

SYDTRUG NEWS

SYDNEY TRS-80 USERS GROUP NEWSLETTER

Volume.4 Issue. 9

MAY 1984

IN THIS ISSUE

Hi, just back from Melbourne long enough to give Denis a hand with this month's issue (and what an issue - 12 pages). Thanks to all who have worked to make this one of the biggest and best that we have published.

Just in case you have not yet noticed, this issue has been printed on Denis's new UCHIDA Daisy Wheel printer, we are still experimenting with different fonts and spacings, so if you don't like it wait till next issue - there may be an improvement.

We start this issue with a report from the secretary, and as our own club bulletin board, "CLUB-80", has been operational for some time now, we have included a detailed tour of the "Rooms". We follow with articles on the Cicada modem, the TAB, Soldering Techniques (magic Euan), installing a buzzer in the FAX-80 printer, upgrading the TRS-80 using 64K RAMs, setting various printer modes from within VISICALC (our first article from Louis), a Video mounted Audio amplifier and last but definitely not least a lament from a "Computer Widow".

Before I sign off again, I must thank all contributors and ask Denis to "Kick the Butts" of those too lazy to make the effort. Just to make things a bit easier here are the details of how to submit an article.

- (a) Dump the completed document as an ASCII file (No preformatting or embed control codes within the file.)
- (b) The file may be dumped on Tape, Disk or the Bulletin Board (Not in the News Room at present).
- (c) If dumping to Club-80 leave a message to the Sysop and Denis Pagett.
- (d) If you don't have a WP program, save the file as a Basic Program (Don't try and run it!).
- (e) Include any relevant diagrams (send to the club P.O. box if you can't get to a meeting).

See you all on the first meeting in June (yes 1984!) - Your Sometimes Editor
Gary Bryce.

MEETING DATES

The dates for the forthcoming meetings in May and June are as follows :-

MAY	JUNE
19th - Monthly Meeting	9th - Monthly Meeting
	16th - Special Interest Group

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SECRETARY'S SECTION.

by Jim Whittaker.

772-2009.

This is just a few more ramblings from your faithful Secretary (alias I/O errors. Ed). Membership is currently 155 and I hope this will increase. The more we have the stronger we are.

Firstly, Uni of N.S.W. is offering a course on programming in BASIC, (AFC beat me to the punch). This course is broadcasted on 1692 kHz just off the regular AM band. The series start 28 May 1984 at 8pm on Mondays. If some interest is generated, I will propose that the committee purchase the cassette tutorials and associated notes for the club library. Radio university offers many courses in many different fields. One for hackers is Microprocessor Fundamentals.

A copy of the committee minutes is posted on the news board at each Saturday meeting. I hope you all read of the things we decide about our club. Some of these points were :-

BBS had 500 callers in the first two months of operation -congrats to the sysop : Ted Romer has donated a Real Time Clock -thanks TED : Funding of BBS will stay as is, apart from consumable items, we have an expansion program that includes Hard disk, Power filters, expanded system. I hope you realise that our BBS has so much to offer that is just unavailable elsewhere in Australia.

Is there any demand to produce a Year Book of our magazine ?

The committee is attempting to secure some real discounts on consumable items. Please let me know what you would like us to buy or arrange so we can all benefit. Also if any member would like to advertise discounted goods or services, computer related or not, let me know. As a club, we command great buying power.

You all noticed the stools that have appeared at meetings ,well they were supplied by Mick Rowney for your comfort. Mick is contemplating extending the premises we now occupy (or so I hear).

Lets keep this club working together. Any suggestions as to our aims or goals will be considered by the committee. I do hope that you will either write or speak to me about the things i have mentioned here. A Management Information System will collapse without feedback something like a FOR/NEXT LOOP without the NEXT part.

CLUB-80 BULLETIN BOARD

by Michael Cooper (SYSOP)

331-7136

The CLUB-80 Electronic Clubhouse is conceptually designed as a series of areas and rooms, each performing a different function. When the caller phones, the system answers the phone, establishes contact with the caller within 15 seconds, or logs off if no contact can be made.

The caller proceeds through the introductory banner and to the RECEPTION DESK to sign in. The caller's name and membership number are checked for accuracy, and if validated the caller is given members access. If no validation takes place then the caller is granted visitors access, a level precluding the caller from using many of the clubhouse facilities.

