOADHIGH #1 -- This line is the critical one.
Mine is LOADHIGH C:\laserlib\mscdex.exe /D:SONY_001 /L:D /M:8 /E /V.

A discussion of the switches for MSCDEX follows:

/D: Switch: This provides the name of the drive as above for SONY_CDU. It is imperative that the two /D: switches in MSCDEX and SONY_CDU use *exactly* the same name.

Matt Seitz reports that MSCDEX will recognize multiple device drivers. Just add multiple /D: switches to MSCDEX, e.g. MSCDEX /D:device_name1 /D:device_name2 that conform to the device drivers /D: switches loaded in your CONFIG.

/L: Switch: This is the drive letter assigned to the CDROM drive. If you've setup a RAM disk, remember that its driver will load before MSCDEX and grab your next available drive letter. So

if you have a C: hard disk and enable a single RAM drive, the RAM drive will become D:. The CDROM will then have to be E:. The same principle applies if you have network or other device drivers present. The LL seems to be at least a little tolerant of boo-boos with the drive letter variable. As above, under LASTDRIVE, you must reset this switch if you add drives, increase the number of partitions or use a program such as Stacker after installing your CDROM.

/M: Switch: This switch specifies how much memory should be used as buffers for caching CD data. Installation procedure for the LL sets up 8; if the /M: switch is not specified, PC World says the MSCDEX default is 10. You can reserve /M:xx, where xx=number of sectors (1 sector = about 2K, so BEP says, for this). The /E switch below enables expanded memory for these; it's use is recommended since, otherwise, the default of 8 can require a significant amount of conventional or UMB memory (thanks, Jack!), while the driver alone lurks in high memory at about 15K. The total of these may exceed your high memory total, causing MSCDEX not to load high. You should also consider the use of a disk caching program with the use of a reasonable amount of memory for additional buffering capacity, especially one that can utilize extended or expanded memory.

/E Switch: See discussion for /M: Switch. If you have EMS or can provide it, its use is *highly* recommended, especially if you want to load drivers high. Don't forget to enable EMS in EMM386.EXE, covered above.

Lack of the /E switch, and the lack of -- or incorrect configuration of -- expanded memory it presumes you have, are the largest single causes of failure to load MSCDEX high.

/K Switch: Use of the /K Switch enables the use of the Kanji (Japanese) file structure if it is programmed into the CD you have in your drive.

/S Switch: Per BEP, this switch is used to patch DOS on MS-NET based networks to let the CDROM drive be shared by other nodes. Matt also reported, more clearly I hope to those of you that are network aware, that the /S Switch (Server) instructs MSCDEX to make the CDROM appear to networks as a local drive, rather than another network drive; you should then be able to share the CDROM drive using NET SHARE or the net menu. See also the info from Matt Seitz about a network-aware version of MSCDEX.

/V Switch: This switch displays some additional (Verbose) information when the file loads. It may include the total initial loading size of MSCDEX when loading it high. You will probably need to insert a temporary PAUSE in your AUTOEXEC immediately after the MSCDEX call so you can read it. Delete the PAUSE once the system is humming.

The order, above, of the switches may be important, but I have not tested the /K or /S switches.

If you are using a fast (33MHz+) system and are having problems with LOADHIGH for MSCDEX, try the poor-man's fix: Insert a PAUSE in the AUTOEXEC line just before calling MSCDEX. I almost kissed Rick Filisky for that one! When I later rearranged my LOADHIGH's, the need for it went away somehow.

After a successful load of MSCDEX, add additional AUTOEXEC lines as necessary, starting with all other LOADHIGH lines. Per MS, try descending order of size, one at a time, checking with MEM/C|MORE each time. Note that some files, even though there appears to be sufficient UMB available will balk. Sidekick would not load high at all until I put 4 other dinky TSR's in front of it. Work hard on the order and expect some odd surprises, e.g. my ancient Logitech mouse driver not only wouldn't load in UMB, but it wouldn't run at all with any programs in UMB. I ended up further enriching Bill Gates to get a new mouse driver for an old MS mouse I had gathering dust. Then it turned out that two programs wouldn't recognize Bill's latest mouse driver, 8.15, so I had to revert to 7.0. It's tedious, but it works.

Again, if you should encounter an "Incorrect DOS Version" error message when loading MSCDEX v2.20 or earlier in your AUTOEXEC file, be sure you have correctly invoked SETVER in your CONFIG file. If the message persists, change to the directory containing SETVER.EXE (probably where all your DOS 5.0 files are lurking) and enter the command SETVER|MORE at the DOS prompt; there should be a statement that looks like, MSCDEX.EXE 4.00 on the list that displays. If not, type SETVER MSCDEX.EXE 4.00 That will update your SETVER table to report to MSCDEX that it is running under DOS 4.0. Check it again with SETVER|MORE.

