Ottawa IBM-PC Users Group

BBS (613) 723-7064 Messages (613) 723-1329
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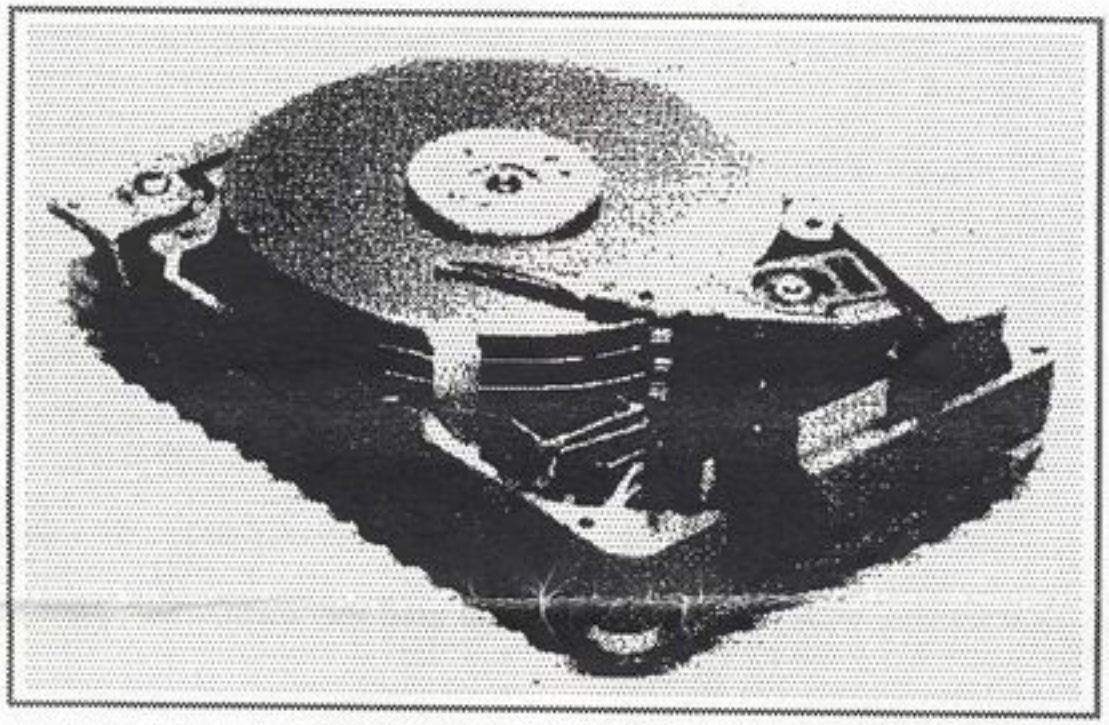
MEDIA MESSAGE

Competing technologies are forcing change upon us. We exist in a period of rapid growth in capacity of storage media. The spread of mass storage devices and systems is forcing us to change our work habits. We are handling more and more data and being forced to organise as a result.



Optical storage systems are here! Read/write optical systems are available for your AT if not your XT although prices are still high. Write Once Read Many systems are being touted as the ideal backup system for programming professionals and financial institutions. CD ROMs are commonly being used to distribute certain classes of data. All these systems store and access massive amounts of data. Anywhere from 200 Mb to 1000 Mb (1 Gb). All media is replaceable multiplying these huge storage capacities.

We have a CD ROM. Any one of our very small library of computer CD ROM disks has a capacity of 640 Mb. This converts to about 320,000 typical typewritten pages (average page being about 2k).

Our hard disk capacity has been growing rapidly with a mere 90 Mb on the system I'm using at the moment. In a period of about 6 years the PC community has graduated

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ARCHIVE VS. BACKUP

Hard disk users are heirs to many organisation problems which are not readily apparent. Some problems have been defeated traditionally by adding additional hard disk capacity. This is at best a stop-gap measure deferring rather than solving problems. Sooner or later we are forced to pay the piper. Perhaps when we deliberately erase a file that we later find we need desperately.

Some of these problems are caused because we seek all in one solutions. Others occur when similar solutions are identified as single solutions.

