# GUILFORD 99'ERS NEWSLETTER

HAPPY NEW YEAR

SUPPORTING THE TEXAS INSTRUMENTS TI-99/4A COMPUTER

GUILFORD 99'ERS UG
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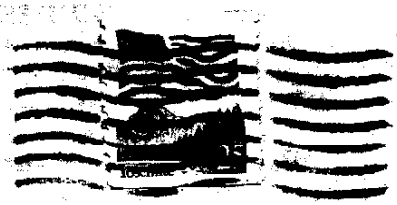
27408

TO:

VOLUME 8 NUMBER 1 JANUARY 1991

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The Guilford 99'er Users' Group Newsletter is free to dues paying members (One copy per family, please). Dues are $12.00 per family, per year. Send check to:Tony Kleen c/o 3202 Canterbury Dr., Greensboro, NC 27408. The Software Library is for dues paying members only. (Bob Carmany Ed )

OUR NEXT MEETING

DATE: Jan 8, 1991 Time: 7:30 PM. Place: Glenwood Recreation Center, 2010 S. Chapman Street.

Program for this meeting will be a demonstration of some TI-Writer utilities. There are a number of utilities available for your word processor including utilities to turn TI-Writer into a quick and dirty data-base. These are real diamonds in the rough!!

## $$ DUES $$

Yep, you guessed it! It is once again time to pay your Users Group dues. Just give them to Tony at the meeting or mail them in to the address above. Remember, they have to be paid by the February meeting or your newsletter subscription will expire with the February issue! Make sure you don't miss the "goodies" coming up this year!

## MINUTES

Our December monthly meeting was called to order by President Bob Carmany at 7:30 pm. Last month's minutes were accepted as written. The treasurer's report was accepted. We have $83.76 as of December 4th. The year-end accounting of income and expenses was accepted as presented. This was our meeting to install our new offices, 'a changing of the guard', so to speak. Thank you, prior officers, for your past dedication and support; and for your continued support! New officers are as follows:

Director - George von Seth
Sec/Tres - Tony Kleen
Librarian- Bill Woodruff
Newsletter Bob Carmany

Bob mentioned that this was our eighth full year for the newsletter; without missing a month. Let's keep this excellent record going; please plan to contribute an article to your newsletter this year.

Our new secretary has been given the 'go ahead' to attempt newsletter exchanges with other groups. I'll attempt to contact at least 1 a month.

With the meeting completed, everyone eagerly made and seconded the motion for adjournment. Refreshments were waiting! Unfortunately, my suggestion to 'munch' while the presentation was given was vetoed, so.. I had to give my demonstration of PB:publishing prior to the Christmas goodies being devoured. Needless to say, I kept the demo short.

My thanks to all who helped with the Christmas goodies and glad tidings.

Respectfully submitted,

Kleen, Sec/Tres.
Alford 99er Users' Group

## SCROUNGING

By Bob Carmany

Several months ago, MICROpendium started a series of columns about expanding your TI. It covered just about every group of peripherals with advice on what you probably needed with some comparison of different brands or model numbers. The only thing that was left out was where to go to find them.

Really, it isn't surprising that there weren't sources listed for some of the items --there just aren't 20 or so suppliers left anymore! That's where the title of this article comes in!

There is still a lot of TI gear floating around but you have to know where to look. Originally, there were some 2,000,000 99/4A's sold here in the U.S. and a good many of them are stuck on shelves and tucked away in closets because their owners have no idea of what they really have! In TI's last dying gasp, several hundred thousand of them were sold for $49. Even at that price, a second console is a good sound insurance policy against future failures.

Where do you go to find a "pre-owned" console? Easy! The first places to look are flea markets and yard sales. TI consoles still appear (usually with a couple of cartridges) and the price is usually a lot less than $49.

Awhile back, Lutz Winkler told me about a deal that he ran into at a yard sale. Six, that's right six (6) TI consoles for $36! He figured that if only two of the six worked, he had come out ahead. Why? Just consider this!

There are several unique chips in each TI console. The TMS9918A video processor chip and the three GROM chips. The GROM chips probably can't be bought even from TI so a console (albeit a broken one) is worth some money if the GROM chips can be salvaged. The TMS9918A is still available but the best price that I have seen is $20. So, if you have a broken console with a couple of bad VDP RAM chips, you still have about $60 worth of salvageable chips in it. Certainly a few-dollar investment is well worth it to keep your TI going.