CLUB-80 (cont).

Visitors are checked against the callers log, and if a match is found immediate access given. First time callers are required to register their name, suburb and state in the caller log and are given a brief introduction to the system.

Clubhouse Foyer

The Foyer is the centre point of the club, with all rooms and areas radiating from it. Callers may elect to move to any "Open" room or area, provided they have enough privilege. During the construction of the clubhouse, limited access to rooms will apply, as we complete so we will open.

Currently only the MAIL Room, LIBRARY and ENQUIRY counter have been completed, although some of the information contained in the ENQUIRY counter may be dated.

Mail Room

The Mail Room allows members to leave messages to others, either public or private. Messages use passwords to confer the three levels of access. Messages addressed to ALL are freely available to any of the callers, the password merely protecting against deletion by other callers. Messages addressed to any other are deemed to be private unless the caller DOES NOT use a password.

Other functions of the Mail Room allow for the reading and deletion of messages, searching or summarising the Mail Room holdings, movement to the FOYER or to the clubhouse EXIT.

News Room

The News Room (when completed) will contain the latest edition of the SYDTRUG Newsletter, so callers may peruse it.

Library

The File Library contains material donated by members or visitors. Most files pertain to hardware manufactured by TANDY or any other hardware that is sufficiently compatible to allow quick or no conversion. Files may contain programs in any language, system mods or zaps, utilities, text or documentation that will assist other members in gaining better use of their system.

The Library also contains a CATALOGUE to allow callers to quickly search for files of interest. The CATALOGUE contains details on the filename, class, date left, date last taken, times taken, transmit time and purpose of each file contained.

Discussion Room

The Discussion Room contains groups sharing a special and common interest. Callers with sufficient privilege may start a new group or join in to any existing group. All conversation currently held by any group may be perused, and contributions made by the caller.

Committee Room

The Committee Room contains matters pertaining to the administration of SYDTRUG and CLUB-80. Access to this area is restricted to CLUB office bearers.

Enquiry Counter

The ENQUIRY counter contains assistance to the caller in using each of the Clubhouse Rooms.

Using the CLUB-80 Facilities

Two additional features are provided in CLUB-80 to allow callers with a prompting BELL to toggle it ON/OFF, and callers who are experienced enough to toggle the EXPERT user mode. As well, multiple commands are permitted using the semi-colon ; as the delimiter.

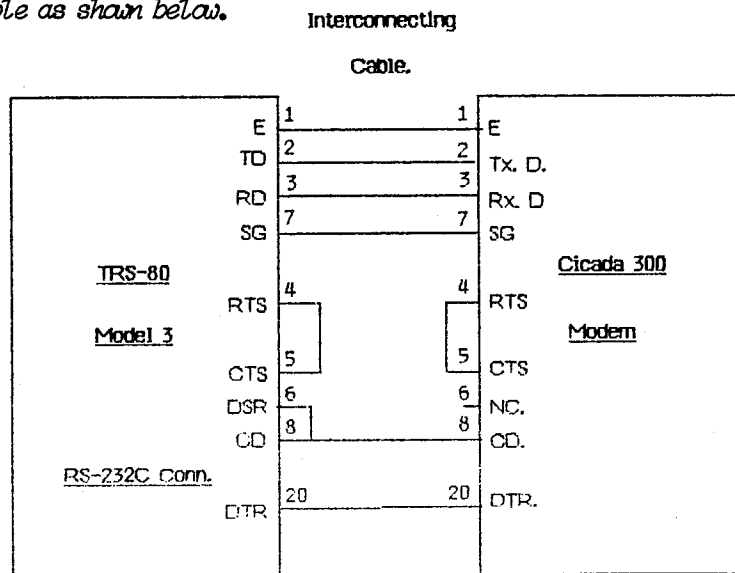
CLUB-80 is menu-driven to allow easy use. At any time, the caller can select either "?" or <Enter> to gain mini-menu assistance. The experienced user can bypass much of this by using the multiple command facilities and if VERY GOOD at using the CLUB by toggling EXPERT user mode (No prompting at all).

CONNECTING THE TRS-80 TO THE CICADA 300 MODEM

by Peter Wignell
759-8024.