Consider your hard disk. Here are some of the problems we have with ours: not enough space, too many files and programs, critical data needs backup, backup re-

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MEDIA

from 160k floppy drives as a common storage device to a common 40Mb hard drive as a standard for 286 + systems (80 pages to 20,000). Magnetic media standards are expanding at rapid rates as well with 80mb to 150mb drives becoming cost effective. PC hard drives over 600Mb are readily available.

Floppy drives have expanded to the point where we must apply at least some management techniques to their data content. I used to be able to delude myself when I was using 360k diskettes that I only needed to backup critical accounting data and the like. At last count we had over 2000 360k floppy diskettes with something on them. We know what's on most of them, but there are some others where the label isn't clear or is faded. Would you know?

A floppy disk is a small investment of money and a relatively small investment in time compared to a hard disk. Through the years we have upgraded our hard disk capacity by 50% to 100% per upgrade. We have added additional systems and hard drives. Each time going through major efforts to rationalise what was on the system. However, each system always outgrows its capacity and rapidly becomes personalised not rationalised (they are PCs). Even in our small firm a level of organisation is required to make our storage systems work for us. Backups and archives are critical.

This issue is dedicated to storage issues because it is time to lay the foundation for the media you will be using tomorrow.

vAPOURWARE PLUS

Ashton-Tate has threatened Wordtech Corp. (a popular dBASE clone and compiler manufacturer) with a lawsuit for a non-existent, indeed non-contemplated product. According to Wordtech this represents the ultimate in vapourware. It is a non-existent product for a non-existent market with no marketing plan and with no future. The best news is that upgrades will be available at below nominal cost.

Optimizing Your Hard Disk Drive

by John Whelan

Typical disk drive specifications have an average seek time or an average access time of about 95 milliseconds for a floppy disk and between 28 and 80 milliseconds for a hard disk. Delve a little deeper. The average access time is normally calculated as the time taken to move the head half way across the disk (the average seek time) plus half the average latency (time taken for the disk to revolve once so that the bit of disk we are interested in is directly under the disk head, typically 6 milliseconds).

Different operating systems use different techniques for physically placing the file on a disk. MPE and HP3000 operating systems need to know the file size before they allocate any disk space, as do some of the IBM operating systems. They generally allow up to 32 extensions of the file. Vax VMS, Unix, and MS DOS simply allocate disk space as needed.

The advantage of pre-sizing files is more control with a theoretically higher throughput. The advantage of size as you go is that adding one more record does not require the system to unload the file, possibly reorganize the disk drive, reallocate the larger disk file, reload the data and restart the job. Many maintenance programmers who have been called out at night or over the weekend will attest to the higher throughput being theoretical.

Unix and MS DOS operating systems write the files as a series of clusters. Reading a file into memory consists of reading the FAT, to find the subdirectory, reading the subdirectory to find the address of the file, and then reading the file a cluster at a time.

Programs such as SST and PC Tools, help performance by trying to keep all the clusters belonging to a file together. The head doesn't have to move more than across from one track to the next to read the next cluster in the file. The track to track access time of a 65 millisecond hard disk is typically 20 milliseconds: Substantial gains can be made by defragmenting files.

Another useful technique is to partition the drive into a C: and a D: drive. Program files which are only read are placed on the D: drive and stay unfragmented. C: holds the data files. The smaller the number of subdirectories and files on a partition the faster a particular file can be found and loaded.

Both SST and PC Tools are vulnerable to power outages during disk reorganization when they can damage your files. Unloading the data (attrib +a *.* /s, xcopy *.* a: /m /s /v), reformatting and reloading is a safer way of reorganizing in this fashion.

To improve performance on mini computers and mainframes, try to organize their disk files in two ways. Firstly, place a file on the minimum number of cylinders where possible. Secondly place the directories or FAT equivalent near the centre of the disk surrounded by files in the order in which they are most frequently used. If you need to access five files to run a program, then group those five files closely together to minimize head movement. If you can totally eliminate track to track head movement you save even the reduced 20 millisecond track to track access time.

On a PC the easiest program I have seen used to produce this type of saving is FastTrax. It uses a program called Maketrax to group files into used very often, often, normal, and "did I last use this file about three years ago?". Keeping files on the minimum number of cylinders, noticeably improves access speed.

