

## What's New Why Ask Me?

▲ By Bob Ward, Secretary

OH, IT'S BEEN A BUSY MONTH... and a short one at that. With the meeting coming on the 2nd Sunday last month, my computer timeclock keeps saying I've got another week to get this thing out. Not the case, though.

So what has been happening?z For those of you who were at the last meeting you might recall our bad news about the projection panels that we have been using these past years. Because our source now requires a \$150 rental fee per unit, me thinks we would be giving all our dues to someone else. So here's the plan.

Poly AV is transferring 2 greyscale panels to the Biology Department. They have no use for them anymore as everyone wants color. These panels will project 256 shades of grey at 640X480. Although not beautiful, it does show a picture. We will be using these for the SIG meetings. Since we won't have a source for color, I am asking all vendors that demonstrate for us to bring their own projection system. Undoubtly we will be losing some our demonstrators, but this can't be helped. If this is a problem for them, I will mention the \$150 rental fee if they want to come up with \$\$\$ rather than a projection system. We will also resurrect the NTSC system that plays through the overhead monitors in Fisher 286.

So what do we do for a projection system? I've already priced such items and it appears the LCD active matrix color panels run about \$2000 with the projectors about twice that amount. The projector would be preferable as they are much brighter and can be used in a room that is not completely dark. At the

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## Monty Python and the Search for the Holy Grail

▲ By Dick Brandlon, SLO Bytes PCUG

WHEN I REVIEWED 7TH LEVEL'S "Take Your Best Shot" a few months ago, I bewailed the lack of imagination in the program and yearned for the wit and genuine silliness of "A Complete Waste of Time", by the same company. I recall wishing 7th Level "better luck next time"...

Well, I've just finished a bout with "Monty Python and the Quest for the Holy Grail" and, despite a running battle with my sound card which caused me to miss a lot of the dialogue and mildly suggestive (I hesitate to use the word "bawdy") songs, I have to report that 7th Level has come up with a humdinger.

That is, unless you: A. Are easily offended by scenes that can charitably be described as sacreligious. (See the "Talk With God" segment) B. Dislike silliness. (See the 125-item "registration" which includes questions like, "What is your favorite color?" and numerous multiple choice items involving Cindy Crawford) C.

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## Club Calendar

### ▲ October 6th

CYBERMEDIA  
FirstAid 95 Delux  
for  
Windows

### ▲ November 3rd

POWERHOUSE  
ENTERTAINMENT  
will demonstrate  
Collision (Indy Car Racer)  
& Intereactive Books

### ▲ December 1st

Annual  
CHRISTMAS  
Give-A-Way

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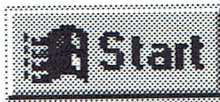
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# Restoring Win '95 Nightmare

▲ Commentary By Bob Ward & Doug Depue

Date: Mon, 16 Sep 1996 17:32:10 -0700  
From: "Douglas A. Depue" <dougdepue@thegrid.net>  
To: bward@thegrid.net



HI BOB, I HAVE BEEN TRYING TO REACH MICROSOFT'S WIN95 TECH SUPPORT line (206) 635-7000 all day and each time it is busy. Perhaps you might be able to interpret the meaning of the WIN95 error message "VFAT DEVICE INITIALIZATION FAILED. A device or resource required by VFAT is not present or is unavailable. VFAT cannot continue loading".

WIN 95 crashed on me after I used Windows uninstall to delete 2 versions of Netscape, betas GOLD 3.0 and Standard 3.0. I removed them because they were failing to boot up and were giving me the "illegal operation" message. I re-formatted drive C:\ as a DOS 7.0 system drive and tape restored WIN95 and the rest of drive C:\, which took 9 hours and 39 minutes by Colorado Travan BU for Dos. DOS 7.0 is working fine.

It seems to me that some vital files, whose names exceed 8 digits, are not loading because the extra digits for WIN95 have been lost in the backing up and restoring by dos(?). Can you give me any leads as to what might need to be done? I could restore WIN 3.1 and DOS 6.2 and reinstall WIN95 but if there is some other way it would save a lot of time.

## Bob Replies...

YOU'RE PROBABLY OUT OF LUCK. How old is your tape backup software? HP (Colorado) came out with a fix that recognized extended characters soon after Win '95 was introduced. If you did a DOS backup, you didn't get the extended filenames, therefore a BIG problem (thanks Bill Gates). I don't know what version of Win '95 tape backup you need but if you are using the same one that you used before Win '95 came out, it doesn't recognize the extended filenames.

## Later on...

To: bward@thegrid.net  
From: "Douglas A. Depue" <dougdepue@thegrid.net>  
Subject: You guessed(?) it!

