THE JACG NEWSLETTER

$2.00

THE JERSEY ATARI COMPUTER GROUP

FROM THE EDITOR'S DESK

Well, Elections are over, and yet, they are just about to begin. I feel good about the results of the national election and I am sure I will feel just as good about the results of the upcoming JACG 'elections' (which really have become more of appointments than elections these days!). I feel that both our country and the JACG are poised to have really great upcoming years and besides I can finally gloat that I voted for a winner for the first time in 16 years!! (I voted for John Anderson in 1980 and I learned my lesson then vis a vis Ross Perot this year.)

Anyway, I think that the club can actually learn some lessons from the results of the national election. Not so much, the club officers who serve ably every year, but the majority of members who do nothing every year to help move the club along. They don't do demos, don't write articles, don't help the officers. As George Bush learned, you just cannot sit around doing nothing, hoping that things will just fix themselves by some magical intervention.

One very postive thing though about our shrinking membership in this regards is this: As our membership gets smaller, I notice the percentage of helpful participatory members has greatly increased. So small membership is not always a bad thing to have!! Good luck to all of JACG in 1993!

IN THIS ISSUE ...

CALENDAR OF EVENTS

NEXT MEETING:

December 12th, 1992

10:00 AM TO NOON

FLEA MARKET Before Meeting

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'PREZ'ING MATTERS
by Ed Salvesen, President JACG

As George Bush has ALSO found out this month, being President is a thankless job! Don't misunderstand; it HAS its rewards, but the infidelity of public opinion must've felt like a slap in the face to him!

On the lesser plane, my position didn't really require worry over votes, but it is less rewarding, so we're even!

All kidding aside, I wish to thank all members of the Ex-Comm. for their 1992 services and I especially thank Joe Kennedy for his input and for helping me inure to this unsought position.

My successor may count on me in similar fashion as time goes by and I hope to be responsive to germane queries.

Enough of this! Let's get on to news:

All went well and we have another visit by George Richardson this month and I expect we'll all enjoy seeing the ATARI Falcon. I also (personally) want to hear about WAACE from Joe Roborecky and/or George, if he was there.

Since we are short of many giveaway items, we must 'stretch the soup' as the old saying goes. In line with that, I have a cache of old newsletters from the Eighties that I'll give to the next President, ostensibly as handouts to attendees, rather than as 'prizes'. I mean, Let's be real!

Oh! This, from Rush Limbaugh (of TV/radio fame):

Clinton says he won't increase tax on anyone under $200,000.......but Congress WILL and they have tabled a bill in committee, waiting for Clinton

to be President, when it will be 'untabled'! Buried inside this bill is a reduction of the Estate Tax exemption from the present $600,000 to- you guessed it! - $200,000! No big deal, you say? There's no inheritance I could get that would put me over $200,000! It doesn't work that way! The estate itself, as one lump sum, is what the tax is based on-sort of a tax on dying!! Even if there are dozens of recipients, each getting a few thousand, after the estate crosses the $200,000 threshold, one third gets scooped up by the Government.

I will say this in defense of Bill Clinton: He had nothing to do with this bill's drafting; but its drafters KNEW George Bush (without a line item veto) would've vetoed this bill and they EXPECT Clinton to sign it. Watch the news carefully and see if Clinton is his own man or IS OWNED.

I apologize for the political digression, but the theme IS the CHANGING OF THE GUARD, as it were.

I offer my thanks and congratulations to those who will be Ex-Comm members for the coming year and I ask our silent majority to please find a way to keep our club a forum for the exchange of information by writing an article, or even asking Dave A. a question whose answer is interesting so that he may print them.

That's a wrap! Ciao! -30-

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16 - BIT FEATURE

THE JACG ST VP'S COLUMN
by John H. Dean, PE, JACG 16-bit VP

The Falcon030 is Flying!

There has been literally reams of information about the Atari Falcon030 in the various Atari Magazines, Newsletters, what have you, and I think I have seen them all. But not one of them has really raved about the one thing that I think will set the Falcon

apart from almost all existing personal computers. That one thing is the Motorola DSP (Digital Signal Processor) that has been added.

What is this DSP, and what will it do? You have heard of CAD/CAM, haven't you? That is, (C)omputer (A)ided (D)esign/ (C)omputer (A)ided (M)anufacturing. Well, how about CAS/CAV? Or, (C)omputer (A)ided (S)ound/(C)omputer (A)ided (V)ideo. The Falcon has something built-in that other machines have to 'add on'. There is a lot of talk going around about multi-media, which usually means a CD ROM hitched up via a SCSI port, and suitable software so that CD's packed full of words. pictures, and sounds, can be displayed on the computer video screen. But just as the built-in MIDI ports on the Atari ST computer were the reason musicians took to the road with their Atari 1040's or Stacys under their arm, the Visual and Performing Artists are now going to go crazy over the Falcon.

Quoting from the news released at the Boston Computer Society showing of the Falcon we have:

"The Atari Falcon 030 is an ideal entry to the new and growing personal integrated media market," said Sam Tramiel, Atari's President and CEO. "It's a powerful system that gives users access to a whole new world of applications. Yet the system remains easy to use and affordable."

And it is downward compatible. All the good stuff we already have will now be running on a 16 MHz machine.

You may have read in the June/July 1992 issue of Atari Advantage about what Digital Signal Processing can do for us. Here are some of the application highlights:

DIGITAL AUDIO & MUSIC PROCESSING
Analysis of musical instrument sounds.
Music Synthesizers
Digital recording studios
Hi-fi compression; error correction

Reverb and ambience enhancement

COMMUNICATIONS
High speed modems
Digital repeaters of analog signals
Data encryption and scrambling
Radar and sonar processing

SPEECH PROCESSING
Speech analysis
Speech synthesis; vocoders
Speech   recognition/speaker
authentication
Speech enhancement, noise cancellation

IMAGE PROCESSING
Image enhancement; pattern recognition;
computer vision
Reconstruction;   CAT,   PET,   MRI
tomography

GRAPHIC IMAGE GENERATION
Image   management: Shapes,   sizes,
contours, shading, highlights
Vector Manipulation: graphics "engines"

Atari has also announced that the new multitasking operating system, called MultiTOS will also be available for the Falcon030.

The November issue of BYTE Magazine has a forty page spread about Signal Computing by Eric C. Anderson, Stephen Shepard, and Phil Sohn. They point out that "Digital signal processing makes it possible for computers to interact with the world by enabling them to process real-world signals, usually in audio, video, or electromagnetic form. Signal processing can let you understand the information in a signal, transform it into a practicable form, or use it to synthesize information".

They then go on to explain "What is a Signal?", what are 'Signal Parameters', 'Digital and Analog Signals', 'Digital Storage and Real Time Processing', among others. You really should read the whole article to understand the full implications of what the DSP chip in Falcon is going to deliver.