When I tested the product, I deliberately pulled the power cord out while it was reorganizing the disk. (I don't recommend you ever do this, by the way.) All the files were undamaged.

If you only need moderate performance then I recommend you unload the data, format, and restore. If you

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FLOPPY DISK'S WHO'S WHO

by Suzanne M. Blain

Have you ever had problems exchanging data from one computer to another, or even from one drive on your computer to the other? Take a look at the table below and read-on. I'll try to put things in perspective for you. It all boils down to who's who in the world of floppy disks!

5 1/4" diskettes/drives:

The 1.2Mb diskette has more than three times as many tracks in the same amount of space as the 360Kb diskette. To put all those tracks on the 1.2Mb disk, the drive head of the higher capacity 5 1/4" drive is narrower than that of the lower capacity drive. The higher capacity 5 1/4" drive formats, reads and writes three times as much in the same amount of space.

Dimension	Capacity	Tracks	Sectors
5 1/4"	360K	40	9
5 1/4"	1.2Mb	135	9
3 1/2"	720K	80	9
3 1/2"	1.44Mb	80	18

3 1/2" diskettes/drives:

The 1.44Mb diskette has twice as many sectors with the same number of tracks as the 720Kb diskette. To format the diskette to 1.44Mb, the drive head of the higher capacity 3 1/2" drive uses a higher intensity magnetic signal and writes twice as often to a track than the head on a lower capacity drive. The higher capacity 3 1/2" drive formats, reads and writes twice as much in the same amount of space.

So, what's the problem?

If you work in a computing environment where you need to exchange information (by diskette) between different computers with differing drive capacities, don't just worry about formatting the diskette to the required capacity. Consider what capacity drive does the formatting. If you don't keep track of it, you will probably, encounter mysterious situations where the drive you use will not be able to read the information on the diskette. Especially if the diskette is a recycled diskette.

WHY?

Since the high capacity 5 1/4" drive uses a smaller head, it "imprints" a narrow track on the diskette when you format a diskette. The diskette formatted on a 1.2Mb drive contains narrow tracks and a File Allocation Table written in a narrow track. Conversely, the low capacity 5 1/4" drive "imprints" a wide track. A diskette formatted on a 360Kb drive contains wide tracks and a File Allocation Table written in a wide track.

If you use a 1.2Mb drive to write to a 360Kb diskette formatted with a 360Kb drive, you have a narrow head writing information in a wide track. First, the drive updates the File Allocation Table on the 360Kb diskette Second, it saves the file. Writing to the 360Kb diskette with a narrow head puts the narrow data "on top of" the wide information that was originally on the diskette. Think of it as having upper case text printed on a sheet of paper and then, using the same sheet of paper, printing again but in lower case. The end result? You can't read it.

A 3 1/2" diskette formatted to 1.44Mb on a drive contains a higher intensity "imprint" of the required format than a low capacity 3 1/2" drive does. The drive writes with a higher intensity signal too. Some 720k drives will not sense that this diskette has been used in a 1.44 drive when the disk is reformatted nor that it's a high density disk. You are now overlaying a strong magnetic signal with a weak one. Garbage can be the result. A high density drive should always recognise low density diskettes but

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Tim's Tip

Cables and Connections

Did you know that faulty drive cables or connections cause 90% of hard drive problems? The drive cables aren't as tough as they look, in fact, they're quite fragile. If you experience hard drive problems, try these Tim Tips.

Power down and pull the plug. Open your computer and check the cable connections on the drive and on the controller card. Loose or corroded connectors prevent a good contact.

Push each connector to ensure a snug fit. The connectors are constructed in two halves, with the two crimped onto the cables. Their splitting apart breaks the connection with the cable. Take this opportunity to check that the connector halves are not splitting. Try gently pressing them together.

Now, remove the cables at the controller board and check for broken or bent pins on the board. Avoid wiggling the connector from side to side because this can easily bend the pins. Do your best to pull in a straight-out direction.

After checking the pins, continue to check the overall condition of the cable for breaks, sharp bends or pinches. The thin wires within the cable can break easily. If you suspect broken wires, replace the cables.

