The History of Page Pro 99
By Chris Bobbitt

Since its introduction Page Pro 99 has become one of the most popular graphics programs for the TI-99/4A. This is an ironic turn of events considering it became a page layout program almost by accident.

In 1986 there were only two general purpose page-layout programs available for the TI-99/4A - The Printer's Apprentice from McCann Software and Font Writer II from Asgard Software. The best way to describe both of them was "intimidating". When Ed Johnson and I began working on what would later become known as Page Pro 99, we had no intention of competing with either program. the actual genesis of Page Pro was a little program called "FormAtter", or alternately, "Form Maker".

In part based on Font Writer II, the program was modeled on it and the Formatter include with TI Writer. The purpose of it was to allow you to draw forms on the screens. Because it used a special character set it was closer to "What-you-see-is-what-you-get" then anything else available at the time. A user of the program would draw lines and boxes and type text in TI-Writer. The resulting form would then be run through the formatter that was the heart of the program -which would print out the file. It allowed one font size (8 x 16), which resulted in 48 lines of text on a page.

While by today's standards the results were primitive, the suggested possibilities really piqued our imagination. After I showed the program to Ed we came up with a laundry list of things we thought it should do to allow you to create nice forms (remember, the program started out as "Form Maker"). The first thing that had to go was the font format - we needed fonts of 8 x 12 to result in 66 lines on the page. Another thing at the top of the list was to somehow integrate the editor with the formatter, and finally, to explore the possibility of including a picture or two (the idea being that it would be nice to add a logo to a form).

At the same time Ed was experimenting with Form Maker he was deeply involved with bringing together the Desktop Publisher cartridge by Databiotics. The original programmers for the program had quit for unspecified reasons, and Databiotics offered the contract to complete it to us. While the end results were less then desirable, and our experience with dealing with Databiotics on a business basis even less so, the project taught Ed a lot about mixing text and graphics on the same page.

In Desktop Publisher the user would enter text in an Editor, draw a picture in a miniature version of TI-Artist (written by Chris Faherty, and the only really functioning bit of code provided to us by Databiotics), and then place the picture somewhere in the text. When printing out the results the program would print the text in the default font of your printer, and through some dramatic printer gymnastics, would also place the picture in the text. It worked well but the results were pretty primitive (for one thing, the pictures were tiny on the page because the picture size was limited to even less then a full TI screen). The fact that he was able to do even

that was miraculous considering what he started with.

Ed's experience with Desktop Publisher convinced us that the best way to mix text and graphics on a screen is if the printer treated both the same way - as graphics images. It also was living proof (if we had needed any) that the current picture formats for the 99/4A were completely inadequate for desktop publishing - without enlarging a picture it would be too small on the page to be useful. This was a shortcoming that was also shared by The Printer's Apprentice and Font Writer II.

The experience with Desktop Publisher left Ed and I both with a bad taste in our mouth - for both business and technical reasons. He was determined to produce a useful page layout program, from scratch, that didn't have the limitations of the Databiotics product.

Starting over from scratch, and with our multiple experiences fresh in mind, over the next 6 months or so the program quickly evolved. The first problem Ed solved was the user interface - how to represent text and line characters on the screen in a bitmap format in an 8x12 character size commensurate with the dimensions of a page. At that time (and to today) the only programs that could do this were drawing programs - and none of them were capable of representing an entire page at once.

Complicating things, the 99/4A' 5 video processor was designed to address data in 8x8 pixel chunks, and writing everything to the screen in the larger size was a technical challenge. Partly on my insistence (and with no disagreement from Ed), what evolved was a clean interface along the lines of TI-Writer - with a subset of the same keyboard commands and text entry features.

At the core of the user interface, and the first major conceptual leap of Page Pro 99, was the idea of representing the page as a collection of references and not as a bitmap. Instead of keeping the entire page in memory at once, Page Pro instead stores a list of what is at each location on the page (a font character or a piece of a picture).