WAAAAAAL, AS YOU SAID, GOOD LUCK... I reinstalled DOS 6.2 & WIN 3.1. Then, I re-installed WIN95 over same. All was well. Then, I restored the backed-up WIN95 Travan-1 tape over the newly installed WIN95. The screen filled up with misc. extra icons, many of which would not respond to the double-mouse click. Knowing that if I re-booted into the above mentioned agglomeration of files, it would fail, I then re-installed WIN95 over the tape restored mess.

Although it would then boot up, there were too many indications of impending malfunction. So, I re-formatted drive C: and began the re-installation of WIN95, which is now up and running. I could always rationalize and say that the C: drive needed some weeding out of excess files (which is true). I should also comment that I was unaware that I was actually using the TRAVAN for WIN 3.1 to back-up, not the WIN95 tape program. Thus, I was doomed from the start.

When the Windows95 program restores drive C:, it still wouldn't overwrite 71 WIN95 program files. It appears to me that the only way to effectively restore a properly backed-up WIN95 tape, would be to use Partition Magic to install a second version of WIN95 on its own partitioned drive with the WIN95 Tape Program installed. Then, you would boot up into that partitioned drive and restore the tape to a newly DOS 7.0 formatted root drive. This way, you might actually restore a pristine copy of the WIN95 drive C: files. Otherwise, there is no secure or likely way to restore WIN95 from tape.

I am still much happier with WIN95. It has so much more to offer that WIN 3.1 that I am going to take the chance on continuing with it.

# Library News

▲ By Bob Ward, Secretary

OKAY, SOFTWAREHOLICS—There's 3 disks. I do believe there are no DOS programs offered this month. #694-695 are both Win 3.X files where all files in #696 are to be run by Win '95.

## #694

**BBKW45:** Basic Bookkeeping for Windows v4.5.

**ALWIN9-6:** Alarm Clock 9.6. Multiple alarm clock/timer.

## #695

**OASIW420:** OWL Invoice, Sales & Customer Mgt. for Windows.

**GRMSLM11:** Grammer Slammer v1.1 - Grammer help.

**OBT110:** Unconditional rebooter/restarter/exiter.

## #696

### Win '95 Programs

**AVIC1495:** AVI Constructor creates AVIs from bitmaps.

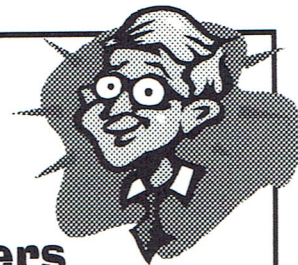
**EH131:** Free reminder utility with many options.

**CALCIT17:** Expressions calculator for Win95.

**CYGNU101:** Cygnus high-performance 32-bit hex editor.

**W95-11D:** Win95 Tips v1.1d: Windows 95 Tips & Trickss.

**GRMSLM11:** Grammer Slammer v1.1 - Grammer help.



## New Members

WELCOME to the four following individuals. We hope that SLO Bytes will be able to meet all your needs.

**Jack Breglio** 927-1557

**Peter Hunt**

**Enrique Lafuente** 481-4055

**Clyde Royle** 489-3207



# The Official Guide to CorelDRAW! 6

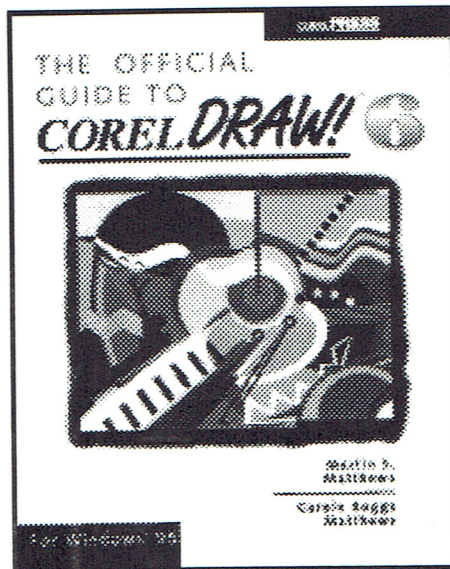
## A Book Review

▲ By Teri A. Sorgatz, Computing Assistance, Shasta, CA  
([tsorgatz@snowcrest.net](mailto:tsorgatz@snowcrest.net))

WHEN I TAKE ON THE RESPONSIBILITY of reviewing a book for a publisher I always try to be fair and actually *read* the book from *cover to cover*. (Are there Cliff Notes on computer books?) Consequently, it sometimes takes me a fair bit of time to get a review to press. In the case of the *Official Guide to CorelDRAW! 6*, by Martin S. Matthews and Carole Boggs Matthews (CorelPRESS, Osborne McGraw-Hill, Berkeley, CA) it took me a couple of weeks to do this volume justice (sorry Osborne!). This 7-pica thick book is just PACKED with information that is not available in the vague documentation that ships with CorelDRAW! 6.