After all the LOADHIGH's, finish up with whatever additional instructions, TSR's, etc. you need or want in conventional memory.

Oh, if you want to play background music with LLTSR.EXE while crunching other data, I finally found the deep, dark secret (Thanks, Teddy!) to loading it high, at least on my system. Normally, when you try to load this high, you'll find that a small piece of it, only 0.1 - 0.5K, will go up; but the rest, about 27K, stays in conventional memory. Sony says LLTSR will not loadhigh, but that's what they said about SONY_CDU and MSCDEX too. Try clearing out CONFIG of all DEVICEHIGH statements, except SONY_CDU. Just reset them to DEVICE statements. I had been running an MS Mouse driver, a proprietary version of ANSI, and SETVER with DEVICEHIGH's and that was what prevented LLTSR from loading high in one configuration, at least. Since LLTSR is a whole lot bigger than the three others combined, it was an easy decision. I worked on that last 10K or so; and, in a later configuration, I was successful getting LLTSR to load high with devices also high; I suspect that LLTSR may require a larger amount of memory when loading that when running. One caveat: LLPLAY will not function on my system with LLTSR loaded high; LLTSR works fine, however. More gremlins to ferret out, time permitting.... Well, I finally got LLTSR to loadhigh with everything else, but I'll be damned if I know what finally did it!

Speaking of LLTSR, Len Bilello observed that it does not work with, uhgg, Windows; but he was able to get it to load high under QEMM. Please also see the note on the Hitachi CD player way above if you need to reduce use of RAM.

For those of true daring, Glen Chapman, 73517,2273, posted a message in late January '92 on the CDROM Forum with an EXPERIMENTAL way to tinker with MSCDEX, if you have EXMOD, a utility distributed with some compilers. It may let you adjust the loading/running size of MSCDEX. His message has probably scrolled into message never-never land by now, but he might be willing to discuss it with you directly.

Robert Hunter also reported that if MSCDEX is loaded more than once in a session, it increments the drive letter, e.g. if your CDROM was drive G:, it will become H:. On my system it can't be loaded more than once. That might be an idiosyncrasy of the system or the versions of MSCDEX we're using. Beware.

If you find that you have a variety of needs for differing CONFIG and AUTOEXEC statements for various applications, especially memory hogs, you might give serious consideration to MBOOT, a freeware utility graciously provided by PC Magazine and Douglas Boling (available in the library at PC MagNet, GO PCMAG. It takes some $$$ to get at it cuz it's part of Ziffnet now) that lets you boot with any of four different combinations of CONFIG & AUTOEXEC files, including one for OS/2 if you want. The documentation supplied with the utility -- and in a companion file, BOOT.INF -- is a little light, but if you download a copy of the original article from the 2/26/91 issue of PC Mag (GO COMPDB) or Xerox a copy at the library, things will be a *lot* clearer. It's a great tool.

CADDYS:

There've been lots of comments about caddys (caddies? Anyone know the proper version?), where to get them, and how much to pay. I've listed below some names and phone numbers and the prices I've heard here on the Forum, but they are obviously subject to change without notice or may be incomplete. Watch out for the shipping and handling charges! Some vendors charge the equivalent of several dollars per caddy for S&H, especially when their pricing is "each", rather than in lots of, say, ten. Also check MULTIMEDIA and MULTIVEN forums for additional sources and prices.

If you know of more recent or better info, please let me know.

Caddys are available in three styles (Thanks, Gary Nickell): Phillips, NEC CDR-77/80, and "everybody else" -- the most common -- which means Sony, Hitachi, Denon, Toshiba, new NEC, etc. Most of the info herein relates to the latter category. For identification purposes, courtesy of Jack Velte, the Sony-style caddy has a clear top and looks like a 3-1/2" diskette in a 5-1/4" package. It has a single metal shutter that slides back to expose the CD. The caddy opens by squeezing two tabs at one end; and the lid, hinged at the end closest to the end with the metal shutter, opens. The Phillips-style is clear smokey plastic; it opens by pressing two small tabs, but the CD rests in what looks like a large set of white plastic pinchers.

Bureau of Electronic Publishing, Parsippany, NJ, (800) 828-4766: $12.00 each, 5 for $50.00, plus $1.00/caddy S&H. When I was young and stupid and ordered some, my biggest disappointment was that they didn't come with labels. USA made, at least they were last year.