This way of representing a page grew out of the need to find a way around the memory limitations of the 99/4A - at the printer resolution we chose for Page Pro 99 a page contains over 64K of data. Since the 99/4A can't possibly store so much data in RAM, there was no way for Page Pro to work unless it had some sort of shorthand code it could use to represent the page - sort of "fake" the computer into thinking it had more memory then it did. The resulting code system is the greatest strength, and limitation, of Page Pro. It is this code that made Page Pro 99 the first graphics program for the 99/4A that could represent an entire page in a "what-you-see-is-what-you-get" format.

The next concept explored was how to represent more then one font on the screen. While memory was available to store more then one font representation - recreating the letters of the font involved extending our shorthand coding system to deal with multiple fonts of different sizes, and extending the screen drawing routines to draw characters of several sizes. Saving and loading fonts turned out to be simple using the coding system, but creating fonts in the first place wasn't. The first Page Pro font (and the one originally shipped with Page Pro 99 version 1.0) was simply a stretched version of the default 99/4A text font.

The final major revision of the coding system came was made after exploring the idea of placing a picture on the screen. Based on my observations about pictures and desktop publishing, Ed had a flash of insight that was the second major conceptual leap in Page Pro. Ed devised a file format that would allow pictures of virtually any size, and allow the program to grab just a portion of the picture it needed - the first relatively accessible picture format on the 99/4A. The coding system had 32 slots free for picture codes, so the code was extended to allow up to 32 pictures.

At this point the basic program (minus all of the refinements that appeared in subsequent versions -such as clipping, disk cataloging, etc.) was virtually complete. This is also when Page Pro underwent an identity crisis. What Ed and I created was clearly more then a program for designing forms, but it wasn't a drawing program, and didn't have the font capabilities that we considering necessary for true desktop publishing.

At the same time, it was clear that in order for the program to succeed, it needed the ability to use artwork in what was then THE standard for TI graphics files - TI-Artist. Ed then wrote utilities to do crude conversion of TI-Artist fonts and instances into Page Pro 99 format, and I added a text columnizing routine that exploited Page Pro's ability to import text.

At this point we decided that what we had on our hands was in a new software category as far as the TI-99/4A was concerned - we had created the first page layout program. A friend of Ed's suggested we call it Page Pro 99 - and since no one could think of anything better, that was what we called it. Page Pro 99 version 1.0 was formally released in late June, 1988.

Even though Ed and I were trepiditious about the kind of response it would have, it almost immediately became a success. Despite the fact it was released in the middle of summer (a time that is notoriously bad for releasing new software), it immediately began selling very well. Over the last 4 years it has become, partly by accident and partly because of our efforts to expand the capabilities of the program internally and with additional utilities, the de facto standard for desktop publishing on the 99/4A. Even so long after its release the program continues to sell well, which in itself is a testament to the utility and versatility of the program.

Last year Ed decided that for his career he was going to have to focus more on programming for the PC, so he left the TI community for good. However, Page Pro 99 lives on.

In the last year we have released 3 major new utilities for the program: Gofer, which is a package containing vastly improved versions of all of the utilities included with Page Pro 99, plus a number of other useful little utilities such as a PCX to Page Pro 99 converter; Clipix, which is a utility to allow you to clip any portion of a Page Pro 99 picture of any size; and Page Composer, which allows you to create up to 999-page documents in portrait or landscape, where pages can be any of 3 different printer resolutions, and place up to 30 pictures per page.