Another source is the classified section of the newspaper. Every so often (like the week of Dec. 7th) you will find a TI advertised in the paper. The asking price on this particular one was a bit steep but sometimes you can negotiate and buy bits and pieces. Other TI gear appears from time to time as well.

Look at store liquidations of former TI retail outlets. Last year, I managed to pick up a new, still-in-the-box TI Disk Controller for $15 at Brendles here in Greensboro. Two other UG members picked up TI RS232 cards for the same price. In fact, there was even an empty P-Box that I'm sure could have been had for far less than the $90 that they were asking for it. I guess the bottom line is that you just need to keep your eyes open for some of these bargains that are still available.

This is the first in what I hope will become a continuing series on TI peripherals and where to go to find them. Next month we will start with the individual peripherals themselves by looking at where to go for monitors. 'Til then . . .

## SURGE PROTECTION

By Ken Hamai

Note: This is NOT an advertisement for Radio Shack Stores. I mention these because they are the most convenient to most of the membership and als. because some of the items mentioned in these articles can only be found at the Radio Shack.

The magic word for this month is "MOV". Hah! I knew that would wake up all you assembly language wizards. Well, this MOV stands for Metal Oxide Varistor.

I'm sure you've all heard of the terrible horrible phenomenon called VOLTAGE SURGE. All these manufacturers that sell these lemons and limes for big bucks always buy full color ads in the computer magazines to inform us about the terrors of SURGE burning up YOUR COMPUTER. We have nightmares about suddenly having the lights FLICKER and having smoke billowing out of the old 99. Well, have you even wondered how how they can afford to buy those full color glossies?

At the very heart of the majority of the commercial surge suppression devices is this thing called a MOV. At the local Radio Shack you can find one of these things for less than two bucks. Well, to be exact, $1.69 plus tax, and that's for the expensive one! What you do is take your multiple outlet box, open it up, and wire this thing in parallel with the outlets. Make sure you wire it in on the load side of the circuit breaker or fuse. That's all folks!.

I believe the MOV was originally invented by Matsushita people in Japan, yep, the same fellas who make Panasonic and National products. General Electric bought the rights to manufacture in the US. Many of the new high voltage surge arrestors on the utility lines are MOV type. The MOV is actually a type of voltage-sensitive resistor. It will have a high resistance to current flow at all voltages below a certain threshold voltage. Above that threshold voltage, the resistance breaks down to a low resistance. Thus, high-voltage transients are clipped away by the MOV, while the AC line voltage is not affected.

The Radio Shack MOV is catalogue number 276-568 and is designed to protect 125VAC circuits. The nominal operating voltage is 205V and can handle a peak current transient spike of 4000amps.

One of the things you have to look out for is that these things do not last forever. They eventually break down and burn out. You will know when the MOV operates under a large surge. If the surge is large enough it will cause the fuse to blow or the breaker in the multiple outlet box to trip. If you keep getting blown fuses or breaker trips, it's probably time to replace the MOV.

## THE TI-99/4A

By Robert Wessler

After listening to the controversy, and having been on both sides of the issue, I feel I may be able to clear up some hard feelings on the part of some people. There has been some heated discussion lately about the like and dislike of the 99/4A computer. There are some who feel they got taken when TI stopped production of the computer. There are some who bought the machine at the $50.00 close out price and still feel they got a raw deal. On the other hand, there are those who wouldn't trade their trusty TI for an IBM PC.

Only five months ago, I was in the first category. I had spent a lot of money for a fully expanded system, and had very little to show for it. If I wanted to play any 'good' games, I had to go to a friend's house and use his Apple computer. It seemed that there was nothing available for the TI. I was ready to give up on the 99/4A and get an Apple IIe. Then I got a modem for Christmas and a whole new world opened up for my TI. I joined two

otext services and started talking to other TI users. I found a users oup in my area and was able to see and use the programs that had become vailable for the TI. That's when I realized that it wasn't the computer I disliked, but the lack of software. The only useful programs I had up to that point were those I had written myself. At the users group I saw demonstrations of the Sketch Mate, of 3-D World, TI Runner, and many other programs for the TI.