Since you have the computer open, clean the edge connector on the drive and on the drive controller board. Oxidation inhibits proper connection. You can clean the connector using a brand new Pink Pearl rubber eraser or a liquid contact cleaner and enhancer like STABILANT. If you use the Pink Pearl, remember two things: first, it must be none abrasive; second, make sure that it has not been used for pencil erasures because the graphite from pencil lead can cause shorting. Rub lightly. You do not want to wear off all the gold plating on the contacts!

I prefer to use the Stabilant because there is no friction involved and it accomplishes more. It lubricates,

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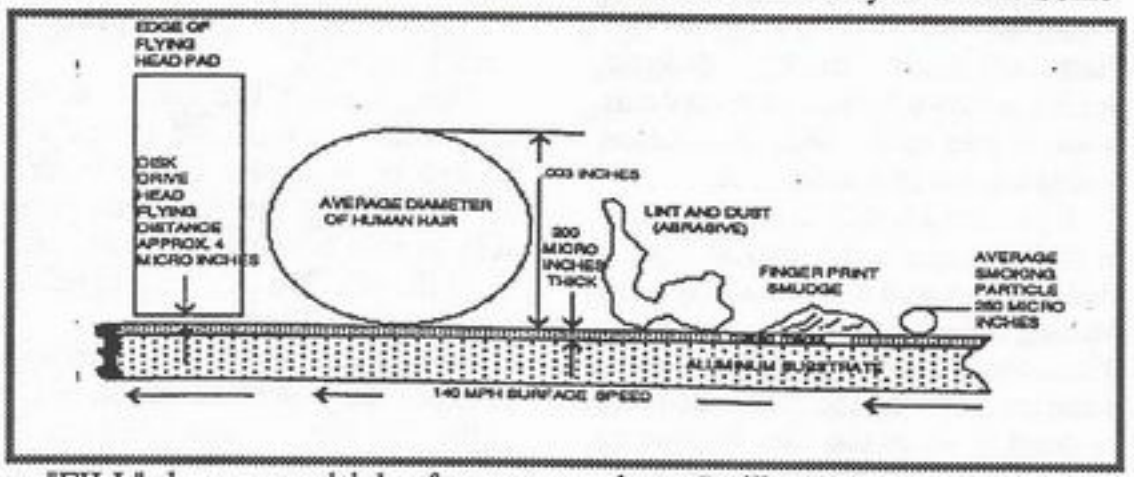
Back It Up

by John Whelan

Now and then I tell myself, I really must sort out how to back up my hard disk. Over the years, I've lost data from several disks. With the early versions of DOS, I'd format C: instead of A:. I'm getting better, but last week, a cable dropped off, and no drive C again! After a day of spells and incantations, I finally gave in and pulled all the connectors. When I reconnected them, my drive C, including data, was back. So was the incentive to back up my hard drive.

Several different methods exist, each with its own strengths and weaknesses. Each method discussed requires a supply of empty formatted diskettes.



"FILL" does a good job of completely filling a diskette with files, however I find I have to write the name of the subdirectory on the disk and recreate the subdirectories when restoring. It's difficult to include files from more than one subdirectory on a disk without getting the files mixed up. Complex directory structures become nightmarish. Programs that create tiers of subdirectories within subdirectories, each containing a few files create chaos compounded with confusion.

I like the way FILL puts large files on the diskette first and then fills up with the smaller ones. Group the smaller files together to reduce the number of diskettes. Otherwise backing up a large file (350k) followed by a small file (20k) will put the small file on a separate diskette. FILL doesn't allow incremental backups. If you keep your data in separate subdirectories you can back up only those subdirectories. It's simpler than backing up the entire hard disk!

DOS BACKUP and RESTORE do not impress me, probably because you cannot restore a backup made with a different version of DOS. Not idiot proofed enough for me.

PKPAK and PKZIP are fine, but I have to think when I use them. The archive has a set size limit depending on whether I back up onto 1.2 Mb diskettes or 360k diskettes. On a large complex subdirectory, choosing the files that fit within the archive limit of the diskette becomes tiresome after the first 8 Mbs of data. Also I'm still scribbling notes about which subdirectory is which! Sometimes, I will use PKPAK and PKZIP to tidy up a subdirectory before using FILL or XCOPY. I like the data compression, but dislike the extra work. Once again no incremental backup is provided.