Further, a major revision to Page Pro 99 itself is planned, and work continues on other new enhancement programs. From the very start, and for the foreseeable future, Page Pro 99 is a "work in progress".

```
100 REM ECHO TI BASIC
110 REM FROM PROGRAMS FOR TH
E HOME COMPUTER
120 REM COPYRIGHT (C) 1983 B
Y STEVE DAVIS
130 RANDOMIZE
140 DEF A=INT((90-65+1)*RND)
+65
150 DEF F=10*A+110
160 DEF R=INT((22-3+1)*RND)+
3
170 DEF C=INT((26-5+1)*RND)+
5
180 H=40000
190 CALL CLEAR
200 FOR I=3 TO 21
210 PRINT TAB(I);"ECHO"
220 CALL SOUND(-50,300,V)
230 CALL SOUND(-50,250,V)
240 V=V+1
250 NEXT I
260 FOR DELAY=1 TO 150
270 NEXT DELAY
280 INPUT "INSTRUCTIONS? (Y/
N):":Y$
290 IF Y$<>"Y" THEN 340
300 PRINT :"THE COMPUTER WIL
L FLASH A":"SERIES OF LETTER
S ON THE":"SCREEN. YOU MUST
'ECHO' THEM"
310 PRINT :"BACK IN ORDER BY
 PRESSING":"THE KEYS FOR THO
SE LETTERS":"AS QUICKLY AS P
OSSIBLE."
320 PRINT :"DIFFICULTY INCRE
ASES THE":"LONGER YOU PLAY.
THE FASTER":"YOU RESPOND, TH
E BETTER YOUR"
330 PRINT :"SCORE. GAME IS O
VER WHEN YOU":"MAKE 3 MISTAK
ES." ::
340 PRINT "ENTER LEVEL OF DI
FFICULTY:":"1 - LOW":"2 - HI
GH"
350 INPUT L
360 PRINT :"PRESS ANY KEY TO
 START"
370 CALL KEY(0,KEY,STATUS)
380 IF STATUS=0 THEN 370
390 CALL CLEAR
400 X=1
410 A$=""
420 FOR I=1 TO X*L
430 Z=A
440 CALL HCHAR(R,C,Z)
450 CALL SOUND(500/L,F,0)
460 CALL SOUND(1,H,30)
470 CALL CLEAR
480 A$=A$&CHR$(Z)
490 NEXT I
500 FOR P=1 TO LEN(A$)
510 CALL KEY(0,KEY,STATUS)
520 T=T+1
530 IF STATUS=0 THEN 510
540 PRINT CHR$(KEY)
550 IF KEY=ASC(SEG$(A$,P,1))
THEN 600
560 PRINT "NO, IT WAS ";A$
570 M=M+1
580 IF M>=3 THEN 680
590 GO TO 630
600 NEXT P
610 PRINT "THAT'S RIGHT"
620 X=X+1
630 FOR DELAY=1 TO 400
640 NEXT DELAY
650 CALL CLEAR
660 GOTO 410
670 CALL SOUND(100,110,0)
680 PRINT :"GAME OVER. AT LE
VEL";L;"."
690 PRINT :"OUT OF";X+2;"SER
IES,":"YOU GOT";X-1;"RIGHT"
700 PRINT :"YOU USED";T;"TIM
E UNITS"
710 PRINT :"SCORE LEVELS:":"
OVER 400 = SUPERIOR":" 150-4
00 = AVERAGE":" UNDER 150 =
SLOW"
720 S=(1000/T)*(X+2)*10
730 PRINT :"YOUR SCORE IS";I
NT(S+1)
740 M=0
750 X=0
760 T=0
770 PRINT :"PLAY AGAIN? (Y/N
):"
780 INPUT Y$
790 IF Y$="Y" THEN 340
800 END
```

ECHO
This TI BASIC game challenges your visual recognition and memory skills. A series of letters is flashed at various locations on the screen. You must "echo" them back to the computer in the proper order. But don't waste time! The faster you respond, the better your score. It might sound simple, but you may think differently after you select the high level of difficulty. If you make three mistakes, the game ends. As your score increases, you may want to adjust the average scores displayed in line 710.

(An excellent first person article by a well-known prolific writer... Reprinted from Vast Times July,1992)

Chris' Corner

Why the TI?
part one

Almost a decade after Texas Instruments announced plans to cease production of the TI-99/4A™ Home Computer, hereafter referred to as the TI, the computer still enjoys a loyal group of supporters. Why? I am sure there are a variety of reasons. I would like to share with you why I still enjoy working with the computer.

I, like hundreds of thousands of consumers, purchased the TI hoping the features it advertised would enable me to fully utilize the computer. However, after I had spent thousands of dollars, Texas Instruments pulled the plug, and I was left with seemingly useless equipment. I initially bought the computer to help me in my language studies. Texas Instruments' decision to cease production of the computer did not change that plan, it merely delayed it. With perseverance, I decided to pursue my original plan to use the computer in my language studies. I realized that to do so required learning as much as I could about computers in general and the TI in particular. I read everything I could about computers and began to form detailed opinions about what a computer could and could not do for me. Now I was ready.