Recently I purchased a Cicada 300 Modem to use with my TRS-80 Model 3 computer. I initially used the circuit shown in the Modem-80 manual as a guide to wire the inter-connecting cable to be installed between the TRS-80 and the Cicada modem. This did not work because pins 2 and 3 on the modem RS-232C connector are wired differently to that shown in the Modem-80 manual.

After checking the circuit drawings of the TRS-80 and the Cicada 300 modem I wired the inter-connecting cable as shown below.



With the above interconnection the TRS-80 Model 3 via the Cicada 300 Modem could access the Club-80 Computer Bulletin Board and satisfactorily download various programs from the CBB.

The above system interconnection was also used to access a DEC-20 mainframe computer from home. The system worked satisfactory when using the TRS-80 Model 3 as a terminal working to the DEC-20 but I had trouble downloading a basic program from my TRS-80 to the DEC-20 and the reverse procedure. I think the trouble is more a software, handshake protocol or operator problem rather than a modem or cable problem. Further investigation will be carried out in the future.

THE AUSTRALIAN BEGINNING.

by Evan Miller.

599-3906

During recent meetings, a number of members have asked about accessing The Australian Beginning. As you know, at one time TAB was accessible on a local phone number, even though the mainframe is physically located in Melbourne. With the introduction of TELECOM's new packet switching network and the TAB's new General Electric computer, this service has been discontinued.

The only means of access now are by STD or AUSTPAC. STD is expensive, but reliable. AUSTPAC is less expensive, and less reliable. (It tends to drop out if you don't talk to it nicely!)

The new LOGON procedure works like this:

- (1) dial 01921 (AUSTPAC, 300 Baud)
- (2) wait for the modem tone and connect the modem
- (3) wait five seconds
- (4) enter a capital H<c/r>, you should get AUSTPAC <l/f>
- (5) enter PAD 7<c/r>SET?15:1<c/r>
- (6) enter ?238220000 (TAB subscriber code, include the "?")

You should next get the message COM, followed by the normal TAB headings, followed by the LOGON message. You will notice the PASSWORD prompt over-writes the USERNAME prompt. Don't worry, this is normal.

Of course, nothing is free, TANSTAAFL (There Ain't No Such Thing As A Free Lunch), and the charges are quite complex, but the TAB has elected to charge a flat hourly rate, added to your account each month.

SOLDERING TECHNIQUES.

by Evan Miller

There is a bewildering number of gee-whiz hardware mods for the Model I and III owners, ranging from simple cassette and memory mods to programmable character generators, real-time clocks, voice synthesizers, music generators, and modems. Usually someone, somewhere, will sell you a kit, and you do the donkey work yourself.

OK, so now you've got this box full of plastic bags, some sheets of paper, wire and so forth. You've checked all the bits, and are ready to start. Probably you will be doing quite a lot of soldering, and may be new to this skill.

Be sure to use the right tools. You should have a good 12-15 watt soldering iron and stand (with sponge), an eraser, "dry" alcohol or flux remover, and a de-soldering bulb or solder sucker. In addition, you will need a small pair of cutters, a small pair of needle nose pliers, and possibly a pair of needle nosed tweezers. I also use a pair of wire-bending calipers, but they probably aren't available locally.

The trick to good soldering is cleanliness, heat, and speed. The iron must be clean, hot, and well-tinned. The sponge is kept dripping wet, and is used to clean the iron. You do this by just wiping the tip over the sponge, and thermal shock knocks off the black scale (oxide) that continually forms over the tip. Before starting, give yourself a clear space to work. - If you are soldering mosfet modules, go and set up a card table in the garage, rather than in a room with nylon carpets (Static electrical charges KILL Mosfets stone dead.). You need good ventilation, and plenty of light.

Soldering (cont).

Most kit instructions tell you to start by installing the capacitors and resistors. Fine, but they miss an important step. Clean the area, first, using the eraser, clean the oxide off the areas you are about to solder, handling the PCB by its edges.

Now put the component in, leaving about 1 mm between the component and the PCB, except for IC's. Bend the leads on the other side, about 5 degrees out, to hold the component, and solder it.

The technique to use is FLOW soldering. Use a fine soldering wire, clean the iron, get about a milligram or so of solder on the iron, (wetting the iron), heat the joint with the "wet" side of the iron, both the lead AND the pad, and touch the other side of the joint with the solder. The solder should flow rapidly around the joint, and be just enough to cover the pad and the lead with a thin film of solder. There should be a concave appearance to the fill between the lead and the PCB, and when cool, the surface should be shiny.