What I'm trying to say, is look at your computer again. Is it the computer you dislike? I will admit that some people don't like the small keyboard and the TI setup. But if it's the lack of software that has you upset, maybe you should look around a little bit. It isn't easy to find the programs that you want, but most of the programs available for the other home computers are available for the TI. The price of these programs is usually less than the versions for the other computers. I'm glad I didn't sell out and get an Apple. The TI is easier to use, easier to program, and much less expensive to expand. I guess the ultimate compliment to my 'new' system is knowing that my friend with the Apple is jealous.

If you need the luxury of walking into any computer store and being able to buy software for your computer, then the TI is not a good computer for you. If, on the other hand, you don't mind searching a while for what you want, and mail order doesn't bother you, then give your TI another chance. As far as I'm concerned, it's the best home computer that's been made!

## KEYBOARD REPLACEMENT

By Herman Geschwind

Replacing a keyboard on a 99/4A is really a very simple job that requires no special skills beyond the use of common sense and ordinary prudence, nor are any special tools or soldering required.

A good source for a replacement keyboard assembly is Radio Shack. Evidently TI unloaded their surplus stock of keyboards on Radio Shack (and several other electronic parts houses). The Radio Shack part number is 277-1017. Be warned, however, since the keyboard was selling for $2.95 or less, sales were brisk and the keyboard might no longer be in stock. It seems that people cannot resist a bargain and I know of TI'ers who bought three or four, just in case. If your keyboard needs replacement, check with your friends or a local users group and chances are good that you might find one, if Radio Shack no longer has a supply.

In the way of tools, all that will be required is a medium size (1/8") Phillips head screwdriver and perhaps a flashlight.

First off, inspect your Radio Shack purchase and make sure that the keyboard layout is the same as your 99/4A keyboard. If there are any extra keys or if the keycaps are labelled differently, STOP. Under the same part number Radio Shack also sold non-99/4A keyboards. Adapting a non-99/4A key board for use with a TI home computer requires special skills which are beyond the ken of the average layman, if it can be done at all.

TI had subcontracted for keyboards from various sources in Japan and Korea. Thus the shape and texture of the keycaps might be different. Don't let that put you off, the main thing is that the number of keys and the layout are the same as your original.

If your keyboard passed this test, unpack it and test all keys. Look for keys that might be binding or feel "sticky". Try to get a feel for the key action. Once you are satisfied that your replacement passed this test, go on.

Disconnect all cables from the console (power, video, PE box, etc.). Your console should be cool. If you had just used it, allow some time for it to cool down and for whatever residual electrical charges there might be to

dissipate. Observe normal precautions about static electricity!

On a clean working surface turn the console over. There will be seven Phillips screws to undo. Four are at the narrow end of the console, three are at the other end and recessed. After undoing the screws, the bottom shell should come off. If it does not, recheck and make sure that you have removed all seven screws.

Once the bottom shell has been removed, three components will be visible: A printed circuit board, approximately 4" square, which houses the power supply; the keyboard assembly, which runs from the power supply board to Once the bottom shell has been removed, three components will be visible: A printed circuit board, approximately 4" square, which houses the power supply; the keyboard assembly, which runs from the power supply board to the edge of the console; and a larger assembly which runs parallel to keyboard and power supply all the way across the console, the motherboard.

The power supply is held in place by two Phillips screws along the edge closest to the keyboard assembly. Remove these two screws and gently move the power supply board an inch or so to the side. Don't force anything since there are wires attached to the power supply board.

Next, locate and undo the four Phillips head screws that secure the keyboard assembly. Gently lift the keyboard assembly an inch or so. You might have to lift the edge of the motherboard just a little to allow the keyboard assembly to clear.

At this point you will notice that the keyboard is attached to the motherboard by a ribbon cable. Locate the connector at the motherboard side. Use a flashlight, if necessary. GENTLY pry the connector loose by pressing down with a screwdriver. Do this in several small steps along the length of the connector. The idea is to remove the connector without bending any of the pins on the motherboard.

Once the connector has unsnapped, remove the old keyboard assembly. Take time to take a good look at the row of gold pins that were uncovered when the connector came off. Make sure that all pins are straight and evenly spaced. If not, very gently try to straighten whatever pins were bent. If this is necessary, proceed with caution and use a minimum amount of force!

Insert the new keyboard assembly without forcing it into place. Line up the connector of your new keyboard with the pins. GENTLY start connecting the pins with the connector. Visually double-check that all pins mated with the connector. If not, pry the the connector loose and try again. Being too hasty at this step could result in a broken pin, so do be careful! Once you are sure that everything is lined up properly, firmly but gently press the connector down on the pins.