In an accompanying article "Inside Signal Computing" by Peter Wayner we read "The best way to turn an ordinary computer into a multimedia master is to add a digital signal-processing (DSP) chip. These chips provide the ability to create and modify complicated video and audio signals in real tome. That's why every Next machine is sold with a DSP on board, why IBM and AT&T are centering their multimedia offerings on DSPs, and why future Mac's will come equipped with them". And here we are with the Atari Falcon030 ready to be sold with the DSP 'onboard'.

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8 - BIT FEATURE

2 BITS FROM 8-BIT VP
by Joseph E. Hicswa, JACG

Saturday October 10 was an ideal Fall day as I eagerly drove to our monthly JERSEY ATARI COMPUTER GROUP meeting at AT&T BELL LABS in Murray Hill NJ. Clear weather, comfortable temperature Berkley Heights trees coloring the leaves.

After parking the car, unloading 8-bit Club paraphenalia, I walked into the main building, said "Happy Good Morning" to a pleasant security person and made my to our new meeting room. The gathering of members were busily displaying flea market ware, writing descriptions of 8 and 16 bit club disks offered for sale by club librarians. Others set up the equipment for demos, or mingled around socializing, exchanging news, views or and paying dues. Then disappointment.

Monthly newsletter was not available. Its a good thing God does not destroy ATARI computer clubs when newsletters are not distributed at their meetings otherwise we would be stranded.

We learned our Editor must leave early every morning for his bread and butter job -- before printer opens for business. The printer goes home before David can return to his family. It is difficult for him to deliver articles to the printer and pick up the assembled newsletters. 16-bit VP David Noyes has chivalrously helped our editor. Alas, this week Sir Noyes was not available. Editor Dave called the printer who was to drop off the newsletter at a specified location. They were not there Friday night. Both Daves live long miles from our meeting place. They start their journey in the early hours. However all is not lost. Upon explanation and discussion it was agreed the October newsletter would be mailed except to members who preferred to get their's at November meeting.

President Ed Salvesen will get address labels to Editor Arlington so he could attach them. Fred Zant stepped forward saying he would pick up newsletters to deliver them to post office. Arlington will notify Fred when they are ready.

Now laddies and lassies, that's ATARI- JACG cooperation. A problem resolved nicely. T'was a good feeling.

Hockey season is emerging; Editor Dave Arlington is proud father of a budding iceman. We will miss Dave at Saturday meetings as he cheeringly supports his son's sportsmanship on the rink. Maybe Father Dave will submit an occasional article about his young'ns progress.

Joe Roborecky was at the ATARI show in RESTON. He was missed. Members asked about him.

President Ed gave a membership report: 54 members; and a financial report: we still have some money left. Hopefully renewal dues will keep us solvent.

Ed has a copy of B&C software catalog from which we get a club discount. See him at next meeting.

Some members discussed JAGG's BBS -- the ease in which it is LOGged on and used. If you have a modem, discover yourself what we learn at meetings. For

example on-line ATARI EXPLORER has news, views and programs.

16-bit VP John H. Dean gave us news of FALCON which is covered in his October newsletter article. He also mentioned getting a letter about a potential ST member who learned of JACG from one of the ATARI magazines.

8-bit VP Joseph E. Hicswa told that he abridged a TURBO BASIC DOC and sent it Ron Fetzer of OL'HACKERS A.U.G., New York Ron will include it in next upgrade of TURBO BASIC. Also, Ron Fetzer enhanced the shorty 8-bit program Joe submitted to OL'HACKERS. It was one of our 8-bit demos.

8-bit VP quoted from a letter received from Alex Pignato President OL'HACKERS we learned they "have been getting so many new members lately that we (OLH) are having trouble keeping up with the demand". Many ATARI owners are looking for support and comradeship.

Officer nominations were as follows:
President, Joseph E. Hicswa and William Bingham.
16-bit Vice President: Dan Baer
8-bit VP:???MYSTERY MAN!???
Secretary Membership: E Salvesen
Treasurer: Jack Rutt*

*Jack Rutt continues temporarily until another member accepts this position. THANK YOU MR. JACK RUTT.

When you read this it will be election time or past. If you neglected to vote then live with what you got. When your choice is not elected, keep the winner on his toes with your anxieties, cares and concerns. If no candidates satisfy you, then run for that office and show us how that job should be done.

We saw a fine CADD 16-bit demo by Dan Baer followed by four 8-bit demos.

First 8-bit was by David Arlington who showed renowned ULTIMA III -- EXODUS, an outstanding, graphically colored video game. Dave demonstrated

his expertise in directing four good-guy warriors to fulfill a mission as they combat their way through hordes of demons, monsters and wicked baddies.

8-bit Librarian Sam Cory was next with DISKMASTER from our JACG library. Sam showed briefly how DISKMASTER lets you enter each sector of a disk, then look at each data byte. You can change it, move it, return it to same or new disk location. It's now possible to extract damaged files or those inaccessible by normal means. Many programs have been salvaged because of DISKMASTER. If you don't have a copy, see Librarian Sam.

Last two demos were by VP Hicswa. With FIRST XLENT Word Processor he made one file serve two purposes: Address list and Telephone list.

Each file entry contained four lines:
NAME
BOX/STREET ADDRESS
CITY, STATE, ZIP
PHONE NUMBER

As is, the file prints addresses with phone numbers.

To print address labels w/o phone #'s, Joe used XLENT'S SEARCH mode to erase instantly all phone numbers. A LABEL PRINT file was inserted for labels to be printed without phone numbers.

Next was Hicswa's 8-BIT shorty program enhanced by Ron Fetzer of OL'HACKERS. After BOOTUP, it graphically displays each ATASCII code character with a tap of the space bar. He donated it to our JACG disk library.

Door prizes were withheld. They'll be distributed at November meeting.

See you all in December. Bring friends to share the warmth of our meeting.

Noise from Noyes

- D. B. Noyes, JACG

NOMINATIONS & ELECTION

It's that time again (NOVEMBER) when the elected portion of the JACG Executive Board is chosen. It is that time in the year when WE must choose those who will guide the club through the next year. Another year, another JACG election - same, same? No, I do not believe so. Firstly, I have been a JACG member since February, 1985 (ATARI owner since January, 1984), and in all my years with the club (I have NEVER missed an election) this is the first JACG election that I have see where ANY candidate proffered him or herself for ANY position. Further, the "slate" is not full, and some of those who have accepted nominations, have done so reluctantly as no others accepted.

A prediction. Based on the downward spiral of both the membership and the treasury...I rather doubt that a viable JACG will be around for the November 1993 elections. There is no way the energy and determination of a small percentage of the minute membership can sustain a corporate JACG body. This is in NO way a reflection on current membership, but simply a logical progression (or, in our case, retrogression?) of an inexorable trend.