When you have finished, brush away the flux residue with alcohol or flux remover. What can go wrong? Well, you could do what every technician has done at one time or another, forget where you put the iron, burn yourself, knock over your parts tray, (try using old egg cartons for holding parts) and stand on the PCB. But lets just talk about soldering now, shall we?

The main problems are solder bridges, and dry joints. The first is when solder joins two adjacent conductors, the second is when the solder doesn't do its metallurgical thing, and fails to make a good joint. NO VIRGINIA! A good joint is NOT Queensland Gold! You can usually pick a dry joint (Virginia!) from the appearance, dull grey surface, blobby looking. De-solder it, and start from square one again.

I usually keep a small jar of liquid resin flux on my bench, and paint a little on the area with an artist's brush. I find this can be helpful in clearing up sick PCB's. Just before I stop, I should remind you, solder is not mechanically sound, so give the joint good support (Virginia! Where DID that kid get her name, anyway?) by wrapping it around a terminal post between 90 to 180 degrees, or allowing 2mm to protrude through the PCB. When soldering hookup wire, don't burn the insulation, and at all times when soldering, be quick.

Assistant Editor's Note:

The above article is worth taking note of for those who are likely to be doing any soldering work. Having done a High Reliability Soldering course, some points need to be mentioned in passing.

- (a) Some liquid resin fluxes are "ACTIVATED" and should be removed completely when soldering is finished.
- (b) Alcohol does not completely remove most resin based fluxes, but will simply spread it across the surface of the P.C.B. (Flux remover followed by solvent should be used.)
- (c) The most important point to remember when preparing printed circuit boards, is to cut the leads of all components BEFORE soldering is done. (NOT AFTER as this causes stress to the solder joint.)

BUZZER FOR THE FAX-80 PRINTER

by Darrell Hegarty

(02) 624 2824

The FAX-80 printer (and probably other look alikes) is not fitted with a buzzer. Although this is not a major drawback, this modification describes how to fit one and be driven **MAD** by the darned thing going off when the printer is turned on without paper!

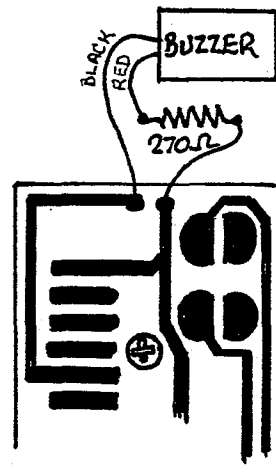
You'll need:

1. A soldering iron and some fine solder.
2. A 270 ohm resistor (Dick Smith, Cat. R-1060 or R-1260.)
3. An electronic buzzer - (Dick Smith, Cat L-7022, cost \$1.95).

Open the printer case, and you'll find a PC board mounted on the lid of the case. The REAR portion of this board is shown in the diagram. You'll need to remove this board to connect the buzzer into circuit. There are two plastic 'lugs' adjacent to the board meant for mounting a buzzer, but the Dick Smith buzzer won't fit onto these lugs - I just mounted mine on the lid with some double-sided tape. The resistor was necessary to lower the volume of the buzzer, as without this resistor, the sound level was rather high.

Simply connect the buzzer and resistor as shown in the accompanying diagram, and you'll have a buzzer active on your printer, provided that you have the correct DIL switch settings. You may need to solder a wire link for the DIL switch buzzer enable, (the handbook tells where,) as my FAX-80 didn't have the DIL switches fitted either!

You may also like to purchase two DIL switches, and fit them while you have the case open - you'll need a 4-way switch and an 8-way switch. Just remove ALL wire links from the switch positions, and fit the two switches, making sure that you set them as per the instruction book. These switches will cost about \$4.00. Dickie only has an 8-way switch at \$2.40, so you'll need to go elsewhere for the 4-way switch.



UPGRADING THE TRS-80 MODEL 1 TO 64K OF DRAMs

by Errol Rosser

(02) 709-7646

For those readers who wish to convert their Model 1's to 4164 type 64K DRAMs (Dynamic Random Access Memory), here is a modification to allow uses of Motorola 6665's or similar 128 cycle refresh 4164's. The T.I. TMS4164 is unsuitable for this application because it requires a 256 refresh cycles and the Z80 only generates 128 refresh cycles then repeats the same 128 cycles afterwards. This happens because the Z80's refresh register (R) is a 7 bit binary counter with the eighth bit as a separate single bit memory changed only by the software and the "Master Reset" signal.