CD ROM, Inc., Golden, CO, (800) 821-5245 or (303) 231-9373 or Compuserve 72007,544: $6.00 each, no minimum per Phil Lyons. S&H $5.00 for an order of 10. They did well with an order for me. Japanese-made caddys, too -- with labels. See below for raves on their catalog.

Computerland, no phone number, caddys are part #CDTC-118606. List is $60 for 5 caddys; they sell them, per Dan McDonald, for $44, S&H unknown. Their source is CD Technology in Sunnyvale, CA, (408) 752-8500, but that may be a wholesaler.

DAK Industries, (800) 423-2866: $7.90 each, plus $3.00 _each_ S&H. Catalog #5853.

Educorp, (800) 843-9497: $5.50 each, 10 for $55.00 (ask for ten-pak price), plus about $4.00 S&H. Alternate reports of 10 for $59.00 and $55.00. Recommended by Nelson Ford.

Egghead Software in the Silicon Valley area finally has caddys and titles now -- wouldn't want to be ahead of the wave, right? -- but the caddys I saw were $12.99. Yes, each! Pretty bubble pack, though. Egg-citing... And the CDROM software was kinda steep too.

Fry's Electronics in Sunnyvale, CA carries the Sony branded caddys for those that live nearby in Silicon Valley, but they're $13.95 each... and have a nice day. I recently saw some unbranded ones there at the checkout for $9.95. Likewise, Access Computer Technology in Santa Clara stocks caddys at $16.00 each, but that really runs counter to my Scotch soul -- and is, arguably, the highest price in the country.

Marshall Industries, $88 for 10 caddies in 1/92, including S&H. Check Yellow Pages or Information; it's supposedly a national firm, per Dave Lindbergh.

MLNC, 800-264-3799, M-F 8-5 Central time. Normally $10 each, but $8 to CIS Forum. Check with Doug Tremere (70714,3234).

REX Computers, (800) 489-9172: $10 each. S&H unknown.

Sony: I'm sure that they sell their caddys; I fear the price would be a catastrophe, like Fry's, above, that sells the Sony caddy, and haven't asked.

Walnut Creek CDROM, (800) 786-9907 or (510) 947-5996, sells caddys for $4.95 in lots of 10 per Jack Velte. S&H are $5 per order. He also accepts orders on CIS at 72147,3425 (please use e-mail, not the forum message area).

Owen Mitz reported that he buys Sony-type caddys in lots of 10,000 and pays about $3.80 each for them wholesale. He very strongly recommends purchasing only Japanese-made caddys, as opposed to US-made ones, from Opticord, which sell for about $1.50 less (presumably at retail). He found that he had to replace most of the USofA caddys he purchased. He thinks that a $6.00 price is reasonable at retail, quantities of 10.

BUNDLED (and other) SOFTWARE THOUGHTS:

Robert also mentioned a "fix" for access time to bundled software, if you don't mind abandoning the LL front-end with its pretty windows, etc. Incorporate direct menu or batch file calls to the CDROM for each application. The LL and its bundled software scatter subdirectories all about your disk, e.g. C:\SIERRA for Mother Goose and C:\ATLAS for the atlas. Please note that you may, unless you write a prompt for CD insertion, face a horrible scrolling error message if you call a non-existent program from the CDROM drive (Ctrl-Break will kill it). Some specifics that he and others kindly supplied, assuming that your \LASERLIB is on C:...

ATLAS -- Move to C:\ATLAS and call WA, the Atlas-supplied batch file.

BOOKSHELF -- Call C:\LASERLIB\MSL. Rick LaBanca noted that there is a known bug with Bookshelf failing to load itself into Windows ("Fatal Error..." when running SETUP from Program Manager) if you're using MS Bookshelf with Windows 3.1; there is an update available free (Bill, are you slipping?) from MS.

COMPTON'S -- Call C:\CFE\CFE; but note that the CFE.BAT file calls PEDIA.EXE and needs to pass parameters, e.g. CFE [ROMDRIVE] [PEDIADRIVE], so he used CFE G: E:.

KING'S QUEST 5 -- Call C:\SIERRA\KQ5.BAT. If you have an early edition of this title and are using a Sound Source on a 486, it will not recognize the SS and will not load because of the high speed. There is a patch available from Sierra On-Line. Paul Hixson reported that the DOS version of KQ5 worked well under both Windows and DOS but the Windows version didn't work on his system under Windows 3.1.