First, I would like to share some things that many of you may or may not know about the TI. When the TI was introduced, it was billed as a 16 bit computer with 16K of memory offering high resolution graphics, polyphony sound and high quality speech. With these features it seemed that the TI should have dominated the new home computer market. It did for a while, but it soon became apparent that the features offered were seldom exploited. Therefore, the features were practically useless. Furthermore, to access any of these features required expensive cartridges and/or peripherals and guarded information about the TI which Texas Instruments seemed reluctant to release.

Despite the fact that the TI was the first mass produced true sixteen bit computer on the market, its power was severely restricted. Instead of using a sixteen bit data bus, the computer used only eight bits. The sixteen kilobytes of memory advertised referred to video memory, which is not directly addressable by the central processing unit. The computer only had 256 BYTES! Yes, that's right 256 bytes in which to write programmes. The 16K of memory was used for mass storage and was accessed by Texas Instruments' proprietary Graphics Programming Language (GPL). The computer was designed to use graphics read only memory (GROM) which was another Texas Instruments proprietary design, for programmes. But the grom based programmes were incredibly slow — most were GPL based and used the video memory for data processing. To add insult to injury, peek and poke commands were left out of the BASIC language groms built into the computer. Peek and poke commands would have allowed access to all the machine resources without the need for an additional grom cartridge or external peripheral.

Allow me to digress for a moment. You know that the TI has BASIC built-in. But did you ever wonder why the sixteen bit TI seemed no match for the 8 bit computers such as the Apple, Commodore VIC 20 or 64, Radio Shack Model One computers, etc. running the simplest of BASIC programmes. Well, BASIC is an interpreted language — i.e. each command is made into a form which the computer can use one command at a time. (Compiled languages like C change an entire series of commands into a form that the computer can use all at once.) Of course, this takes time. When the commands are stored in cpu ram they can be DIRECTLY ADDRESSED, but if they are on a mass storage device-like video ram then each access to that device slows down the process. Remember, the TI only has 256 bytes of cpu ram whereas the VIC 20, for example, came with SIXTEEN times as much ram – 4096 bytes. Also, TI

(continued on page

(An excellent first person article by a well-known prolific writer... Reprinted from Fast Times July, 1992)

Chris' Corner (continued from page 7)

BASIC was in grom not rom and written in GPL. Had the TI been provided a level playing field in the BASIC arena alone, I feel that the competition would have packed its bags and left town. The closest to leveling the playing field was the ability to add 32K of extra cpu ram.

If you are still with me, you see that the real power of the TI was hidden and that purchasing the expensive extra 32K of cpu ram was the only way to unleash the TI. Unfortunately, it didn't quite work that way. Buying the 32K memory offered the potential but the console BASIC provided no way to DIRECTLY address the memory. The only solution once you had bought the memory was to buy an expensive cartridge in order to use it like TI eXtended BASIC, TI Writer, Microsoft Multiplan, Editor Assembler, etc., all of which I bought as I approached a point of no return. My original reason for investing in the TI was to help me with my language studies. That had yet to be realized. So, as I looked at the piles of manuals before me, I decided that the thinnest of them — the eXtended BASIC manual — seemed to be my best bet to accomplish my goal.

It didn't take long to see that eXtended BASIC would not allow me to fully achieve my goals. There was no direct access to powerful capabilities of the video processor. The video processor was capable of allowing me to have instantaneous access to several foreign language character sets by using a process known as page flipping. So I decided that the only way to use the TI as I needed to was to use assembly language. This language would permit total access to all the resources offered by the TI and do so at ultra fast speed. Naturally, such power comes with a price. Assembly language is a very tedious way to programme a computer – that's why languages like BASIC were invented. Even worse than being tedious, there were no readily available books which would teach me how to programme the TI's unique cpu.