These alterations have been successfully made on both a 'D' series and a 'G' series board and the track layouts were the same. If anyone finds a Model 1 that doesn't match, please contact me.

64K RAM (cont).

Please note that these modifications require the electronics board to be removed from the case and much care should be used when cutting the tracks and when soldering the straps. I used an art knife with a small blade to cut the tracks, a magnifier to check that the cuts were clean, and wire-wrap wire for the straps. The whole job took approx. two hours to complete, including testing so don't rush in expecting to do it in 10 minutes.

Figures 1, 3, & 4 are on the circuit side and 2 is on the component side.

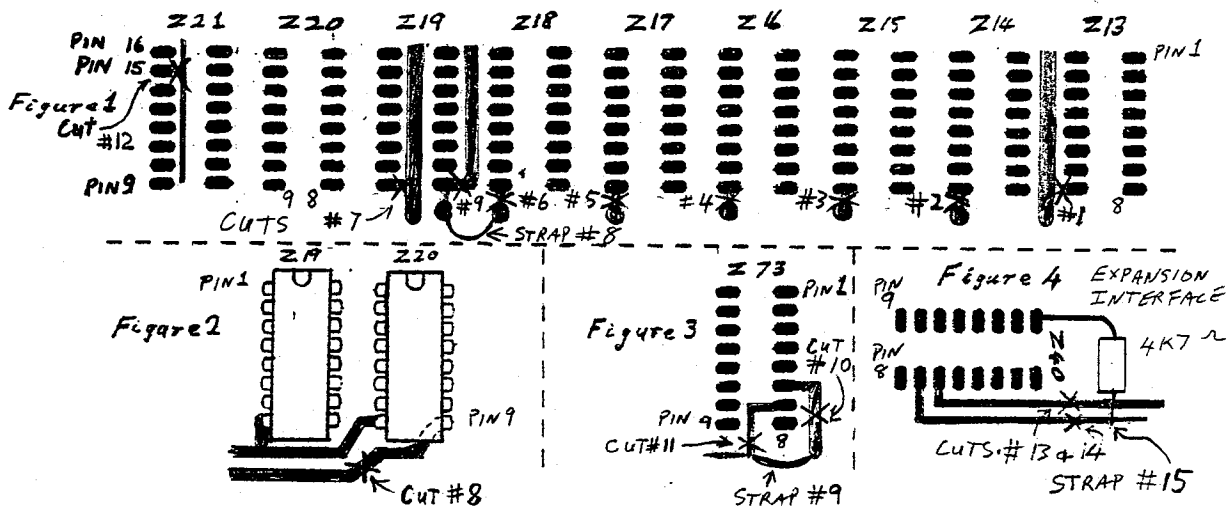
Part 1 Tracks to be cut :-

- | | | |
|---|------------|---------------|
| (a) Remove +5V from pin 9 of Z13 to Z20 | cuts #1-#8 | figures 1 & 2 |
| (b) Remove +12V from pin 8 of Z19 | cut #9 | figure 1 |
| (c) O/C *RAS from Z73 pin 5 | cut #10 | figure 3 |
| (d) O/C Z73 pin 6 from Z21 pins 2 & 14 | cut #11 | figure 3 |
| (e) O/C A14 from Z21 pins 1 & 15 | cut #12 | figure 1 |

Part 2 Straps to be added :-

- | | | |
|--|------------------|----------|
| (a) +5V to Z19 pin 8 | strap #8 | figure 1 |
| (b) Z13 - Z20 pin 9 to Z51 pin 12 | straps #1 - #7 | |
| (c) *RAS to Z21 pins 2 & 14 at Z73 | strap #9 | figure 3 |
| (d) Z73 pin 6 to Z21 pins 1 & 15 | strap #11 | |
| (e) Z38 pin 11 to Z73 pin 5 & Z51 pin 14 | straps #11 & #12 | |
| (f) Z38 pin 9 to Z51 pin 13 | strap #14 | |

If you have an expansion interface then one alteration will be required in it to prevent the selection of the RAM sockets in there. The tracks to Z40 pins 6 & 7 are to be cut and then joined together and pulled up to +5V by a 4K7 resistor as per cuts #13 & #14 and strap #15 in figure 4.