Relax now, the most ticklish part of the job is behind you! Next, observe that there is approximately one to two inches of extra ribbon cable. This extra length needs to be folded up and into the space between motherboard and console housing as you simultaneously seat the keyboard assembly in place. To seat the assembly you also need to lift the motherboard edge just a bit for the edge of the keyboard assembly to slip under it, simultaneously try to get the extra length of ribbon cable to fold as described. If this sounds like a job for three hands, you are right and a helper at this point of the installation does make things easier.

Now, line up the screw holes and secure the keyboard assembly with one screw. Lift the console a little bit (remember, everything should still be upside down) and test the row of keys with the numbers on it. There should be full travel for all keys, particularly the keys numbered 4 through 8. If any of these keys appear to bind or feel different from the 1 or 0 key, then the ribbon cable is not folded properly. Undo the one screw and recheck the ribbon cable. Remember, any extra length of the ribbon cable should not touch the keyboard assembly but be tucked into the empty space above the motherboard.

Once the keys check out, replace all four screws on the keyboard assembly.

Relocate the power board, make sure that the ON/OFF switch connects properly. If necessary lift the board just a little and observe the switch action. Once the switch works properly, secure the power board with its two screws.

Replace the console bottom cover. Make sure that it lines up properly with the top before replacing the screws. Seat all seven screws and then tighten by working over cross.

Your replacement keyboard is now installed and should be working properly. Don't throw your old keyboard away just yet. If it is only a few keys that refuse to work, take it to your friendly radio or tv repairman. Quite often the judicious application of contact cleaner and a good general cleaning can restore a balky keyboard to pristine health.

## CEO'S CRUX

It is a pleasure to welcome you all for yet another year of the Guilford 99'ers UG. I believe it is the 9th year of our existance so let's continue to work together for a stronger and more active club. We have been getting some wonderful new programs with excellent demos of them at our regular club meetings. Those of you who have been in attendance can vouch for that. As your new "CEO" (no more office of president), any and all help offered will be appreciated. We need you to take the programs for our regular meetings, and your offerings for the newsletter. Most important, we need you to attend the regular meetings.

Let us know about your experiences with your TI-99/4A and how you are using it. Perhaps you would like to have all your financial income and outgo recorded so that when Uncle Sam extends his hand, you can put a print-out in it. If you are a "game" person, we have game players in the club. Remember, we are all here for the same reason---to learn more about our computer and how it can do for us. When we accomplish that we have FUN!
We look forward to seeing you all again on January 8th.

## FILE MOVER

Here is a short program from Jim Peterson (Tips from Tigercub) that is for all of you with just one disk drive. This program will transfer any number of D/V 80 files from one disk to another in one pass. The program will optionally allow you to rename the files as well. The only restriction is that the total of the files must not exceed 42 sectors. At any rate, here is the program:

```
100 DIM M$(2000),F$(25),C$(25):: CALL CLEAR :: T$=CHR$(1)

110 DISPLAY AT(8,6):"TIGERCUB FILEMOVER" :: DISPLAY AT(15,1):"PRESS ENTER WHEN
    FINISHED"

120 F=F+1 :: IF F>25 THEN 130 :: DISPLAY AT(12,1):"FILENAME? DSK"&T$ ::
    ACCEPT AT(12,14)SIZE(-12)BEEP:F$(F)::IF F$(F)<>T$ THEN 120

130 F=F-1 :: FOR J=1 TO F :: ON ERROR 260 :: OPEN #1:"DSK"&F$(J),INPUT ::
    DISPLAY AT(12,1):"READING "&SEG$(F$(J),3,255)

140 X=X+1 :: LINPUT #1:M$(X) :: C=C+LEN(M$(X))

150 IF C>10000 THEN DISPLAY AT(20,1):"INSUFFICIENT MEMORY FOR "&SEG$(F$(J),3,
    255) :: GOTO 190
```

```
160 IF EOF(1)<>1 THEN 140

170 X=X+1 :: M$(X)=T$ :: CLOSE #1

180 W=W+1 :: NEXT J

190 X=0 :: DISPLAY AT(15,1):"":: DISPLAY AT(12,1):"INSERT COPY DISK AND PRESS":
    "ENTER"

200 CALL KEY(0,K,ST):: IF ST=0 THEN 200 :: DISPLAY AT(13,1):""

210 FOR J=1 TO W :: IF F$(J)=CHR$(2) THEN 230

220 DISPLAY AT(12,1):"FILENAME? DSK"&F$(J):: ACCEPT AT(12,14)SIZE(-12)BEEP:
    C$(J)

230 NEXT J :: FOR J=1 TO W :: IF F$(J)=CHR$(2) THEN 250 :: OPEN #1:"DSK"&C$(J)
    , OUTPUT :: DISPLAY AT(12,1):"SAVING "&SEG$(C$(J),3,255)

240 X=X+1 :: IF M$(X)<>T$ THEN PRINT #1:M$(X):: GOTO 240 ELSE CLOSE #1

250 NEXT J :: END

260 ON ERROR STOP :: DISPLAY AT(22,1):"CANNOT OPEN "&SEG$(F$(J),3,255):: F$(J)
    =CHR$(2):: RETURN 180
```