LATEST ADDITIONS (ST)

Recently I purchased *Warp 9*, a screen accelerator from CodeHead Technologies; and the sucessor to *Quick ST*. I'm sure that a benchmarking program will indicate a spped increase from my copy of *Quick 3T*; but to tell you the truth, I see no visible, noticeable improvement. I also purchased The DeskJet Utilities Pak (from SDS [Software Development Systems]); a multi-faceted utility for those who own both ST's and the Hewlett Packard DeskJet printer. Although it is an all around utility, I purchased it for one feature, the disk labelling feature. I wanted to be able to print disk labels (for 3 1/2" disks) on sheets containing 9 labels, with either my Epson Action Laser II or my DeskJet 500. I am halfway there. The current version of the software supports the DeskJet, a newer version (which I have ordered) will support either a Hewlett Packard or Epson Laser printer, or the DeskJet printer.

MAGAZINES

I continue to puchase (at Software Spectrum) both <u>ST Format</u> and <u>ST User</u>, magazines published in the U.K., exclusively dedicated to the ATARI ST (as their titles lend one to believe!). These magazines come with disks (between the two, they average about 3 disks a month), and are reasonably priced and discounted (for JACG members) by Software Spectrum. I buy the magazines primarily for the disk contents (good PD and Shareware offerings, and (by special arrangements) occasional commercial software. I do also read selected articles of interest, but the disks are a fantastic buy.

One sad commentary, by reading the magazine, one quickly can see (by comparison) how poor the ATARI retail market has become here in the U.S. The paucity of outlets here is inversely related to the availability in the U.K.

ST DISK LIBRARY

Again this month (November, 1993) we will have multiple disks offered to the ST membership (of course, 8-bitters are also welcome to purchase them - perhaps as gifts for their ST-owning freinds!). There will be a good mix of games, utilities and applications (as there ALWAYS is!), and at least one of the disks will be offered as the ST Disk Library's Disk of the Month. If appropriate, I will also try to make a bargain "bundle" of the new disks available for purchase.

"til next month...
Dave Noyes

8 - BIT FEATURE

8-BIT PD LIBRARIAN'S REPORT
by Sam Cory, JACG 8-Bit PD Librarian

Good old reliable Ol Hacker's bimonthly disk is one of our DOM's this month. Tain't your fault I have a bad memory. Here I thought our calender was June, Sept, Oct, July, and August. At least our DOM's say so. July, and August this month. You got 9/10 at Oct meeting. How time flies. Haven't decided what the other DOM will be. Dave needs this copy in the mail today. Get the dope at the meeting. No one who doesn't come to the meetings buys disks anyhow?

NEWSFLASH!! A last minute addition to this column as phoned in from Sam the Man himself. Library Disk 259 is a Double Sided disk with the front full of Maze Games and the Back is full of BASIC Games including a Lotto Number picking program. Library Disk 260 is the complete on-disk listing of the Ol' Hackers Club Public Domain Library of over 200 disks.

NEWSFLASH II!!! Sam just talked to Ron Richie of TextPro fame and Ron told him that TextPro 5.0 is finally shipping even as you read this!

So you do not like RLE Files. You sent a firm message last meeting. You bought 2 disks. Is it because I did not give out the titles of every picture? That is two hours out of my life consecrated to JACG. Two disks $4.00. Better I should pay $4.00 to JACG and work on my garden. I feel real sorry for Dave Noyes who prepares 5, or 6 full 3.5" disks and sells 2 disks. That is at least 8 hours for a $4.00 return. Why don't you members make us feel like our job is worthwhile. Is it that you have all the programs and files you need? IMPOSSIBLE!!!!!

I have enjoyed the many fine dedicated ATARIANS who have helped me with the 8-bit librarians job. I have wondered at the amount of material they have given TO ME of PD files, and TIME.

LOTS of TIME to educate me. Kris Holtegaard ranks in the top. He made two Sparta Dos VHS Tapes. The second one just to meet my wants - SPA Subdirectories. I tried to sell these tapes to you and as usual you did not need them. Your loss. I am in the process of using SPA to extraxt the directories of all the disks I have. So far there are two sides of a double density SPA disk. I will probably have one more befor I am through. There are, of course, duplicates. One reason for this task. Since this file length is about 250K+ and TPX editors are only 15K+ you may wonder how a 256K file can be handled.

Well here comes TPX with a file splitter option. I can take a file of any length. How about 30 megs, for example. With that file and the ,C and ,Z function I can easily read and change, or divide it or keep the file as one. At the same time a search can be made by FIND for a particulair string of up to 30+ characters. That means if a proper code is made for each Disk Directory in the Directory List I can find one file through a macro. This requires press several keys, ENTER a string, press one key, and sit back while the computer finds that string for however many times it occurrs in 30 megs!! Stops and lets you examine every occurrance. Understand this means I can FIND, LOAD, and RUN a distinct file almost hands off. I have yet to achieve that brilliance. Maybe next year?

Yes, I have tested everything as a sample, and it works. I used a file of 45K and looked for PAGE 6. Using Hunt and Peck method to be able to examine 3 15K Editors, I found the one occurrence in one minute. Most of the time was spent doing the work the macros will do. There also is a Global FIND & REPLACE that can be used.

There is more than one way to skin this cat. SPA has a file which makes SPA search directories for a specific file. I have not used it yet because in my mind its best use would be in a hard drive. Actually that is not true. 256K

is enough space for that command to be viable. If you have an interest in SPA you already have purchased all our SPA disks and know of the file. For those of you who want a self contained file search work horse SPA has it. Called MENU you can do most operations see all files (subs also) in a directory form. If SPA intimidates you this is the first place I would suggest you go. It gives you the feel of a subdirectory system and a direct intro to MS DOS. SPA, and particulairly the XCART is as I have been told and read is an almost direct copy of MS DOS. Just think, you can sit down to your ATARI and practice MS DOS while working with your ATARI Files. No need to pay those high priced schools.

Speaking of that do not ignore your local adult after dark courses. I took one once and was introduced to APPLE! That was months before I was introduced to ATARI.

Good News! If you are still interested in the FREE COPY of the ATARI CLASICS Magazine I am told you have a good chance. They started with a 600 printing. Now it is a 2,000 1st Ed. printing. Just send in a postcard requesting the magazine. If you promise to take a subscription that will be a noticeable plus. If you include the purchase price chances are better. Best of all worlds is for you to want to subscribe for both the magazine and the three yearly disks. Latest scoop - 11/5/92: 300 mags were given away at the recent WAACE Show (I am not sure it could be WACE or any combination thereof); 800+ have been requested in writing; all in all there are about 250 left. So get on your horse. I know it will cost you time and $0.20

Ben Poehland, Production Manager ATARI CLASSICS
179 Spoul Road/ RTE 352
Frazer, PA 19355

Subscription $25/year 6 issues
Disks $9/year 3 issues
Each disk will cover 4 issues.