The *Official Guide to CD6* has a skill level rating on the back cover of "For Every User". I take issue with that, however. I think that this book is *excellent* for *beginning* DRAW! users, but it was a bit frustrating to read having personally used the DRAW! program since its first release. I felt that explanations of features and methods were too simplistic and redundant for advanced (and often intermediate) users. For example: the book offers many step-by-step instructions on how to use the programs tools and effects. This is good for the neophyte, but advanced users could tire easily of being told to "Press DEL to clear the screen before proceeding" to the next exercise. My reaction after about the 3<sup>rd</sup> time was "Well, duh!" The authors wasted too much pulp repeating themselves.

Beginners will find the examples and exercises well written and informative. As a well-seasoned user I was appalled by the accompanying grayscale and black/white low-resolution screen shots and amateurish sample artwork. This is, after all, a book about a high end vector drawing program, not MS Paint. I remember fondly the wonderful color illustrations and screenshots in DRAW!'s first manual (sigh...). The authors did, however, include a 4-page glossy color insert highlighting examples from four



CorelDRAW! professional artists. I would like to have seen more of them.

I would have also liked to have seen more attention paid to DRAW! 6's new features and a good discussion of high-end output and color management. The very fact that in-depth coverage of these issues is missing from the book only reinforces my opinion that this book was not targeted to advanced users.

The *Official Guide to CD6* attempts to cover a lot of ground. Most of the book is dedicated to the DRAW! program itself, but there are also sections introducing Corel Presents, Photo-Paint, OCR-Trace and Dream 3D. They are not enough to actually *teach* you how to use those modules, but give you a fairly good overview of them. You are going to have to look somewhere else (perhaps a magazine, Internet newsgroup or WebSite) for in-depth instruction on how to use them effectively.

Do I recommend that you read *The Official Guide to CorelDRAW! 6*? If you are new to CorelDRAW! the answer is yes! It is an indispensable accompaniment to the DRAW! online documentation and manual. If you are an advanced user? Yes—but only if you would like a review of the basics.

## What's New

Continued from page 1

suggestion of Max Sicher, we passed the hat at the last meeting and collected \$59 toward the new projector. Hey, it's a start!

We will be keeping this money separate each month and reporting it as a separate item in the treasurer's report. If we tighten our belts, curtail spending, use the edges of the paper as additional space for newsletter print, I hope we will be able to make a purchase within 18 months. The question was asked about our non-profit status. We have what is necessary for the state of California but not the Federal which is more complicated. I have turned up the heat under the person who is supposed to be working on this, and if we don't get some progress soon, I've got a couple lawyers I might ask. Any lawyers in SLO Bytes with such expertise? The officers have decided that raising dues for such a purpose will NOT take place. For every extra \$5 we might get, we would probably lose a member who would contribute \$25.

Since our membership has been declining over this past year, we'll just continue soliciting for donations for the fund. Oh, if you win the lottery or find a projector is a neighboring dumpster, we'll be happy to take what ever you offer.

Utilidor is what they call it. A pain in the posterior is what it will become over the next 20 months. The first phase has started on campus and should not affect us for awhile. It looks like the large parking lot (H4) that is found on the oppsite side of Fisher Science will not be touched. I will keep you posted as to any changes in parking or routing onto campus. You too can see what's going on with the "bid ditch" through the internet. Just log on to <http://www.facsrv.calpoly.edu/utilidor/> to get the latest information.

Our many thanks for Seagate Software in SLO and their presentation on backup technology. Their new product, scheduled to be released in mid November, will be the backup answer to everyone using Windows '95. Presently, if you are using Win '95 and back up your system to tape, you must use a Win '95 software that recognizes Bill's extended filename structure. If you don't, then any

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# Cluster Phobia

## ▲ Psychoanalysis by Bob Hunt

IT'S AN INCREASINGLY COMMON DILEMMA, "What software shall I remove today to make room for that hot new killer program?" If you don't yet have that new Gigabyte plus hard drive, you are seriously considering it. Along with that large drive, comes a new concern - the question of hard drive partitioning.

Partitioning into two or more logical drives, and specifically the disk space lost due to greater cluster size required for large volumes, has been the subject of a lot of discussion lately. Some proclaim as much as 40% to 50% of your 1 Gigabyte partition may be wasted in the form of unusable "slack".

While such extremes are within the realm of possibility, a reality check is in order here before we all start whacking our drives into 32MB partitions like *Wardyl*!

## Why Partition?

Before it can be formatted, a hard drive must first be partitioned into one or more "volumes". Volumes are assigned by DOS a logical drive letter starting with C, then D, E, and so on. This discussion is about partitioning into more than one logical volume.

MS-DOS had no support for hard drive partitions larger than 32MB until version 4.01, released October 1988, unless you used third party software drivers (or Compaq DOS 3.21). As affordable IDE hard drives beyond 100MB were becoming available, it was soon common to have 3 or more separate 32MB volumes on one or two physical drives in one PC.