SETTING VARIOUS PRINTING MODES FROM VISICALC.

by Louis Viaggio.

708-3045.

Getting a printout of the contents of a window in VISICALC is quite a simple procedure not so if you want a compressed or special format hard copy, the manual hardly mentions the subject, so for a long time I have been searching for a way to accomplish this in dozens of books but to no avail, until the December 83 edition of BASIC COMPUTING, there was the article I had been looking high & wide for: "How to send printer control codes from VISICALC".

Visicalc Printing (cont).

As soon as I got home much to my wife's horror (walked past her, the kids, and a baked dinner), I went straight to my computer full of great expectations.

After a couple of hundred %\$&#'"%&\$%?<> tries I found the bloody thing would not work, (there is a correction about the article in the Feb.84 Edition but it still did not work).

Later I remembered reading something about sending printer control codes through VISICALC in one of the 80 MICROCOMPUTING magazines and sure enough I found it in the April 83 edition (as at the time I did not have a printer I did not take much notice about the printing routine) listed under the title VCMD on page 210.

For those with a model 1 version of VISICALC, VCMD/CMD is a very useful editing utility, it allows you to edit, delete, insert, convert entries from label to value and vice versa, etc.... Also it contains a printer setup command feature, I will not elaborate more on the subject, try & read the article or borrow a copy of the magazine.

Now for the technical stuff.

VCMD/CMD must be in memory for the setup to work, these are the following codes.

Compressed

After getting in the printer mode the top of the screen will show:

Print: lower right, "&,-,or+

Type> "

Setup or Enter

Type> left arrow, O (capital O, lowercase o) or (/) — ENTER —

**** Left arrow generates an H character ****

Print: lower right, "&,-,or+

Type> cell location of lower right of text to be printed EG... (X50) — ENTER

The full text up to the cell location will now be printed in compressed mode

Double Wide

At Setup or Enter

Type> left arrow, N (capital, lowercase) or (.) — ENTER —

Print: Lower Right, "&,-,or+

Type> cell location, — ENTER —

Note : Only the row where the cursor is will be double wide, the rest of the text will be printed in normal mode.

Double Print (Strike)

At Setup, enter the characters for compressed (left arrow, O or /) — ENTER

On Lower right prompt do not enter cell position instead return to Setup again by entering, " then :

Type> left arrow, N or . (As for double wide) — ENTER —

Now you type lower right cell position, again only row where cursor is will be in double print mode.

Underlining

Underlining is fairly straight forward the only stipulation is that the first character in the top left most cell be a minus sign (-), this will not be printed.

At Setup, enter left arrow, up arrow (-) — ENTER —

Type> lower right cell position & all the text will be printed underlined. Rest of text will be compressed.

Now some conditions are in order:

1/ VCMOD/CMD must be in memory

2/ This facility works fine under LDOS 5.1.3 & 5.1.4. I can not get it to work properly under NEWDOS, it re-boots most of the times instead of printing.

My computer is a SYSTEM 80 MK II & my printer is EMTEX EX-80. I don't see any reason for this facility not to work on the TRS-80 model 1 and any EPSON compatible printers.

I hope that this small contribution to the newsletter will help someone & I urge anyone with anything to contribute to do so and don't be shy because we are not all computer experts, I have only had my computer for 18 months and only consider myself a beginner, so if everybody contributes some small article then surely everyone will gain a lot.

If you have any queries about this article please don't hesitate to give me a ring on 708-3045 between 5.30 and 8.30 PM.

Here are some printing samples.

```
<---,N
                SAMPLE PRINTOUT
This is a sample of double wide
```

```
<---,n
                SAMPLE PRINTOUT
This is a sample of double wide
```

```
<---,.
                SAMPLE PRINTOUT
This is a sample of double wide
=====
```

```
<---,O
                SAMPLE PRINTOUT
This is a sample of compressed
```

```
<---,o
                SAMPLE PRINTOUT
This is a sample of compressed
```

```
<---,/
                SAMPLE PRINTOUT
This is a sample of compressed
```

```
<---,/,",<---,N or.
```

```
                SAMPLE PRINTOUT
This is a sample of double print
```

```
=====
```

```
<---,up arrow
                SAMPLE PRINTOUT
This is a sample of underline
```

AUDIO AMPLIFIER IN YOUR VIDEO.

by Gary Bryce.