EXECUTIVE PROFILES OF ATARI OFFICERS

JACK TRAMIEL, CHAIRMAN OF THE BOARD

Jack Tramiel, a World War II holocaust survivor, immigrated to the United States in 1947. He enlisted in the U.S. Army in 1948 where he learned a trade in typewriter repair. After completing his enlistment, he returned to New York. He continued his office machine repair business and supplemented his income by driving a cab at night. Having an entrepreneurial orientation, he bought a typewriter company in the Bronx, New York with a $25,000 G.I. loan.

In 1955, he relocated to Toronto, Canada and founded Commodore. During the 25 years that followed, Tramiel guided Commodore's growth into a billion dollar corporation. His company was the first to market a hand-held calculator. In 1977, Commodore introduced the first home computer, and is thus regarded as the firm that brought personal computers into the home.

In January 1984, he retired from Commodore. Six months later, Tramiel, together with an experienced management team, purchased Atari from Warner Communications. After approximately two years, the ailing video game manufacturer was transformed into a profitable computer company. Tramiel successfully brought the company public in November 1986. In 1988, Atari became a member of the Fortune 500.

In addition to his business career, Tramiel is actively involved in many humanitarian organizations. He is director of the National Conference of Christians and Jews, the Congressional Human Rights Foundation, and The Jewish Federation. He is involved locally as a member of the Anti-Defamation League's Regional Executive Committee, and is a National Commissioner of the League. Tramiel also serves as

chairman of the High Tech Society, a branch of the Jewish Federation, and is a member of the United States Holocaust Memorial Museum National Campaign Council.

SAM TRAMIEL, PRESIDENT AND CEO

Sam Tramiel has served as president, chief operating officer and a director of Atari Corporation since June 1984 and became Chief Executive Officer in 1988. From 1974 until joining Atari (with exception of the period from 1079 to 1981) Sam Tramiel was employed by Commodore International, Ltd., most recently as vice president, Japan and general manager, Asia. From 1976 to 1977, he served as head of Commodore's Consumer Division from Toronto and as general manager in Hong Kong, London and Santa Clara, California. From 1979 to 1981, Mr. Tramiel operated his own OEM manufacturing business in the Far East. Tramiel graduated with a BA in Economics from York University, Ontario, Canada.

LEONARD TRAMIEL, VICE PRESIDENT OF SOFTWARE DEVELOPMENT

Leonard Tramiel was appointed to his present position in July 1984 following completion of his studies at Columbia University, where he received a doctorate in astrophysics. He completed his undergraduate work at Santa Clara University.

RICHARD MILLER, VICE PRESIDENT OF TECHNOLOGY

Richard Miller joined Atari in 1989 as vice president of technology. In that role, he is the leader of the hardware design team that created the Atari Falcon030.

Richard attended Queen Mary College at the University of London and was previously managing director of Perihelion, Ltd. in the United Kingdom. He was also one of the designers of the Sinclair Z88.

William Rehbock, Technical Director of Software Development, a graduate of the Illinois Institute of Technology (ITT), William Rehbock joined Atari in the summer of 1990 as Director of Application Software. He was responsible for DTP market development. As Technical Director of Software Development, he has been instrumental in the formation of the Professional Systems Group and in developing software for the new Atari Falcon computers.

Prior to Atari, William worked for the Educational Technology Center, and operated his own computer consulting firm.

JAMES GRUNKE, DIRECTOR OF ATARI MUSIC

For the past two years James Grunke has served as Director of Atari Music, in charge of sales and marketing in the U.S. for the music channels. He is also responsible for international music developer support. He brings to Atari a business background in digital sales with companies such as Mission Bay Investments and Delian Music Systems.

His music background includes time spent as a staff synthesist and digital sound engineer with the Beach Boys/Brother Records, specifically contributing to the "Still Cruisin'" album. He has also played keyboards for the Beach Boys on tour. Other bands that James has contributed his keyboard expertise to include Crosby, Stills & Nash, The Band and Michael W. Smith, as well as a number of video soundtracks.

James earned a BS in Keyboard performance from University of Wisconsin and also holds a degree in synthesizer programming from the Grove School in Los Angeles. He is a member of the National Association of Musical Merchants (NAMM) and the Musical Manufacturer's Association (MMA).

A few weeks ago the D.O.M. for September from AIM came, and as usual, I started to make a back-up of it. It wouldn't copy! Using DCFormat, it would copy up to track 45, and then report that there was an error. I then tried to copy it with Fcopy_3, and the same thing happened. I just couldn't believe it. So. I called Unicorn Publications, and they said "send it back" and they would send me a new one.

There I was, stuck for another week or so before I could get to all the goodies on the disk. Just for the heck of it, I tried to extract one of the files, and that went OK. Now what? If the extraction went OK, then the disk should be alright, shouldn't it? Let's try one more thing. Instead of copying from disk A to disk B, let's try copying from B to A. Why, I don't know. But let's try it anyway. And, what do you know, it worked!

It seems that all floppy drives are different! At least the four that I have are different from each other. Not much, maybe, but enough to make a difference. It must have something to do with the travel of drive 'heads' as they move from track to track. If YOU have trouble in copying something, try doing it the other way. It may work for you.

HAVING MONITOR TROUBLE?

In my set-up I have both the Atari SM124 (monochrome) and the SC1224 (color) monitors connected through the Monitor Master by Practical Solutions. This allows me to change from one to the other without having to change the monitor cables.

Some time ago, my mono monitor showed signs of wear. At least the screen began to smear from the top in narrow vertical lines that would come and go. Thinking that it my be because I have recently upgraded to 4 megabytes of memory, the power supply might be overheating. I have a little 6 inch fan that might help keep it cool, so I brought it over to my desk, and gave it a try. Not much help.

The trouble might of course be in the monitor itself, so I shifted over to the color monitor. This time, it showed up as wide horizontal bands that kept scrolling down the screen.

Maybe it wasn't either the power supply, or the monitors. Somewhere I had read that the chips on the circuit board can get loose in their sockets, and you can seat them more firmly by dropping the computer about six inches on to the desk top. You know what? It worked! Apparently, when the extra memory chips were being put is by KBS SYSTEMS in Morris Plains (988 Route 53, (201)292-9677) the chips may have inadvertently been loosened a little bit. So if sometimes YOUR computer screen seems a little flakey, try it out, it might work for you!