## DISK DRIVES

By Ken Hamai

Well now, let's see here...if I dig around this closet for awhile, I think we got something on...Yep, here it is, disk drive bits and bytes.

First, a little bit/byte of history...I vaguely recall back in the dark ages of pre-minicomputering in the the late 1960's, the earliest small computers, if we can call them that, only spoke Fortran and used punched paper tape for storage of information. The holes in the tape stood for logic 1 and the absence of a hole for logic 0. I remember when I was in college, that paper tape and all the neat little holes made swell confetti that was a hell of a mess to clean up if you had your room "papered" by gremlins with the stuff. Them little yellow dots would stick to everything in the dormitory rooms during the winter because of the static electricity. Needless to say, the use of paper tape was bulky, noisy, because the machinery had to punch all those holes in the tape, slow, not easily corrected, and messy, especially if you were the dorm nerd.

Then came magnetic tape. This was a major improvement. It was convenient and cheap, could hold large amounts of data and was faster than the paper tape. The one major problem with this is well known to all frequent users of the TI 99/4 cassette tape OLD CS1 loading routine, the tape operated in sequential fashion. If the user was at the end of a tape and the program he wanted was at the beginning, he had to wait a frustratingly long time for the tape to rewind. This is almost as bad as waiting for Multiplan to Recalc!

The early '70's saw the invention and use of the floppy disk drives. The idea was simple: instead of tape, use a rotating disk and instead of waiting for the tape to rewind, move the read/write head directly over the location of the desired program. This is just as one would move the tone arm on a phonograph to select a certain tune from a LP that contained several other tunes.

It wasn't until 1973 when the Big Blue (IBM) became the first company to

unce the use of a flexible disk with read/write capability into a system. e diskettes were 8 inches in diameter and the drives were about as big as the 9-4/A console. The latest thing in 1979 was to have a $50,000, 64K memory, word processing computer in your office typing pool with two of these drives built in. Currently these beasts are becoming increasingly rarer but you can still see a few of them around.

The 5 1/4 inch disk drive as we know them were introduced by Shugart Associates in 1976. This name should be familiar to all 99er's with the TI PHP 1250 drives for the Peripheral Expansion Box (hereinafter referred to as PEB). TI used the Shugart Model 400L drives for this peripheral...Nothing like the best!

Okay (for you Forth programmers...OK...for Ramon...AY), now that we got the closet cleaned out, let's cover a few things on the Shugart 400L drive. If you have one of these you know this is a single sided drive, capable of storing data on 40 tracks, up to a maximum of 90K with TI equipment. This is a very well built and reliable unit, like the PEB, almost bulletproof, and should last for a long time under normal home computer usage. It is one of the quietest operating drives manufactured due to the design which uses the stepper motor and a snail cam to move the read/write head over the disk. The drive is also equipped with a solenoid operated pressure pad which presses the disk unto the head only during read/write operations. Only a few manufacturer's provided drives with this extra. This is a nice feature since it keeps the head and diskettes from unnecesary wear. The TI disk system spins all drives connected to the controller even though it is only accessing one of the drives. If it wasn't for this solenoid, any disks in the other drives would also be rubbing against the heads unnecessarily. The distinct click of the solenoid can be heard whenever the drive light switches on or off during disk operations.