DOS 4 was an awful thing so most of us stayed with version 3.30 and our 32MB partitions until DOS 5, released in April 1991. Just in time, because by then we were running Windows 3.0 and applications were rapidly gobbling disk space. We bought 205MB, 345MB or 420MB drives which we could now partition as one big volume except for a couple of critical considerations:

- ▲ We already had programs spread across several logical drives and there were \*.INI files *who knew where*, with references to D:\BLAH\BLIP\THIS

and E:\BLIM\BLAM\THAT. Move everything into that new big C: drive, type WIN and you would find yourself pounding your way through error messages!

- ▲ Another problem was that tape drive capacities were smaller and if you prefer unattended (single tape cartridge) backups, it's much simpler to use disk partitions no larger than your tapes.

Another reason one might partition into multiple volumes is the DOS limit of 512 file (and folder) entries in the root directory. That number seems like an awful lot but I have seen that limit reached. Every program you install seems to want its' own folder in the root directory of drive C. The default directory offered by the install, "C:\SOMENAME" is too often accepted rather than to find an appropriate existing folder. (Disk space is the only limit to the number of file and folder entries in a sub-directory.)

Oh excuse me, I forgot to mention that "folder" is the new term for "directory", it's tough for us old DOS Geeks to change. Folder also replaces "sub-directory", or is it sub-folder?

## Why Not Partition? (Multiple Volumes)

- ▲ It is becoming a real pain to manage multiple drive volumes.
- ▲ New PCs come equipped with huge hard drives. The Enhanced IDE interface supports up to 4 physical hard drives, and they each require at least one unique drive letter.
- ▲ Inexpensive tape backup drives are available in multi-Gigabyte capacities.
- ▲ You'll soon have CD-ROM drives and CD-ROM changers that add more drive letters.
- ▲ Cheap removable media drives from Iomega and Syquest are very popular and they each require at least one unique drive letter.
- ▲ Even writable optical drives are becoming affordable, there's another drive letter.

Applications and operating systems expand relentlessly to fill available space. Windows, most commonly on the C: drive (or volume) maintains a folder named "System" which swells inexorably with every new program installation.

Upgrade to Windows 95, add the Microsoft Plus pack and you may find you'll have to move your Office Suite to another drive just to give Windows room to bloat. Have you tried that little task yet? Likely you'll end up re-installing the whole thing!

## Aloe Cajun, You Nuts?

Magnetic storage being digital, cannot read or write analog like a pen flows ink to paper. Disk reads and writes are done in chunks called "Allocation Units". The term cluster was changed in DOS 4.0, but whatever you call it, it's the smallest unit that the operating system (OS) can handle when it writes or reads a file.

The operating system can manage disk space only in full cluster units so every file consumes space on the disk in increments of one cluster. This is not the same as a disk Sector, a cluster is equal to one or more sectors, usually more than one.

So files are stored on disk like documents are stored on pages. And in the way that the last page of a document may contain a lot of white space, the last allocation unit of a file might contain a lot of wasted space. Often that last cluster will be nearly filled, but just as often it could be mostly wasted. Imagine documents with as little as one word on the last page!

The average waste is probably about half of an allocation unit for every file, less if your drive contains a lot of very large files, and more if, like Bobby Ward, you have zillions of icons and itty-bitty batch files.

## The Dreaded Slack

This wasted space is known as slack and varies with every file. As bytes are added to a file, the slack in that last cluster is gradually consumed, reducing wasted space, until the last cluster is filled and the file spills into another cluster.

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## Cluster Phobia

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Only data files, text, spreadsheet, documents, sound, some graphics, and batch, INI or PIF files grow incrementally that way. Executables (\*.EXE, \*.COM), libraries, overlays, and the like generally stay a fixed size until replaced by an upgrade or new version.

If we used smaller cluster sizes to reduce slack, disk performance would suffer due to the overhead required to manage all those clusters, and the larger FAT (File Allocation Table) that would be required.

Default allocation unit (cluster) sizes for hard disk partitions (volumes) are:

Hard Disk Volume Size	Allocation Unit (Cluster) Size	Bytes In Each Cluster
*16MB through 128MB	4 sectors	2,048 bytes
128MB through 256MB	8 sectors	4,096 bytes
256MB through 512MB	16 sectors	8,192 bytes
512MB through 1 GB	32 sectors	16,384 bytes
1 GB through 2 GB	64 sectors	32,768 bytes

\* Less than 16MB partitions use 8 sectors and a 12-bit FAT.

## Hack At Slack For Lack Of Facts And FAX Me Back, Mac!

How much of your disk is lost to slack? Slack percentage increases with the number of files, cluster size doubles with each volume size step over the 128, 256, 512, and 1048MB boundaries, and larger volumes will naturally receive greater numbers of files. All this suggests exponential losses to slack as partition sizes increase. I found it's not that bad!