GENERAL FEATURE

WHAT IS MULTIMEDIA?
By Andreas Barbiero

Several new terms have been coined lately, and amongst the most common is the buzzword 'multimedia.' There have been some pretty neat ads sponsored by IBM on TV espousing this new 'era' of computing targeted to the lucrative education market. Smiling children point at touchscreen monitor making elephants dance and serious adults talk about how amazing and educational "the fusion of sound and graphics is. I can just see those little kids saying "yeah, whatever lady. . .look what I can make this giraffe do. . ."

Well, maybe that wasn't the best description of multimedia, but at least its more interesting than saying, Multimedia is the integration of sound and graphics into a unified,

interactive presentation in an attempt to represent the immediacy of TV images and the audio impact of a CD player in displaying the visual and audio experiences of a real place, situation, or object. For instance the software would allow you to hear the music of Mozart while watching a video clip from the movie 'Amadeus,' and reading a historical account of his life. Being able to point at a country on a map of the world and getting the name, stats, and hearing the national anthem is a fusion of several separate computer operations, and possibly even educational.

You may have noticed that the term keeps getting larger as I go along, and really, multimedia has yet to be fully defined and standardized. The hardware, as well as software, varies from system to system and varies according to whom you talk to, or try to buy a computer from. Mostly, when you see a system touted as multimedia it includes items like a CD-ROM and high resolution monitor, a soundcard and speakers. DOS, as in most applications, is completely useless here, so Windows is considered standard for a PC based multimedia system. Unfortunately for the PC user Windows still has some major bugs and is really just a shell. Intercommunication between multitasked operations is not possible. The system requirements for working Windows into viable operation is a hidden cost in purchasing a computer. High speed graphics boards are needed, as well as a powerful CPU. Costs of such a beast are relative to how hip you want to be. A basic system can range from $1399 to well over $3000. The CD-ROM unit is central to this type of system, and with the narrow profit margins of PC's these days, more and more dealers are trying to popularize this path as the way to reinstill excitement in Intel based computers and consequently garner more sales. CD-ROMs are in the process of becoming a mature product, are relatively inexpensive, and software for them is becoming more available and cheaper, but like a lot of other consumer products, the CDROM may not

standardize fast enough before something better comes along. With the popularity of CDs in the audio business, such things as Laserdiscs are making a comeback from the sluggish growth experienced in the early 80s. Interactive CDs have been slow to catch on, and the advent of CD-ROM units for the profitable game console units has been pending now for several years. Without a standard, the market can only suffer. Writable optical disks live in the rarified price ranges in upscale computer magazines, but they ARE available for under $2000, and with storage in the gigabyte range, they are almost worth the prices they command. Kodak is making a big step into the digital field with their Photo CD technology. Taking CD-I a step further, they are allowing people to preserve their photographs, a hundred at a time, on a single CD and play them back on a TV or computer. This is an excellent method of bringing this technology to the public in a way that is interesting, obtainable, and usable to the common person.

Breaking down the barriers between technology and its applications in going to be the next big step with computers. A multimedia system is going to have to breach this barrier. A computer packaged with the right hardware and software built in and priced correctly could make inroads into households which would not normally buy a computer. It would be like an appliance. People don't want to open their TVs and stereos to add cards or learn what an AUTOEXEC.BAT file is, they want something to fit on their TV cart and just simply work. The REALLY interesting side to this is, once it is IN their homes, and they suddenly realize they are comfortable with it, other purchases become possible. Game software at first, probably, but then comes business and professional software.

Common home computers just don't fit the bill. Yes they are affordable, but are they as indespensible to the average household as a VCR or a

answering machine? Not yet. THIS is what multimedia can do for us. All this sounds very interesting, but is it practical with today's PC? There is now a decent library of CDs available, covering all topics of interest, from business cross-references to disks full of GIFs. Faster processors allow the combination of 16bit sound and graphics, which are more than sufficient for the average user not expecting to use a Silicon Graphics professional graphics workstation.

Virtual Reality will take some time before it comes really practial, and able to simulate a human, or even a chair. (despite the ignorant ramblings of the 'post modern cyber-' community) The most advanced 80486 would be taxed to its limits to handle even part of what is needed for Virtual Reality, never mind the data crunching needed for display a symphony with accompanying audio and information. Thats why there are $1000 speaker/CDROM units, and a plethora of cards for music, advanced graphics, and even TV tuners. All these are hardware options rather than software options. The basic computer needs the ability to run a modem, digitize music, manipulate video data from hardware designed into a high speed bus, without the need for a lot of extra hardware. There should be no need for a card to run a modem, and another card for a printer port, and ANOTHER to listen to music. All this should be built in and at the discretion of the software used.

While many have grumbled about the lack of effective CDROM drivers from Atari, ICD has taken the MetaDOS driver and updated it. Available this month is the LINK, a SCSI host adaptor for the rest of us who aren't lucky enough to own a TT or Mac with a built in SCSI port. Drivers are available to use just ab out every optical, floptical, and any other SCSI storage device available today, including the ability to read PC CDROMs. Music and graphics has always been a strong point for Atari. With the universal MIDI interfaces on our beloved machines, and

the excellent DMA STe stereo audio, we can still laugh at all those PC cards advertized to play digital sound. The non-EISA bus PCs just can't keep up with DMA driven audio, when you look close at the specifications, only a couple are capable of sample rates above 22kHz. A far cry from the 50kHz available on the average STe selling for about $350. So far an inexpensive Mega STe at $850 is keeping up pretty well. Already we have added in a bunch of 'options' on a PC, and not bought anything else but a SCSI interface on the Atari.

All goes well until the spectre of MULTITASKING rears its ugly head. No-one who has used it can say that Windows is an effective multitasking environment. System 7 on the Mac has a lot of the same bugs as Windows and is just as piggy, although it IS a real operating system and already based on a graphic user interface. OS/2 applications have just started to ship, with about a thousand available today. That makes the ST software market look absolutely huge! OS/2 2.0 is a much more mature product than was available at first, and purportedly handles multitasking MUCH more efficiently than Windows. But it is just as greedy with the system as the other programs. Atari users have been waiting for MultiTOS just as avidly as they have been waiting for FSM GDOS. From all sources it appears that M-TOS is going to be a versatile and well designed product capable of handling the power of 32bit processors. And it is available with the Falcon030, sooner than Windows NT or the new OS/2 is available for the PC. Atari already has a more than decent GUI that doesn't weigh upon the computer like some other programs. An Atari needs at least 4 megs of memory to multitask well, and I have seen PC users require up to 8 megs just to get Windows running, before the applications are added in! So, now we have defined what at minimum is needed to work a multimedia system on a system affordable by an individual. And as far as purchasing a system, at list prices, Atari grabs the top of the

heap. The Falcon 030, Atari's new entry level machine is equipped with enough power to manipulate video images and 16bit stereo sound better than most other systems around. With the correct software, any sort of video or audio manipulation is possible. From a simple playback of a MOD file, to having a full 8 track digital recording studio, the Falcon is designed to handle these tasks at a minimum of processor overhead and without the need for 'optional' hardware linked through a bottleneck bus. Super VGA is nice, but at anything above 256 colors, it gets monstrous on memory requirements. A 640 X 400 True color mode (not including overscan modes) is simply awesome.