About maintenance...Keep in mind that it is usually the mechanical parts in a computer system that break down or wear out first. Disk drives are many times the first things that go on the fritz. For the average home computer user, maintenance should be limited to periodic cleaning of the drive head with one of the commercial head cleaning kits and maybe annual removal from the PEB or other enclosure to clean out any accumulated dust.

One must avoid the temptation to oil the drive, especially the rails on which the read/write head slides. The drive is designed to operate without oil on the rails. Oiling can actually gum up the drive. This is due to the fact oxidation will cause a thin layer of oil to become gummy. The effect is even worse when the oil is heated or warmed. To this gummy substance, one only needs to add dust which is normally found in most environments, and what one now has is one helluva mess inside the disk drive. This could keep the drive from operating properly and would require a major teardown to clean up. In the PEB the situation is even more aggravated because the airflow generated by that humongous loud fan that is keeping the cards nice and cool is sucking in air through the equipment, including any airborne dust and dirt. Sort of reminds me of those TV commercials during the "Cold and Flu season" where they show all those cartoon germs and buggers flying around your head...

Equipment that is transported often or used heavily can be subject to troubles which show up as disk errors during read/write operations. One of the culprits is disk drive rotating speed as covered in Ron Rutledge's article which was reprinted in the April issue of the ROM. The other more likely problem of disk read/write errors is head alignment. On the 400L Shugart, alignment is easily accomplished in most cases by loosening the locking screws on the stepper motor and slightly adjusting it back and forth until it reads the disk that you want it aligned to.

For instance, let's say all your other 99er buddies have disk drives that can read a particular disk. Yours can't read the disk at all. The chances are good that your drive is no longer in alignment. What you need to do is to use that disk to line up your drive. If you really want to get picky, the ultimate

test is to get one of those industry standard diskettes and calibrate your drive to that. I find that is not really necessary in most cases and especially for single density operation. I have had satisfactory results on track drives just by using a TI original disk version of a program to align the head. If you can get your drive to read original unmodified TI disks, the chances are good that your alignment is okay...(OK).

I have to caution you that this is not something to do if you are not mechanically inclined or when your wife's calling you to dinner. There could be a considerable amount of adjustments involved, depending on how far out of whack the drive is. One time I bought a used double sided drive which took about an hour to align because both heads were out of adjustment. I learned how to do it by tinkering, but then again, I also repair antique clocks as a hobby. You might say the same caution should go for Rutledge's hints. If you do not fully understand what he is recommending, then...Don't do it! Above all, a good rule is: Don't fix what ain't broke!

Rutledge's article also covered the special resistor pack required to connect up a second disk drive to the PEB very well, but he failed to mention that the resistor is only needed if you are using the 400L as Drive 1. If you have another brand or model drive, and are using it as Drive 1, then the special TI resistor is not needed. In any event, the required resistor is readily available at any electronics store (you all know my favorite). Also, he mentioned a required adapter board. This special board is only required if you use the original TI hookup. This hookup included special keyed connectors that allowed connecting the cables in a certain configuration to control the drives without doing any internal jumpering at the disk drive strapping pack. A cable and jumpers could be easily made up to run any number of add on drives up to the maximum of 3 for TI controllers without the adapter board. All you need is some 34 position connectors, some cable, a vise and a little bit of know how.

## EDITOR'S NOTES

There are a couple of quasi-technical articles in this month's newsletter written by Ken Hamai. These were extracted from some old copies of newsletters that we had on hand but they are still appropriate for our orphan. One of them may save you the trouble and expense of having a disk drive repaired or seeing your console go up in smoke during a summer thunderstorm.

One last word before I get this newsletter organized and sent off to Tony. You may have noticed that we have changed from the condensed print back to full-sized pica. There are a couple of reasons why we did it. First of all, the newsletter has been running a bit short of our maximum 10-page size because of a minor shortage of material. Our postage is the same whether it is 7 pages or 10 pages so we decided to save everyones eyes when the material is a bit scanty. The second reason is that it is a whole lot easier to slap a newsletter together when you don't have to worry about imbedded print codes and other such nuisances when it is run through the Formatter.

The newsletter format will fluctuate from month to month depending on the amount and type of material that we get. Speaking of material for the newsletter, you can mail your contributions to me at: 1504 Larson St., Greensboro, N.C. 27407. Any format will do: typewritten stuff, handwritten stuff, and D/V 80 text files. As long as it is legible or we can extract it from a disk, we will gladly accept just about anything!