Filling each diskette to the last byte isn't worth the effort these days: diskettes are cheaper and frequently recycled, therefore plentiful. Mini, mainframe and professional computer installations usually make two back up copies at once. If possible, I'd like a system that fills the diskettes up well, that allows two copies to be made by simply putting in the diskettes, and that performs incremental backups as well. I do not want to write down subdirectory names or set them up when restoring data.

DOS 3.3 has several useful features. The "/s" parameter for subdirectories turned ATTRIB and

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Archive vs. Backup

quired to reduce restore time in the event of failure and too many projects on the system.

Okay. Backup your hard disk and erase any files you don't need. You have just created more potential problems. If the next thing you do is a series of incremental backups, you may never be able to do a full restore, because your restoration can exceed your hard disk's capacity. An incremental backup is when you add files that are new or have changed to an existing backup.

Now, I need file yzx.wks that I have erased from the hard disk. Easy get it from the backup. Gee, do I have to go through all the disks to find it?

Fred tells me that in about two years they will require revisions to the programs I wrote. I better keep the original programs. Oh, they're not on the drive. Do I restore them or keep the backup for two years?

I do a fresh complete backup every month, recycling the oldest set of three months backups to do the new one. Did I back up Fred's files three months ago?

There are two totally different needs that can be identified. Archive needs and backup needs:

Archive needs encompass the removal of programs, files or data from your hard disk to temporary or permanent storage elsewhere.

Backup needs encompass the temporary duplication of programs, files and data to protect your investment from loss if your systems fail.

Until recently, backup software was admirably usable for backups and only moderately suitable for archive purposes. Recent changes have strengthened the software for archive purposes. We use Fastback Plus although there are many more reasonably priced products. We feel the speed, ease of use, compression and advanced file recovery algorithms make it ideal for us. We try to archive all pertinent items and remove them from the hard disk prior to backing up our systems. This helps with the potential problem of in-

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Archive vs. Backup

cremental backups exceeding capacity.

We use a grandfather, father, son three generation approach to full backups. Your initial backup is the son. It usually has some incremental backups, before it fathers the new generation son, which goes through the same process. At this point you have two generations: your first backup, which is now the father and your second backup, which is the new son. Only the son ever has incremental backups made for it. In turn, it will father a new son making its dad a grandfather. Grandfather's disks will be recycled to create your fourth generation son and so on.

Archive disks are only recycled when the need for that archive ceases to exist. This can be because the material has become dated or because it has been transferred back to the hard disk or elsewhere.

TIDBITS

Edited by Chris Taylor

TURNING ECHO OFF by your editor CT

In batch files, even with echo turned off, you can still end up with screen clutter. Even redirecting output to NUL (as in **COPY COMMAND.COM D: NUL**) does not always work, because that only redirects STDOUT (the standard output device - the screen). DOS error messages and many memory-resident programs' installation statements are written to STDERR (the standard error device - also the screen).

There is a way to redirect STDERR as well as STDOUT. Put the line **CTTY NUL** where you want screen output stopped. Then put the line **CTTY CON** where you want echo turned back on, or where you must have keyboard control. Be **SURE** to include the second line **somewhere**, as DOS is sending **all** output to and expecting **all** user input to come **from** the NUL device. If using this technique in AUTOEXEC.BAT, put **PAUSE** as the first line of file until you know that things are bullet-proof. That allows an easy break out (with Ctrl-C) after re-booting if things go wrong. Note that any program that bypasses DOS for screen and keyboard control will not be affected by the **CTTY** command.

If you have a technique or hint you find useful, but you feel is not generally known, send it to me. Give me a disk at the software table (it will be returned). Write it out. Send me a message on The PUB with an enclosed file. Mail it to me. See your name in print!

Annual Flea Market

Come One, Come All.

Since November of 1987, the club has held an annual Flea Market at the R-A Centre in Ottawa. What a success! This year, we have reserved an even larger room to accommodate even more vendors and more flea market goers!

Join us Sunday November 5, from 1:00pm, in The Clarke Memorial Room of The R.A. Centre, 2451 Riverside Drive Ottawa.

For more information, call H. Gross 733-7989

"Just Give Me The FAX"

by Tony Frith

Do you find aspects about "FAX" or "Facsimile" machines confusing? At the October meeting, Thomas Grogan will give us an overview on FAXs and how they fit in the world of PC's.