In 1984, still determined to protect my computer investment I bought six TI's at fifty dollars apiece. I figured that if I did succeed in using them like I wanted, I would need some to act as backups in the event that their use became critical to my daily operations. I also, discovered MICRQpendium that year. It was in MICROpendium that I saw an ad for Wycove forth. The ad offered forty times the speed of BASIC and the same ease of programming. It also, promised access to the hidden abilities of the TI. I guess I didn't know when to stop, because I ordered the programme. That was my single most important purchase for the TI. It delivered all it promised but it was too late. Too late, for what I thought.

By 1985, I had even higher hopes for the TI than ever. When I discover how to use the bit-map mode I realized that I could draw anything on the screen that I wanted. More importantly, I discovered that I could create highly readable text which permitted a sixty-four column display. Further analysis indicated that on a typical page with two one inch borders, I could type a full line of text without the annoying jumps that TI Writer uses to show a full line of text. Before you say that sixty four columns is not enough, think about one of the most talked about computers of 1985-the Apple Macintosh. The Macintosh popularized the Xerox Parc project's development of the mouse and a graphical user interface (GUI). When I studied the Macintosh, I concluded that there was nothing the Macintosh did that I could not do on the TI. Especially, when you consider that the basic premise of a computer display is a symbolic representation of data scaled to the dimensions of the display. Using windows further emphasizes my point. Windows merely shows a small portion of a larger picture. Of course, the TI offered two major advantages over the Macintosh-colour and speech. I am not saying that the TI is better than the Macintosh. The Macintosh is a superior machine. I, however, am reminded of one of Apple's ads which showed the PC and the Mac and asked: "Which is the more powerful computer?" The obvious inference was that the ease of use on the Mac permitted greater usage. What I am saying is that even in today's crowded field of computers, the TI can hold its own provided there is software that exploits its powerful array of under used features. Such software is possible on the TI.

ct ❖

From: D.C.S.

TI 99

TI Still Cares

Justin Dowling

Texas Instruments still provides a repair service for the 99/4A computer. In August, I called Texas Instruments at (800) TI-CARES and asked about its repair service. It still repairs all the equipment it manufactured for set prices, and if something cannot be fixed, TI will replace it with equipment from stock. I received the following repair prices on August 14, 1992:

Equipment	*Price*	*Shipping & handling*
TI 99/4A console	$45.00	$6.00
P Expansion Box	$25.00	$6.00
RS232 card	$33.00	$6.00
32K card	$60.50	$6.00
Disk controller card	$44.00	$6.00
Flex cable (fire hose)	$25.75	$5.00
SSSD disk drive	$60.50†	$6.00
P-code card	$33.00	$5.00
TV modulator	$12.75	$4.00
Joysticks	$9.75	$3.00
Power transformer	$5.25	$3.00

† *Buy a double-sided disk drive (DSSD) from a reputable dealer, and double your capacity for the same price.*

TI also requires state sales tax for whatever state you are ordering from. It accepts MasterCard, Visa, and personal checks. Send your broken equipment with payment to:

Texas Instruments
2305 North University Avenue
Lubbock, TX 79408
Attn: Repair Center

Texas Instruments will also repair CC-40 equipment at the following rates:

Equipment	*Price*	*Shipping & handling*
CC-40	$60.00	$6.00
Printer/plotter	$55.00	$6.00
Printer 80	$55.00	$6.00
RS232	$33.00	$6.00
Modem	$33.00	$6.00

Since TI stopped making 99/4As in 1983, many third-party hardware and software vendors for the 99/4A have appeared. In fact, I have had some good experiences with 99 computer repair. I recently sent in my CorComp disk-controller card, thinking it was sick. It charges $50 to repair a disk-controller card, but there was nothing wrong, so it cleaned it and refunded $25.