MAMMALS -- Change to the CDROM drive (nothing special on your C: for it) by typing G:, or whatever your drive is, and then GO. Paul Zane Pilzer reported that Mammals has a known problem: If your PC is connected to a network, Netware Lite was mentioned, Mammals may not run, even if you're not trying to run the Mammals program itself on the network. There may be a patch for what Paul described as this IBM Linkway bug from Peter Schulz, 70216,174.

LANGUAGES -- Same as Mammals, except the call is LANGS. Remember that Languages of the World is a TSR program -- and a HUGE memory hog -- that, after being loaded, is invoked by pressing ALT-SHIFT. Thanks for that reminder, Bryan at DAK.

MIXED-UP MOTHER GOOSE -- Call C:\SIERRA\MGCD. Keith Myers left a note that, if you use this method - rather than accessing the disk thru the Laser Library menu system - you can better access all the languages and music thru your Soundblaster Pro. Ray Seely had problems with MG on a 486/33 until he slowed it down to 20MHz. Some Sony users report read-error problems with MUMG; Larry Schneider found out that there is a bug that you can fix with DEBUG. Call Sony at (408) 372-7141 for instructions on correcting the EXE file; they will also send you a corrected disk, I understand from Robin Smith.

PDR -- If you want to load PDR under Windows with the LL, Alan "Bones" says the following batch file must be run, including the strange repetitions:

    SET SONY_001=MSCD_001
    dir d: (assumes the CD is D:, I think)

```
c:
cd\
cd pdr
pdr
SET CDXDRIVER=SONY_001
SET SONY_001=MSCD_001
dir d:
c:
cd\
cd pdr
pdr
SET CDXDRIVER=SONY_001
```

SCIENTIFIC AMERICAN CONSULT: Alan also notes the odd way to get this program
to behave. Start it with the following batch file that came from hours with
the tech support gurus:

```
dir d:
set cdrom=SONY_001
SAM -CSONY_001
```

If you discover anything easier on the above two, Alan (73107,2440) would
LOVE to hear about it.

SHERLOCK HOLMES: John Hays reports that this program requires some heavy
resources to run, although he didn't specify what drive/platform he was
using. He suggests booting clean, with only CD and mouse drivers and adding
additional buffers to MSCDEX, preferably in expanded memory. ICOM support
recommends about the same thing, stressing getting rid of TSR's and drivers.

STELLAR7 -- Call C:\DYNAMIX\STELLAR7. This assumes you have followed the
INSTALL procedure on the CDROM; unfortunately, that's not in the manual but
is hidden inside the label in the jewel box the CD comes in.

MISCELLANEOUS -- Many fast 486 systems overwhelm audio or other drivers
supplied with software, especially when initializing, e.g. the initial
problems I had getting MSCDEX to loadhigh when just a PAUSE statement in
front of the command made it work. I also had problems with one of the early
copies of King's Quest V failing to recognize the presence of a Disney Sound
Source, just because the CPU wasn't waiting long enough to catch the response
from the device that it was prepared to receive output (So said Sierra; they
provided a patch very quickly). Check with your software vendors if you
experience a problem on just one or two titles and have already tried booting
with the minimum possible CONFIG & AUTOEXEC files; they may have already
fixed your problem.

If you'd like a good listing/review of CDROM titles, check Nelson Ford's
(71355,470) CDROM.EXE, a self-extracting archive file, available for download
in Lib #10 on this Forum. Titles therein can be ordered from his company,
PsL, at 800-242-4PsL, or you can leave a message for him here. Also check
out the CDROM, Inc. catalog (see above, under "Caddys"); it's the longest and
best listing of titles I've seen.

Jerry Isdale mentioned that a large, and expensive, listing of CDROM titles,
CDROM's In Print, is available from Meckler at 800-635-5537. About $95 on

CDROM and $65 on paper.

For the Silicon Valley crowd, both Fry's in Sunnyvale and CompUSA down the road have begun stocking CDROM titles in quantity (Have we finally mainstreamed?!?), and the prices aren't too bad. Fry's has most of them grouped together right near the front entrance, at the beginning of their IBM software section; their selection is growing. CompUSA has a section for CDROM only and has the capability to demo them, but nobody was around to confirm that. Both stores have most popular titles. Steve Katz mentioned that Walden's and the Electronic Boutique have CDROM titles also.

MPC disks that have been reported to run OK on the LL: Battle Chess, KQ5, Beethoven, Bookshelf, Sherlock Holmes.

MPC disks with compatibility problems reported (some may be speed or TSR conflicts!): Composer Quest

Please contribute if you have info to share!

Enjoy! Kevin Kelly -- 76650,351