Today's FAXs are either stand-alone machines or PC based boards. Either type can talk to the other if both occupy the same "class". The Group III class encompasses about 90% of all FAXs.

FAX machines use digital technology, image compression and they generally transmit either 204x96 or 204x196 dots per inch, at rates of about one page per minute. They have the cheapest per page cost, but the hardware is fairly expensive ($1,000 - $10,000). As PC users, we can cut some of the cost of buying a FAX machine and, sometimes, get a high speed modem in the bargain.

With a PC based FAX, you create your FAX document from a file and or a scanned image stored on your hard disk, and then transmit it. Incoming FAXs load onto your hard disk. Print or view them on the screen when you want. I find the learning curve from start to finish a little steep, but. . . No more difficult than a new software programme.

For the full story. . . come to the October Meeting. We will answer your questions.

Editors Note: We have been using a PC FAX board for about two years now. One little reported fact is that they generally produce output superior to normal FAXs. The weakest link in most complete FAX systems is the scanner. The printer part is capable of higher resolution than the scanner. Direct file transfers from your word processing and graphics software produce better images than printing and scanning. On the input side a VGA screen and FAX software allow you to magnify virtually any part of your FAX. The weak link is printed reproduction of received images and text. Nine pin dot matrix is generally unsatisfactory for anything less than Pica. Lasers are great.

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Floppies

strange software and mixed operating systems can override this hardware recognition.

If you have a 720Kb diskette, you write to it using your 720Kb drive and then, for what ever reason, you write to it using a 1.44Mb drive, you risk not being able to read that diskette again in your 720Kb drive. The higher intensity signal written to the disk with the 1.44Mb drive simply over rides anything the 720 drive put down. It's like trying to pick out the hummingbird in a flock of geese (or something like that!).

WHAT NOW!

Stop and think about how important it is for you to read data from different systems, when and where you want to read it. If you have a contract to finish a job and you expect to get some work done at home, be prepared. You don't want to find out when you get home, that you can't read the diskettes you brought from work.

PROBLEM FREE DATA TRANSFERS

To transfer data uphill from a low capacity drive, be it 5 1/4" or 3 1/2", to its corresponding high capacity drive, format a new (NOT recycled) low capacity diskette to low capacity using the LOW capacity drive (on the system you intend to transfer the data FROM). Then, copy the data from the low capacity drive. Your high capacity drive will not have any trouble reading the diskette.

To transfer data downhill from a high capacity drive, be it 5 1/4" or 3 1/2", to its corresponding low capacity drive, format a new (NOT recycled) low capacity diskette to low capacity using the HIGH capacity drive (on the system you intend to transfer the data FROM). Then, copy the data from the high capacity drive. Your low capacity drive may have trouble reading the diskette but there should be no confusing signals on the disk.

In all cases, I emphasize using a NEW diskette (not recycled), to eliminate the risk of having overlaid tracks, with impulses of different strengths or formats. This applies to both 5 1/4" and 3 1/2" diskettes. Of course, if you bought pre-formatted diskettes . . .

Some high capacity drives write low density diskettes better than others. Some low capacity drives read high density diskettes better than others. There is no rule wrought in iron.

Not only do you need to distinguish the diskette capacity, but you should also keep track of which drive formatted the diskette. I use those little red Avery dots to distinguish my 1.2Mb diskettes from my 360Kb diskettes. It's easy to tell the 3 1/2" diskettes apart: the 1.44Mb's have a hole in the upper right hand corner. When I format a diskette, I label it with the number of sectors, the computer's "name" and drive that I used to format as well as the DOS version. (In our office, each of our computers has a name. We named my computer TOES, because I have teensie weensie toes and it has a small footprint.)

If we write to a low capacity diskette on one of the high capacity drives, we identify the diskette as such, and don't expect to be able to read the diskette again using the low capacity drive! We also don't trust DOS 4. very much although we have to use it for some client systems.

Speculate. What about software distribution? Today's software manufacturers probably don't design their software using old PC or XT class machines. They probably use systems which use high capacity drives, right? But, to best serve the software market, they would likely prefer to distribute their software on low capacity diskettes (lower cost, lowest common denominator).