99 Computer Repair repairs all CorComp products. Contact them for a "return authorization" before sending your unit.

99 Computer Repair
2101 West Crescent Avenue
Unit B
Anaheim, CA 92801
(714) 539-4834

MICROpendium, the 99/4A and Geneve magazine, costs $25 for a one-year, 12-issue subscription. Write to:

MICROpendium
P.O. Box 1343
Round Rock, TX 78580
(512) 255-1512

Catalogs are available from the following vendors. Texaments has a line of used hardware and new, commercial software for the 4A. Asgard has commercial software, and Tigercub has public-domain software. TM has software for hard drives and general software. Texcomp has a huge inventory of hardware and software. Bud Mills sells the Horizon RAM disk and related software, e.g., the PGram card. I've heard that Mills is working on an SCSI (Small Computer System Interface) hard-drive controller. Comprodine is renowned for its software with a printer application—*PrintShop*-like stuff. Notung Software's Ken Gilliland is an artist who writes amusing software (*TI Casino*), fun software (*Dinosaur* and *Baba Brewery*), and music stuff for the Midi interface and speech synthesizer.

According to the June 1992 *MICROpendium*, Myarc has gone out of business. But another third-party vendor has taken over the repair of its hardware. Perhaps, in the future, Cecure Electronics will assume the Myarc product line and resume selling good hardware like the Geneve and the hard- and floppy-disk controller.

Texaments
53 Center Street
Patchogue, NY 11772
(516) 475-3480

Asgard Software
P.O. Box 10306
Rockville, MD 20849
(703) 255-3085

Tigercub Software
Collingswood Avenue
Columbus, OH 43213
(419) 385-5946

TM Direct Product Marketing
1650 Broadway
Redwood City, CA 94063

Texcomp
P.O. Box 33084
Granada Hills, CA 91344
(818) 366-6631

Cecure Electronics
7759 South Scepter Drive
Franklin, WI 53132-2201
(414) 529-2173

Bud Mills Services
166 Dartmouth Drive
Toledo, OH 43614

Comprodine
1949 Evergreen Avenue
Fullerton, CA 92635

Notung Software
7647 McGroarty Street
Tujunga, CA 91042

This list is not exhaustive. There are other vendors, and some are in the Massachusetts area. The House of Computers and CaDD Electronics both participate in the BCS TI 99/4A Fair every year. CaDD manufactures the Gramulator. If you're interested in either product line, write for a catalog. Mind your manners and call before sending them your sick hardware. They may want to assign a repair number so that there's no mixup with the gear you send.

The House of Computers
515 Newport Avenue
South Attleboro, MA 02703

CaDD Electronics
81 Prescott Road
Raymond, NH 03077

Justin Dowling is the director of the BCS TI 99 Group.

Hole Currents

Telemetry, Or How to Send Information

Earl Raguse

This series, "Hole Currents," is about sending information from one place to another—by telephone wire, private wire, radio link, laser beam, or tom-tom drums. In addition to basic how-it-works details, I will discuss commonly used signal types and kinds. The data considered here is remote measurement data. Most data begins as analog measurement data.

Modems use telemetry principles. Telemetry, the science of measurement from a distance, occurs whenever the measuring device (transmitter) and indicator or recorder (receiver) are not in the same case. Practically, the word telemetry seems to be reserved for situations where the signal is transmitted through some telephone lines, radio links, or a mile of wire or fiber-optic cable. Whenever the transmitter and receiver are not in the same room, we are applying telemetry principles. Telemetry usually, but not necessarily, involves modems.

Telemetry, the science of measurement from a distance, occurs whenever the measuring device and indicator or recorder are not in the same case.

How is it possible to transmit measurement data, e.g., a level in a water tower or reservoir, over a distance of several miles? Analog. When two variables maintain a relationship, each is the analog of the other. A simple device for generating an analog is a float, connected to a cable that operates a device that outputs a signal related to the float position in a known way. The signal may be an air pressure, a voltage, a current, a frequency, a pulse rate, a pulse duration, or a combination of the above. Flow meters, in particular, tend to output pulse rates proportional to the flow rate. Many devices output a proportional 4-20 mAdc signal. Separate devices are available to convert this current signal to any of the signaling modes mentioned above.