Load up your spreadsheet or calculator and follow me, using the statistics from your own drives. Remember machines are binary and don't count decimally like humans. That's why a Kilo in computerese is 1,024, it's really 2 to the 10<sup>th</sup> power (2<sup>10</sup>), a Meg is 2 to the 20<sup>th</sup> power (2<sup>20</sup>, or 1,048,576) and a Gig is 2 to the 30<sup>th</sup> power (2<sup>30</sup> or 1,073,741,824).

Having access to a good variety of disks partitioned in a bunch of different ways, I decided to work up a formula to estimate averages for various volume sizes. Then I ran the Norton Filesize utility on those volumes and compared the actual slack with my estimates.

The drives all have a typical selection of software installed. Some contain MS-DOS 6.22 and Windows 3.x or WFWG 3.11, some Windows 95, or both. There are Office Suites, Publishers, Graphics programs, many communication and FAX applications, games, several DOS word processors, spreadsheets, database and accounting programs, and of course, utilities.

Let's assume the *average* slack per file to be approximately 50% of one cluster.

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## What's New

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full restore of Win '95 will not work as the filenames longer than 8 characters will not be restored nor recognized by Win '95. So once more the procedure for restoring a broken Win '95 harddisk is to first reinstall Win '95, then the Win '95 tape backup software, then all the files from the tape. Whew. Guess what I am leading to here is Seagate's new software. No longer will you have to go through the above laborous procedure. Instead it will only require one floppy to get your hard disk going again, and then you can directly restore from your Seagate tape backup software. It should save hours.

I failed to mention a local magazine that made itself into our possession last month in the library. I'm referring to TriMix, a local free monthly magazine that reports all the Tricounty news in computers, telecommunications and technology industries. It has many interesting articles. I also found ads for computer stores and companies that I never knew existed. I hope we will have some back issues at the next meeting. There are several distribution sites around the county including Comco Computers in Atascadero, TheGrid Internet Provider, Midstate Electronics and Phoenix books in SLO, and CompuMedic in Nipomo. If you have an internet account (doesn't/ shouldn't everyone) then connect on-line at [www.tri-mix.com](http://www.tri-mix.com).

You might drop into the library during the meeting as many things of interest migrate into that room, including computer magazines, freebies, and more. You'll never see them if you only go to the

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## Favorite Internet Sites ▲ By Bob Ward, Secretary

Try STROUD'S WINSOCK APPS. Here's a way of finding all those programs that enhance your internet experience. You'll find them at <http://cwsapps.fibr.net/>

I like to track certain stocks. There are many stock market URL's that give you a 15 minute delayed quote. But I've never found one that gives the latest business announcements for the companies you are tracking. Try <http://quote.yahoo.com/> for the best around.

So what do you do while waiting in line at the grocery store? Of course you look at all those outrageous headlines in

the *NATIONAL ENQUIRER*. Look no more, you can wait until you get home and fire up those headlines on the internet at [www.nationalenquirer.com/](http://www.nationalenquirer.com/)

If you want the latest headlines on everything to do with computers then try the TECH TICKER in the *SAN JOSE MERCURY NEWS*. Here it is <http://www.sjmercury.com/gmsv/>

For something a little closer to home, why not visit HEARST CASTLE. I never have, but it doesn't mean you can't on the internet. <http://www.hearstcastle.org/>





## Holy Grail

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C.) Are put off by grossness. (See the interesting way the horns are played in the introduction)

Other than the above, the program offers a bunch of offbeat, challenging and (yes) silly hours IF you have at least a 486-66 and 16 meg of RAM. I know the program says that a 486-33 and 8 meg will run it, but "recommended" usually means "It aint gonna do much unless you use this." Also, the help notice that reads, "If you have difficulty running Monty Python and the Quest for the Holy Grail, it troubles us deeply, but please keep in mind that we are terribly busy dealing with troubles of our own" should impel you to follow the recommendations. If you do have problems, there is a toll help line and a Web site, [www.7thlevel.com](http://www.7thlevel.com). Registration gets you free cheat codes.

Installing the game can be either very easy or impossibly difficult. The directions tell you that you can load it as a CD installation (which takes 400K) or full hard disk installation that takes either 400 or 500 meg, depending on whether you believe the book or the disk. You're beginning to get the idea that 7thLevel is not your run-of-the-mill company.