And then there is the DSP, this chip can grab video images and crunch them faster than most video capture boards made. Making that videophone computer available with the right software, and a cheap camera, right out of the box! The 68030 driven DSP should be able to outperform QuickTime video easily. Lexicor should be able to do this, and if they create a standard, compatable with playback of QuickTime video, they will be on top of the heap with video manipulation as well as animation software! This is what is needed. The PC architecture of adding cards to fill the newer needs of the user, while a great idea, is now being limited by the very bus it depends on to run the cards. If you compare what a MSTe or TT has in the way of built in ports, only one expansion port is REALLY needed.

I would prefer to see in the future an Atari with the processor direct connector again, and a fuller implementation of the VME, or a design in the motherboard for custom graphics expansion. All the Multimedia hardware hooks into the PC bus somehow. Music cards have SCSI interfaces, and video cards are locked into the 10MHz, 16 bit bus of the standard PC.

While an ST can handle enough of these functions to do an acceptable job, to be honest, newer machines are needed. 030 boards and graphics cards are available for just about every machine, but for an entry price around $799 the Falcon can outperform on price any similar upgrade available for older Ataris and PCs alike. This is not to say an older ST is completely left out, there are addons to allow up to 16 megs on a ST, and even more options available through the 030 speedup boards. The Falcon 030 is the start of a new type of computer. The sense of discovery I experienced in 1980 with my Atari 800 is gone, but replaced with the excitement of being able to outperform the graphics workstation of those days with a computer capable of sitting on my stereo cabinet, as well as performing admirably on-stage as a MIDI/SIMPTE engine for a professional rock band. As long as we get MetaDOS drivers, MultiTOS, and inexpensive memory for our machines, Multimedia won't be synonmous with IBM, but instead we will have an affordable, usable system based on a present, or future incarnation of Atari's new Falcon.

Delphi: ABARBIERO   F-NET Andreas Barbiero

NOTE: The above article was downloaded from the Atari Explorer Online file (AEO_9217) on the JACG BBS(201)690-5224 after I had written the ST VP November Article. I think this makes an excellent supplement to my exposition. so here it is. John H. Dean, ST VP

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8 - BIT FEATURE

BACK TO THE BEGINNING
CONFUSION WITH THE FUTURE
By Phil Greenhut, JACG
(with comments by Dave Arlington)

When I look at DOS and type 'A', RETURN, RETURN, I get a directory with 707 sectors on a single density disk. As I add files each file is listed in sectors and gradually reduces the 707 sectors to zero.

When I load Sparta Dos X and go to **MENU** I find file sizes up to six digits.

When I use Word Magic at the Bottom of the screeen as I type it says **ROOM LEFT** 24,209 SECTORS which research shows is really 24,320 sectors which reduce as I type on Word Magic. (**EDITOR'S NOTE:** Although I have never used Word Magic and cannot comment on whether the word 'SECTORS' is actually used at the bottom of the screen or not, in reality, the meaning here, as will be demonstrated later in this commentary, is that in reality, there are 24,209 **BYTES** of free space left in Word Magic at boot up time. SECTORS is a totally inappropriate term here in terms of usage. Plus, if one thinks about it, on a standard word processing program that does not use any extra memory like Word Magic, after loading the program, having about 24K of work space is an entriely normal expectation.)

After ten years I decided to see if I could figure out what this all means and see if I can make any sense for the non technical user from one to the another.

Some basics that I think apply to this:

1. 1024 bytes = 1K (TRUE, D.A.)

2. File size in DOS is the number of 128-character blocks that a file uses. Therefore there are 707 sectors of 128 character blocks on a single sided disk.

(**EDITOR'S NOTE:** Not exactly true here. On a single sided, single density Atari formatted disk, there are actually 720 sectors of 128 bytes each on a disk. 13 sectors are eaten up right away by the three BOOT sectors and the ten sectors allocated to the VTOC (Volume Table of Contents, or in layman's terms, your disk directory). This amounts to 90K of disk storage per side. On a single sided, *enhanced*

density Atari formatted disk there are 1010 sectors of 128 bytes apiece. This is about 127K of disk storage per side. A single sided, *double density* Atari formatted disk holds 720 sectors of 256 bytes apiece. This is 180K of disk storage per side. And finally, a *double sided, double density* Atari formatted disk [which currently is only available on the Atari XF551 disk drive] holds 1440 sectors of 256 bytes apiece for 360K of disk storage for both sides at the same time.)

3. Each BYTE of memory contains eight BITS give 707 sectors on a single density disk sectors or 707,000 usable BITS on every diskette.

(**EDITOR'S NOTE:** I do not know where Phil got the math on this one, but the number is actually closer to 724,000 BITS on a disk that are usable, but in any case, it is still better to keep terms in terms of BYTES which would be about 90,000 BYTES which equals approximately 90K as mentioned above.)

First on Word Magic I can make a file 24320 sectors long. (Again though, this word should really be BYTES and not SECTORS. D.A.) This translates if I used all available memory into 190 sectors for the largest file possible. (This is true, 24320 BYTES occupy 190 Sectors of disk storage. D.A.) I also found that if I type a little then I carriage return thru to 0 sectors (BYTES) that when I save to disk I have used far less than 190 sectors. (My best educated guess on why this occurs, not having used Word Magic, is that somehow internally, it counts lines [demarked by carriage returns] to determine how much memory you have used, rather than actual characters typed. However, when Phil goes to save, only the actual characters get saved, taking up far less space than the estimated amount by the program. PaperClip sort of works the same way, only telling the number of lines left available rather than number of bytes. D.A.)

A little diagram will help maybe:

	Bytes	Sectors	Block
1.File 1	128	1	128
2.File 2	256	2	128
3.File 3	1152	9	128
4.File 4	2048	16	128
6.File 5	5760	45	128
7.File 6	24320	190	128
Disk Total Used on disk	33664	263	128
Total Not Used	56832	444	128
TOTAL ON DISK	90496	707	128

On Sparta Dos X it would appear that at times three zeros are added to the sectors. (EDITOR'S NOTES: Atari DOS and Sparta Dos just use different ways of measuring the same things. Atari DOS measures all file sizes and free space remaining in units of 128 BYTE sectors. Sparta Dos measures all file sizes and free space remaining in units of BYTES. If you look at Phil's chart above, Sparta Dos measurements are in Column One and Atari DOS measurements are in Column Two.)

If any of you have any comments on this I would like to hear them. (DONE! D.A.)