Pulse rate signals are easily telemetered over telephone lines or radio links, or by telemetry. Another very common signal method used with slow-speed telemetry is pulse-duration modulation, often called time(d) pulse. In this method, the duration of pulses is made the analog of the measured variable. Pulse-duration-type modulation signals were invented because very simple electromechanical hardware could do the job with only a synchronous clock motor turning a cam and a system of levers controlled by a float or similar device to move a switch relative to the cam. The switch could interrupt fairly high currents or voltages, even 120 VAC (volts alternating current). The main drawback was the receiving device that contained clutches, springs, etc., that were subject to wear.

Pulse rate signals are easily telemetered over telephone lines or radio links, or by telemetry.

When signals are sent via telephone lines or by radio link, we do not usually have the luxury of a separate pair of wires (line) or frequency (channel) to send each signal. Therefore, we introduce multiplexing, a special technique for sending two or more signals along the same path so that they do not interfere with each other.

What's in a Name?

Perhaps you are wondering about the title of this series. Blame Benjamin Franklin. He didn't know about electrons, and decided that electric current flowed from positive to negative. We know the correct theory but still use his conventions. Well, I won't fall for it—electrons flow from negative to positive potentials. Holes flow from positive to negative. Although his backward theory works, we don't have to accept it ☺

Earl Raguse is a member of the Orange County, California, TI 99 User Group (UGOC).

NEXT MEETING TUESDAY, DECEMBER 9, 1992 MERRY CHRISTMAS HAPPY NEW YEAR!

UNCH OFFICERS AND NUMBERS (all in 508 area unless noted)

resident	W.C. Wyman		865/1213
ice President	Bruce Willard		852/3250
ecretary	Jim Cox		
reasurer	Jim Cox		869-2704
cting Editor	Jim Cox		
dv.Prog. Chair	Dan Rogers		248-5502
ibrary	OPEN		
isk Librarian	Lou Holmes	617	965/3584
ape Librarian	Walter Nowak	413	436/7675
EW-AGE/99	Jack Sughrue		476/7630

MUNCH DUES	
NEW MEMBERSHIP	$25.00
RENEWAL MEMBERSHIP	$15.00
NEWSLETTER ONLY SUBSCRIPTION	$13.00

OVEMBER MEETING. Jack showed some of the ways he has customized his Funnewweb nd toher programs, especially his C-3 file. Tony Falco demoed some of his ducatinal programs. We have put together a 5-disk set of Tony's programs as ur 1993 Fund Raiser, the price will be $8.95. A very happy Jack Sughrue won he raffle.

ECEMBER MEETING. This month I hope Jack will get a chance to demo some more of ail List Manager, and I am sure we will have some other holiday surprises.

AFFLE. Every month we have a raffle to help defer the rental cost of our eeting hall. A typical raffle will have game and utility programs T-Shirts, ooks, bumper stickers, blank discs and all sorts of odds and ends for the T.I. pecial this month we have a Glare Guard Professional monitor screen.

IBRARY NOTICE. Please return any items borrowed from our library. If you can ot come to a meeting or give these items to someone who will be at the eeting.

EPRINTS. Reprints are permitted as long as credit is given to M.U.N.C.H.

RTICLES. I am always looking for articles for this newsletter, anything which interests you will probably interest other members of the TI community, so please share your ideas and opinions with all of us.

DISK LIBRARY. The disk library will be at the meetings from now on. We have copies of all disks in the library and they are available to members for just $1.50 each for single discs, $2.00 flippies, $3.00 double discs and $4.00 double flippie.

FOR SALE. The group has a TI Count Business Software package available for sale. If interested contact Jim Cox at the above numer or the club address. We also have blank disks for sale. The price is $6.00 for a package of 25 disks.