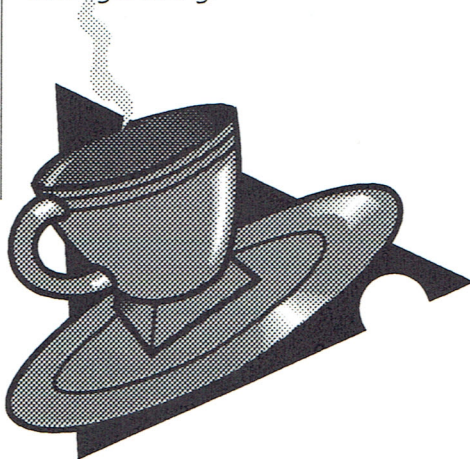
As in "Waste of Time", dicking is everything in "Grail". To even get started, for instance, you have to locate a swallow carrying a coconut (by dicking). Once you begin, you find yourself with King Arthur and his valet, Patsy, in pursuit of the Holy Grail. After the chat with God, you are offered a choice of where to go next, provided you find the right things to click including Plague Village, Castle Lombard and the Castle Anthrax. There are also games to play. In Drop Dead, for example, you get to stack the bodies of Black Death victims in a Tetris-like game where the bodies decompose when a line gets full. "Spank the Virgin" and "Catch the Cow" are two other choices, but I would suggest that your 12 year-old nephew not be encouraged to play the former.

And, speaking of ratings, the CD offers a toll-free number for Game Rating Information (1-800-771-3772), which has to be the most frustrating example of voice mail I have ever encountered. Maybe they've fixed it by this time, but

after listening to three levels of instructions, I was told to punch in the first four letters of the program on which I wanted information. I did so, and was then thanked for my interest and hung up on.

As I have previously admitted, I am a Python addict, so I really liked this CD. Out of duty, however, I have to warn you that if you do not have a truly warped sense of humor, you'll have trouble with "Grail". I still feel that 7thLevel is a company that's not afraid to take chances as well as a practical outfit which knows where profits may be found. You'll see that in the samplers included on the disk including the Ace Ventura adventures, "Waste of Time" and a number of childrens educational games.

**Verdict:** *Not everyones cup of tea, but a zinger for those who like their beverages strong.*



## What's New

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This coming month, CyberMedia will be back for a return visit. Remember PC911? Their newest product to bail people out when they get into trouble is FirstAid 95 Delux on CD. (It also has the Win 3.X version on it) The CD-ROM says that it fixes Windows Problems automatically. Yep, it does. I've seen it in action and can attest to its usefulness in Win '95. Probably the commentary found in this newsletter about Windows '95 would not have been written if Doug Depue had this program. They also have a second program still in beta testing called Oil Change. First it searches your hard disk for existing program drivers including those found in Windows. You then connect to their service where your drivers are compared to the latest available. If you want an "Oil Change" with new drivers, it's only a click away. Find them along with free updates for registered users at [www.cybermedia.com](http://www.cybermedia.com).

I think that's about it for this month. I'll keep emphasizing that if you want to do your part in the club, at least come to the meetings. Your presence is necessary to keep companies coming to the central coast.



# INTERNET WORLD WIDE WEB

# THE GRID

## 781-6600

### IT'S THE WHOLE WORLD ON-LINE!



# Sending Files via the Internet

▲ By Irene Kraus,  
CEBUG Swatter, April, 1996,  
Computer Erie Bay Users Group

YOUR BOSS IN MONTANA has called and needs a file that you have—today! Or, you've found a very nice image file of Donald Duck that you know your brother in the next state would really like. What would be the fastest way for you to send that file? Via the Internet, of course!

As long as both of you are able to send and receive Internet email, this will work. With today's Internet tools, many of the steps involved in preparing to send a file, or in receiving one may be done for you by your provider.

In this article, I will go over the basics of the process, and make some recommendations for some helpful programs in case your Internet connection does not yet have support for all of these features. There are other issues you will need to discuss with your provider before you begin, such as: additional charges for services, tools available to you to handle file attachments, and whether or not your provider can handle you sending a huge file to where ever it has to go. So, as always check with your provider before doing this!

## Security issues

Always be aware that anything sent out on the Internet can be intercepted by someone else at some point. If the information in the file is sensitive in any way and needs to be protected from prying eyes, you will need to encrypt the file so that only the person you are sending it to can decode it. The process for doing this is not hard, however discussion on it is beyond the scope of this article. If this is an issue, I'd recommend you researching such programs as PGP (Pretty Good Privacy) and others that are similar to it.

## Are you using a Full Service Internet Provider or a local BBS?

If your account (and the person you are sending the file to) are hooked up with a reputable, full service provider; transmitting files via Internet (and doing

things like FTP, etc.) are considered ordinary parts of your service. However, if you are sending or receiving email via a local BBS, it would be very wise for you to check with your Sysop before either sending or receiving files via Internet. This is because transmission of these files will add to the Sysop's cost of doing Internet email, and they may not be willing to pick up that cost for you. Some will do so if they can charge you some sort of fee for collecting the message with the file for you. Again, check before you do anything!

## Is the file text or binary?

Okay, we'll now assume you have cleared all of the other hurdles and are ready to send a file to someone over the Internet. If you are sending an ordinary text file, in straight ASCII, you don't need to do any special preparation on the file. Just insert or paste it into a regular message, and send it out.