Now, what if they format all their distribution diskettes to low capacity but use high capacity drives? Isn't it possible that when you buy the software, your low capacity drive will not be able to read the distribution diskette? What if they distribute their software on low capacity diskettes, formatted with a low capacity drive? You buy the software to install on your computer which has high capacity drives. You forget to write protect the original diskette, you accidentally write to the diskette and POOF, you can't read the diskette anymore! Do you know why? You should by now!

Floppy Drive Addendum

Some of you may know that the 2" floppy drive has been announced. Well not only announced but actually is being used in a couple of the smaller portables. I believe one of them is a Zenith. They are 720k drives probably with an easy potential for 1.44Mb. Although they are smaller than 3 1/2" floppies they are reported to use the same area of the magnetic media as the larger drive does.

Present 3 1/2" drives would appear to have potential for further expansion creating another area for user confusion, ROM incompatabilities and problems in passing data between systems. This expansion would increase the number of tracks per diskette. Present 2" drives format diskettes to the standards used for 3 1/2" 720k disks.

Can the aspirin size drive with dual purpose media be far in the future.

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Cables

thus facilitating reassembly of components. It cleans by removing the oxidation and it enhances conduction by filling in imperfections of the metal with an electrically activated substance. It acts as a conductor where it should and an insulator otherwise.

A Stabilant application is good for about 6 years where the Pink Pearl should be used about every 6 months. Stabilant is also good for stereos and other electronic equipment as well as a tremendous assistance installing chips and other components. Recommended for aging computers.

It's a good idea to keep your cables tidy. You can use twist ties to keep them gathered and out of the way. You will help your computer keep cool if the cables are not obstructing the air flow around the cooling fan.

Now reassemble your computer. Be careful not to catch the drive cables on the cover of your computer as you slide it on.

Timothy Mahoney

Ottawa IBM PC Users Group - 1989 PC Club Executive

President	Stu Moxley	592-4933
Past President	Harry Gross	733-7989
Treasurer	Tony Frith	728-7597 Weekdays
		671-0401 Weekends
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	Marc Riou	733-2092
BBS System Operator	Mike Schupan	820-0293
Bulk Purchasing	Terry Mahoney	225-2630
		226-2615 FAX

Special Interest Groups

PCJr	Tom Mimee	828-9705
Enable	Bob Laidlaw	995-3708
PC/AT	Gord Hopkins	828-3834
Packages	Eric Clyde	749-2387
Whole Bit TV Show	Sandy Shaw	733-5088

BULK PURCHASING: COMPUTER SUPPLIES.

GENERIC (KAO) DISKETTES (10, pst included)

5 1/4" DSDD (360k): $5.50
5 1/4" High Density (1.2mb): $12.00
3 1/2" DSDD (720k): $16.00

KAO-DIDAK DISKETTES (10, pst included)

5 1/4" DSDD (360k): $14.00
5 1/4" Rainbow Pack (360k): $17.00
5 1/4" High Density (1.2mb): $20.00
3 1/2" DSDD (720k): $25.00
3 1/2" High Density (1.44m): $59.00
Diskaroo, 3 1/2" DSDD (720k): $25.00

And more... ribbons, paper, the kitchen sink...
For more information, call your bulk purchasing and ask for Terry, Tim or Suzanne (225-2630 or FAX 226-2615)

MEDICINE FOR YOUR COMPUTER!

Stabilant 22 is a prescription chemical that provides an ounce of prevention or a pound of cure. Stabilant 22, a Byte Product of the year, is a contact enhancer, lubricant and cleanser. Prescribed in small doses, this $35.00 wonder drug is known to cure parity errors, flaky drives and many contact related difficulties. Sufficient dosage is supplied to solve problems for many years. P.S. Try it on your VCR or stereo connections. For a prescription call your bulk purchasing and ask doctors Terry, Tim or Suzanne (225-2630 or FAX 226-2615)

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Optimizing

need high performance, especially in a commercial environment on systems with large numbers of disk accesses, FastTrax is probably one of the best investments you can make.

Editors Note: We use PC Tools Compress utility preceded by a back-up. I highly recommend that you back-up before any disk reorganisation with any software is attempted. Any software that is writing to disk when a power interruption occurs will cause damage to something. If you are unlucky it will be the FAT.