Some of this information was obtained from "Your Atari Computer" by Ion Poole published by Osborne/McGraw-Hill 1982 which is an excellent reference guide to Atari Computers. Additional information was obtained from "Atari Basic" by Carl M. Evans published by JIG 1983 which has easy to read error codes and is another outstanding publication. (I agree with both these recommendations! D.A.)

USE WORD MAGIC

SAVE THE DOLLAR BILL

SAVE ATARI

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8 - BIT FEATURE

8-BIT DISASTER AVERTED
by Joseph E. Hicswa

One advantage of owning and using an ATARI 130XE 8-bit computer is that it has a RAMDISK.

A RAMDISK is LIKE an internal disk drive in a computer except that all files are saved in the computer's extra memory rather than physically on a disk. The disadvantage is when computer is closed down; RAMDISK files are lost unless they were DOS copied to an actual physical disk, SAVEd or LISTed to Tape, Floppy, or Hard drive.

This article is about the advantage of the advantage of a RAMDISK.

I heard, (probably misheard) that when a SAVEd BASIC language file is DELETED (DOS D), it is immediately restored by using wildcard "*": LOAD "D:*". (EDITOR'S NOTE: A BIG WARNING to all!! DELETEing a file means just that, you have DELETEd it. As in gone, good-bye, sayonara! The only way to get it back is if you use a special disk utility program before any other programs were saved over any sectors used by that file. SECONDLY, typing LOAD "D:* from BASIC, or using the LOAD command at all, only READs from the disk. The LOAD command never writes to the disk to undelete a file, nor can the LOAD command read deleted files. I cannot understand where Joe could have heard this information, seeing as I have been around Atari computers for 12 years now and NEVER heard anything close to that in a million talks, books, magazine, or demos. My opinion is that everyone should always think twice about trying ANY kind of experiment that involves DELETing

files, or modifying DISKS. And get second opinions, confirm your guesses unless you work only with scratch disks where you do not care for the contents of the disk.)

"Ah haaa something new!", I gloated.

Anxiously and hastily I dashed home to experiment. Quickly my TV monitor and drive were switched on. When red busy light went out, a DOS disk was inserted into drive, door closed, and computer switch flipped. I was impatient for my BOOTUP to complete. At READY prompt, I typed DOS; its MENU was displayed on screen. "A" listed all the files on the disk. I chose a FILENAME; wrote it on paper to not forget it; pressed DOS D (Delete), typed in the Filename and pressed RETURN followed by Y when computer asked if I was sure. I WAS!

The whirring stopped, the directory displayed. Yep, the file was no longer there. It was deleted! DOS B (Return to Basic) gave me control of the computer.

"Now!", thought I glowingly, "I'll be able to demo this at a meeting."

LOAD "D:*" was typed and followed by RETURN. I crossed my arms, sat back and watched the screen intently.

There on the screen was:
ERROR 170 (FILE NOT FOUND).

"What happened?" shouted my surprised and disappointed mind. "The file is lost. What shall I do now". This is the way it might have happened were it not for the 130XE ramdisk.

At original boot up, a file was copied from disk in drive 1 to Ramdisk D8:. The ramdisk D8:filename was deleted not my file on the disk. (EDITOR'S NOTE: Not surprising actually since if the file WAS on the RAMDISK, the command should have been LOAD "D8: LOAD "D: defaults to looking on Drive One for the file.) The experiment

failed. My program was still intact on floppy disk in drive 1. How about that.

I hope readers unaware of disasters have learned a lesson. Perhaps they have something to share with us—a disaster they encountered or averted.

GENERAL FEATURE

ULTIMA ADVENTURES: ULTIMA III:EXODUS
by Dave Arlington, JACG

Welcome back to the third in a series of hints and tips to one of computer gaming's most popular series of games, the Ultima series of role-playing games, available for both 8 and 16 bit Ataris. Like before, this article is intended as a guide and not as a walk through.

In Ultima I, you were dispatced to the land of Sosaria to rescue its peoples from the evil Wizard Mondain. In Ultima II (covered last month), Mondain's apprentice, Minax, came to Earth to seek her revenge on you. Now we come to Ultima III: EXODUS. It seems that in between world conquering, Mondain and Minax had time for a few recreational pursuits as a new threat, rumored to be the offspring of Mondain and Minax, has arisen back on Sosaria. Once again, you are called forth by Lord British to travel to the land of Sosaria to dispatch this latest, toughest menace yet.

Sosaria has changed quite a bit from back when you visted in Ultima I. The powerful sorcerous forces unleashed by Mondain and Minax have altered the geography quite a bit. Instead of four continents, there is now one giant continent surrounded by some islands. The eight castles and Kings are gone to be replaced by the unifying rule of only Lord British. There are all sorts of terrain from the other two Ultimas plus the additions of such things as boiling lava and deep forest.

There are ten cities in addition

to Lord British's castle, some easily reached, a couple on islands, one hidden in a forest, one ringed in by moutains, and one special city that is very difficult to find since it is not even there most of the time! There are seven dungeons to visit, and unlike Ultima II, some are ESSENTIAL to your quest, and unlike Ultima I, each dungeon is unique and has it's own unique 'flavor'.

The good news is that starting with this Ultima, you do not have to travel into space any more, and no more time travelling either. However, replacing the TIME DOORS of Ultima II are the MOON GATES of Ultima III and on. Moon gates being a lot like the transporters in Star Trek as they teleport you from place to place. Some of them are a pain to find and they are a pain to map. (Seeing as they are tied into the phases of the moon for where they take you, be sure to write down the phases of the moon each time you step through one along with the destination.) Each gate can go up to three different destinations depending on the phases of the moons, but as some places cannot be reached EXCEPT by Moon Gate, you better learn how to use them.

Unlike the first two Ultimas where you had to venture all alone on your quests, Ultima III allows you three other travelling companions and so your first tough choice is what type of party to create. And it can be tough. There are now 5 races (Human, Elf, Dwarf, Bobbit, and Fuzzy), 3 sexes (the usual two plus Other!), and 11 occupations! (Fighter, Cleric, Wizard, Thief, Paladin, Barbarian, Lark, Illusionist, Druid, Alchemist, and Ranger! Whew!) For the non mathematically inclined, that means each character can be one of 165 combinations! and when you can have up to four party members, the choices can be staggering. Some, of course, make NO sense as choices. For example, Fuzzies with a maximum strength of 25 would not make good choices for fighters. Rather, their maximum Intelligence of 99 makes them possibles for spell casting jobs

like Wizards, Larks, or Alchemists.