All other files such as spreadsheet, word processing, or database files are considered binary. If you were to attempt to send a binary file through the Internet without preparing it, it would not arrive at it's destination in a usable condition. This is because Internet was designed only for the transmission of text messages. You have to prepare it for it's journey just like you would any package you mail to someone. Preparing a file is called encoding.

There are several different standards (and programs) that can prepare a file for going out on the Internet, and even different versions of some of the coding algorithms. Be sure that whatever type you use, the person receiving it can decode it! Versions of encoding/decoding programs are available for just about any platform in use today.

## What an encoded file looks like

Understanding the basics of how a file is encoded is important for you to succeed in sending or receiving a file, as you need to know what may have gone wrong you can retry again. All encoding programs operate by converting the binary file into what looks like a text file. To you or I, it looks like a bunch of garbage, as line after line of seemingly random characters fill up one or more messages.

At the top of the encoded file are is usually a few lines that tells what program did the encoding, and to what standard. The actual filename of the file will be there also. If the message had to be broken up into several parts due to it's size, you should see a message like "part 1 of 10" or "part 1/10". In this example, you would know that the file was split up into 10 parts and that you need to have all 10 parts there before you can put the file back together again. At the end of each section, there may be a checksum which is used by the decoder to confirm that the file being reassembled is done properly.

A word about the number of lines allowed in a message before we continue... Some older systems can not handle messages that have much more than 100 lines. Fortunately, you will find few of those on the Internet as a line number of 1,000 is much more common. If you're finding that some part of your messages are not getting through, check with the providers on both ends of the transmission to see if they have some restrictions on the number of lines within messages.

## Wincode—point and click decoding and encoding

Wincode by George H. Silva (Snappy, Inc.), has rapidly become one standard in the industry. It is a freeware program, although the help file & documentation does cost \$5. Due to it's graphic interface and the fact of the program being so intuitive, many people can use it even without the documentation. To encode something, you just press the encode icon (the one that's on the far left), find the file on your system and click OK to start. Wincode defaults to 984 lines per message with file checksums at the end of each "chunk". This should work fine for most everyone.

The beauty of Wincode's interface can be really appreciated when you have to decode a file spread over several messages. You click on the icon that's the second from the left, and locate the first message containing the first section of the file. Wincode will start decoding, and attempt on it's own to locate the other sections of the file. If it can't find it, it will ask you to tell it

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## Cluster Phobia

### Continued from page 5

To find the statistics of your drives, at the DOS prompt type `chkdsk D:` Replace the D with the drive letter for each volume in turn and record your results. Your mileage may vary but your output should look something like this:

```
C:\>chkdsk d: <Enter>

Volume MS-DOS_6 created 09-04-1995 6:55a
Volume Serial Number is 404F-0DD5

 408,494,080 bytes total disk space
  483,328 bytes in 6 hidden files
 1,613,824 bytes in 195 directories
268,681,216 bytes in 4,367 user files
137,715,712 bytes available on disk

      8,192 bytes in each allocation unit
 49,865 total allocation units on disk
16,811 available allocation units on disk

655,360 total bytes memory
627,264 bytes free

C:\>_
```

Using the figures returned, add up the number of hidden files, directories, and user files. Then add up the bytes in those three categories. Note that the cluster size is the number of "bytes in each allocation unit." Look around for any extremely large files which could skew your averages, and factor out those bytes before making your calculations.

There should be at least one large hidden file (Windows permanent swap file) on the root directory of one of your volumes named **386SPART.PAR** for Windows 3.x or **W95UNDO.DAT** for Windows 95

To display hidden files at the DOS prompt, use the command:

```
C:\>dir d:\. /ah <Enter>
```

Replace the d with the drive letter. Add /s to search sub-directories.

I calculated the average bytes per file and files per megabyte for all my drive volumes, and used those averages to predict the probable slack for various partition sizes had they been completely filled. Incidentally, *never* let any hard drive become completely filled. Maintain at least 10% free space on every volume, or you court disaster!

The results of my estimates were surprisingly close to the actual slack percentage returned by the Norton utility. In most cases the actual slack percentage was less than calculated. There is some binary allocation "overhead" which reduces the average slack per file closer to 45% than 50%.

Disk space lost to slack was 5% to 8% for volumes less than 256MB, 14% for volumes up to 512MB, and 27% for 1 Gigabyte volumes.

## The Trade Off

While 27% of a Gigabyte is a lot of space to forfeit, it still leaves over 837MB usable. And if instead, you partition that drive into, let's say four 256MB volumes, maintaining a 10% free cushion each, you're down to about 922MB. There will still be about 7% of that lost to slack, leaving approximately 857MB usable. I'll readily give up 20MB of a one Gigabyte drive to have one large partition to manage rather than four!

(Yeah I know, if you leave 10% of the 837MB free, it's really 857 - 753 or 104MB, but really, just 1/4 of that should be plenty to leave unused for safety.)