We often test the recoverability of accounting programs by interrupting the power supply while the program is running. Normally we use the on/off switch. John? Try it sometime while you are getting a demonstration by a salesman. Bring your polaroid and collect an interesting facial expression. Not recommended for the faint of heart.

Know your club

will return again next month, with a focus on memberships. The series has covered and will continue to cover various aspects of the club's activities and services.

Meetings:

Meetings of the Ottawa IBM-PC Users Group are held on the last Wednesday of the month except in July and December. The meetings are at the National Research Council Auditorium, 100 Sussex Drive (Gothic Building facing King Edward Avenue). Club functions including memberships, library disks, new members and bulk purchasing are available at 7:30 pm with the regular meeting starting at 8 pm. Free parking is available at the rear of the Gothic Building.

Next meeting October 25. Topic to be announced.

FEE SCHEDULE

Beginning	To	New Members	Renewals
September 27, 1989	January 30, 1990 *	$15	
January 31, 1990	February 28, 1990 ***	$30	
March 1, 1990 ***		$25	
September 27, 1989	December 31, 1989 **		$20
January 1,1990***			$25

* Membership ends March 31, 1990
** By mail or in an envelope at Meetings. Membership ends March 31, 1991
*** " " " "

DISK OF THE MONTH

One year subscription 5 1/4" (10 DOMs)	$25
One year subscription 3 1/2" (10 DOMs)	$45
Individual 3 1/2" diskette surcharge	$ 2

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Back It Up

XCOPY into something useful. To do a full hard disk back up, first in the root or top directory, type:

ATTRIB +a *.* /s

This sets a file attribute archive bit. Then type:

XCOPY *.* a: /m /s /e /v

This copies the files to your A: floppy. If your back up exceeds your disk size, you will run out of space on the floppy. XCOPY returns a message "Insufficient disk space" and tells you how many files it has managed to copy. XCOPY's /m parameter turns off the archive attribute bit of those files you have already copied. The /e parameter copies any empty subdirectories: /v verifies the files for integrity after copying. Insert another blank disk and repeat:

XCOPY *.* a: /m /s /e /v

until you have copied all the files. By putting two XCOPYs together in a batch file, one following the other on separate lines, you can make two back up copies at the same time. XCOPY copies the files in the order they occur in the subdirectory. You may want to change the order to improve packing. Use a program like DS, Norton Utilities Directory Sort program and sort the subdirectories by descending file size. This ensures that large files in a subdirectory go onto the diskette first, followed by the smaller ones. By the way, I run two hard drives and back up from one to the other: XCOPY works just fine-at least as far as 27 Mbs of data.

The entire backup need not be done at one sitting; XCOPY will continue where it left off. Diskettes can be formatted or have their files erased between each nibble of XCOPY and if necessary files on the hard disk can be deleted or occasionally copied off onto diskettes without using XCOPY. For example, some .THS and .LEX files in WordPerfect need an entire 360k diskette. Where do you put the subdirectory? Copy the WordPerfect files with a file copy, then set the archive attribute bit with:

ATTRIB -a c:\wp50\wp{wp}uk.ths

Continue with XCOPY.

If you want to do an incremental backup. Just run XCOPY again. It only copies those files with the archive attribute set i.e., the modified or new files. Putting a "DIR a:" after the XCOPY in the .BAT file allows you to see which diskettes have room to add more small files with XCOPY. For your sanity's sake, I do not recommend adding more files if you are copying to two diskettes at once.

THE OTTAWA IBM PC USERS' GROUP

Membership Application (please print)

Last Name:	Are you: A new member?
First Name:	Renewing your membership?
Mailing Address:	Can you help in group activities?
(include postal code)	Check any activities that apply:
Telephone: Home- Office-	Programming language instruction
Profession:	Newsletter input
Business Name:	Newsletter Editor
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Period covered: 89-90 90-91 89-91 (c ircle)	Software library
Disk of the Month Yes No 3 1/2"	Promotion / Publicity
Amount Enclosed: From rate schedule $	Nominations
How did you find out about the group?	Hardware Techniques
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What in particular interests you in the group?	Agendas & Speakers
	Advertising
What hardware/software do you own and/or use?	Bulletin Board
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