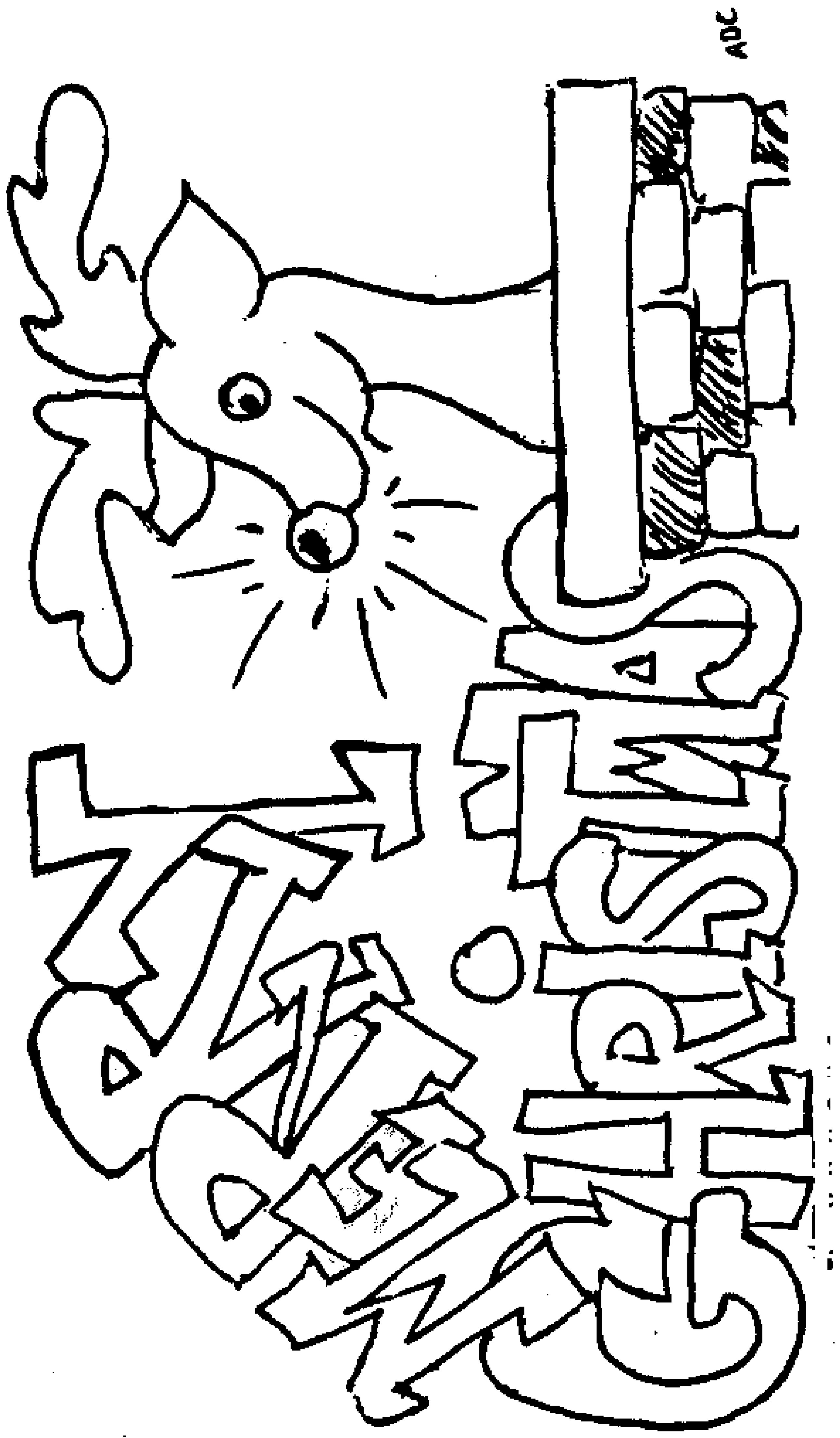
DISK OF THE MONTH. This month's disk is #113, GPL #26, TI Utility #5: Physical Fitness, Touch Typing Tutor and Tunnels of Doom.

WELCOME NEW MEMBERS. Climpson B. Clapp of Portland, Or.

THE MUNCH VIDEO is ready, members can purchase it for $5.00, plus $3.00 postage for mail orders.

Mass Users of the Ninety-nine and Computer Hobbyists

DECEMBER 1992 Monthly Newsletter Version 11.12



NEW ADDRESS:

M.U.N.C.H.
C/O J.W. COX
905 EDGEBROOK DR.
BOYLSTON, MA. 01505

FIRST CLASS

Next Meeting DECEMBER 8th.

POSTMASTER: Forwarding and Address Correction Requested.