## Conclusion?

Shed that Cluster Phobia and simplify your life with a few less drive letters to juggle. Put all those icons and batch files into "Libraries" for efficiency, (Subject for a future article.)

Please note that compressed drives using Drvspace, Stacker, or other similar utilities work by compressing all the files and folders of the given drive into a single giant hidden file. The real drive is renamed to H: or some higher letter but you still see C: as a normal drive. Since all those files and folders are really contained in just one big file, the maximum space lost to slack will be less than *one* allocation unit! But remember, there will be a memory and performance penalty to pay and some management issues associated with such compressed drives.

For uncompressed drives, my instinct is to recommend against partitions larger than one Gigabyte, but it could be argued that with such massive quantities of storage available, who's going to miss a measly couple of hundred Megabytes? For my money, the convenience offsets the sacrifice of storage space.



## Sending Files

Continued from page 7

where the next part is. So, no matter what naming convention you've used, it's not that hard to reconstruct a file. Or, if you've gotten all of the part of the file saved into one huge text file, Wincode will search through it and stitch the file back together for you.

Wincode v2.6 is the most recent version I have of the program, and will run on any system running Windows 3.x in enhanced mode, or under Windows 95. Among the formats it supports are: UUcoded (UUE), Mime64 (MME), and Binary/Hex (BIN). The normal file extension associated with those types of coding are in the parenthesis.





# Club Information

**HARDCOPY** is a monthly publication of SLO BYTES PC User's Group located in San Luis Obispo, California. Information in this Newsletter is derived from both our own membership and other PC User Group Newsletters. The purpose of this publication is to inform our members of meetings and provide information related to the use of IBM PC's and compatible computers.

**Membership:** Dues are \$25 per year. Newsletter only is \$16 per year. Full membership entitles you to our monthly newsletter, full use of the public domain software library and discounts at local computer stores.

**Article Submission:** Deadline for submission of articles is the 15th of each month. Articles should be provided in ASCII format without any type of formatting from your wordprocessor including tabs, indents, extra spaces, or highlighting. We prefer articles on disk but will accept hardcopies if necessary.

**Disclaimer:** Neither SLO BYTES PC User's Group, its officers, editors, or contributors to this newsletter assume liability for damages arising out of this publication of any article, including but not limited to the listing of programming code, batch files and other helpful hints.

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# Meeting Times

**GENERAL MEETINGS** are held the 1st Sunday of every month, unless noted otherwise in the newsletter calendar, at 2:45 pm in the Cal Poly University Biology Department, Fisher Hall 286.

**SPECIAL INTEREST GROUPS (SIGs)** meet at 1:00 to 2:30 pm.

- ▲ **General Info SIG / Internet SIG:**  
Fisher Hall 286
- ▲ **Win95 SIG / Beginners SIG:**  
Fisher Hall 287



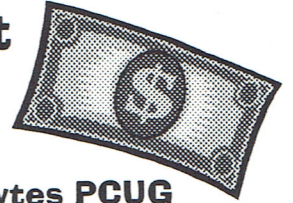
## Slo Bytes BBS

(805) 528-6172  
 28,800 / 8 / N / 1  
 PC Files (9,000+)  
 and Message Section

## Slo Bytes WebSite

[www.thegrid.net/slobytes/home.html](http://www.thegrid.net/slobytes/home.html)

# Treasurer's Report



## SLO Bytes PCUG Expenditures August, 1996

Beg. Chk. Bal.	+	889.87
Expenses:		
Newsletter 08/96	-	114.97
BBS Phone	-	10.70
Long Dist. Cgs.	-	27.92
Modem 2.88	-	131.99
Challenge T-shirts	-	119.90
Printed Checks	-	8.74
	-	414.22
Deposit 09/09/96	+	393.00
<b>New Balance</b>	<b>+</b>	<b>868.65</b>

### ▲ Projector Fund ▲

Opening Balance	+	53.75
9/96 donations	+	59.00
<b>Total</b>	<b>+</b>	<b>112.75</b>

## Slo Bytes Officers

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<b>Vice President</b>	<b>George Henderson</b>
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<b>Editors</b>	<b>B. Ward &amp; T. Sorgatz</b>

## Floppy Disks 4-Sale at the meeting

DSDD 360K Formatted Floppy Disks with labels, tabs, & sleeves .....	55¢ Each
DSDD 360K Formatted Label Over Floppy Disks .....	45¢ Each
Generic High Density Formatted Floppy Disks (5.25" X 1.2 Mb) .....	70¢ Each
Generic 3.5" X 720K Formatted Floppy Disks .....	70¢ Each
Generic 3.5" X 1.44 Mb Formatted Floppy Disks .....	70¢ Each
New Library Disks .....	100¢ Each

*All Disks fully guaranteed against defects.*