My reccomendations are as follows: Your party should be a Dwarf Fighter, an Elven Thief, a Bobbit Cleric, and a Fuzzy Wizard. Clerics and Wizards aren't so hot as fighters at the start and will gain experience slowly at the start, however, they are the only two character occupations that can cast the mega-multiple KILL spells that you will find so useful late in the game. And unlike Ultima II, MAGIC is VERY important and useful in this game and can be used anywhere. Clerics are good at the start for their healing powers at least, and Wizards help when fighting the multitude of Orcs, Goblins, and Trolls you run into at the beginning of the game.

Here is a big, big tip to help get started since you usually are low on money and food to start. Create your party of four as outlined above and then create three other bogus characters (doesn't even matter what kind they are). Make up a party of one of your 'normal' guys or gals and the three bogus characters. Right away, have the bogus characters hand over all their money, food, weapons and armor to the regular party member and then save the game. Reboot the game, delete the bogus characters and do it again as many times as you wish. When you finally put your 'real' party into thee game, go into the town nearby (Britain) and sell the extra stuff (weapons and armor) for more money. Do this until you can buy Bows for the fighter and thief and 20 daggers apiece for the Cleric and the Wizard. Have the Wizard put on his Cloth armor and buy Leather armor for the other three. This should get you into a good start without getting wiped out five seconds into the game. You can buy better armor, weapons, and more daggers for the wizard and cleric later on when you have some working capital.

As you walk around, you will notice one other new feature about this Ultima, realistic line of sight. That is, unlike before when you could see

the whole map at the same time, now you can only see what you can see with your eyes from where you are. What that means is that you cannot see through walls, you cannot see into deep forest, or through mountains. This feature is used to great effect to hide all sorts of places and people you need to find, so take time to explore every area very carefully, especially behind buildings, and in thick forests.

And finding people is very important. Unlike Ultima II, where the clues people had were very vague, the clues in Ultima III, are much better IF you can find them. Look for and talk to everyone. A good rule of thumb is that if the person is standing still and not walking around, they have some important information you need. Finding them is the trick sometimes. Look everywhere and visit every town and castle, even the town that appears and disappears! Some people and places will be behind locked doors and you will need keys. Keys are bought in Ultima III, NOT obtained from guards. Only certain towns sell keys though, along with torches you need for dungeons, powders you can use to negate time and get away from tough monsters, and really, really importantly gems that you can use to get a bird's eye view of the whole country, the whole town, or the whole level of a dungeon. These come really in handy. You can buy horses in a couple towns and these are good to outrun monsters with.

Visit Lord British in his Castle often as he will raise your level and your maximum hit points if you have enough experience points. After a certain time though, he will stop giving out more hit points until you embark on your first dungeon quest to get the item he tells you about. He tells you about the first of four items you need from the dungeons. More on dungeons in a bit.

First, about combat, the way to build up your experience. The comabt system is all new in Ultima III. When you encounter monsters now, the screen

expands to a close up view of a tactical battle screen showing the party of monsters at the top and your party at the bottom. Now is when you find out why I told you to give your party bows and daggers. Becuase you can stand back from the monsters and shoot arrows at them while they try to get close or throw daggers at them. Arrows are in inexhaustible supply for your bow, but daggers must be replenished. Your wizard and sometimes your Cleric (if the monsters are undead) can also toss spells at the monsters from far away. Only the member of the party that actually delivers the killing swipe gets the experience for the kill.

You should undertake your quest in stages. First, wander around close to the castle and town of Britain, beating up monsters, and visiting the King and saving up money. Secondly, start going around to explore and look for the other towns you can find or see from shore. You can reach the towns on islands by winning a battle with pirates which gives you their ship to use. When parking your ship early on, park it inland in a river tributary, so the wandering whirlpool does not destroy it when you are not on it. So anyway, visit all the towns and write down all the clues you find. Buy some keys, torches, and gems when you find them and go back and explore any places that were locked to you before.

Maybe you see treasure chests behind the counters in many stores? When your thief's experience goes up enough, she can try stealing from behind the counters, a nice easy way to gain gold as long as you do not overdo it. After exploring all the towns and getting clues and getting up to level 5 or so, it is time to start venturing into the Dungeons. Take torches to see and gems so you can map each level easily. The first dungeon to try your luck in is the Pernian Depths to the north and the east of Castle British. You can fulfill Lord British's quest right on Level One and find one of the four things you need.

South of Castle British is the Dungeon of Fire where you can get two more pieces of what you need at the bottom level of the dungeon. But even better is the top two levels where you can get many treasure chests and visit two fountains on Level Two, one which cures you of posion and the other which restores your hit points to their maximum. Even after retrieving the two needed items from Level 8, you will still spend plenty of time here, collecting gold and healing yourselves. On an island nearby is Snake Dungeon where you can find the fourth and final piece you need for your quest of the items found in Dungeons. You must also visit the Dungeon of the Time Lord and find this fellow, to get one of the most important clues in the entire game. Be sure to check out Level Four and Five in the Time Lord Dungeon if you like lots of gold!! Getting to it is the only tricky part!!

After doing all your dungeon questing, you will have heard of a magical land that can only be visited by boat in a very special way. This magical land has four more very important items you need plus the only places in all of Ultima III where you can increase your Strength, Dexterity, Wisdom, and Intelligence scores. Since all these scores determine how well you do various things, like fight, steal, and cast spells, you will come here often once you find this place. Make sure you bring plenty of gold and gems and keys or you may never get back!!! And since you cannot save your game while you are here, you do not want this to happen!

The second to last part you need to complete is to find the special weapons and armor that the townspeople told you about. They are located on little islands and clues you have gotten will tell you how to retrieve them. At the same time, work on building your stats to thier highest, especially your levels and hit points up to their max of 2550.

Okay! Once you have all four

dungeon items, the big Clue from the Time Lord, the four magical land items, all your hit points, stat points at their maximum and outfitted in the special arms and armor, THEN you are ready to go take on Exodus! And his true nature will be a surprise to you if you can find your way through his heavily guarded castle of Evil where the most hideous, toughest monsters lurk at every turn and even the very floor rises up to attack you!!! Fortunately, Exodus himself is a bit of a cream puff compared to what you go through to get to him. As long as you listened to the Time Lord, that is!

This game was much more complex, more involved, and much more fun than the first two, and so far from what I have seen of Ultima IV, that one promises to top them all! See you next month to see if I finish it in time to write the next article!!

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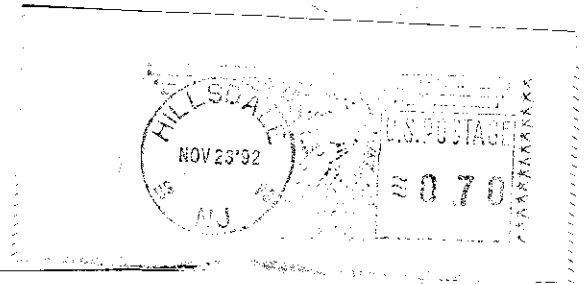07060

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