628-5058

Some of you may remember one club meeting a few months ago, when after a long day demonstrating a particular music program, the jury rigged amplifier that I had connected to my system decided to give up the ghost in a rather spectacular manner (and boy didn't it STINK!!).

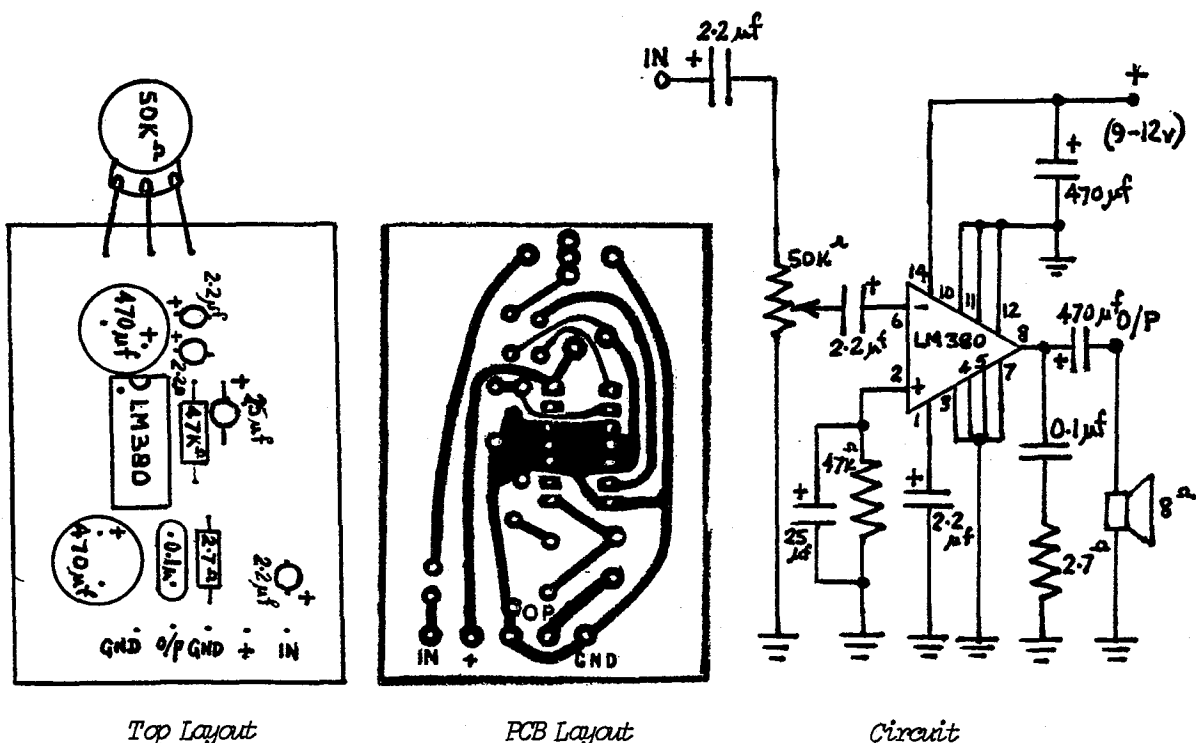
This prompted me to develop a simple amplifier that gave a better quality output than the converted radios and such that we have all been using (this includes the inbuilt amplifier of the SCRAP-80 (Blue Label).

So here is a simple amp which I feel meets the all the requirements I needed, I hope that it will meet your own needs. The details of the amplifier, with volume control, which mounts in and is powered from the video, follows.

PARTS REQUIRED

- | | |
|--|--------|
| 1 x LM380 Audio Power Amplifier - | Z-6080 |
| 2 x 470uF Electrolytic Capacitor (FCB) | R-4420 |
| 1 x 25uF " " " | R-4320 |
| 3 x 2.2uF Tag Tantalum Capacitor | R-4730 |
| 1 x 0.1uF Ceramic Capacitor | R-2360 |
| 1 x 2.7ohm 1/4W Resistor | R-1012 |
| 1 x 47Kohm " " | R-1114 |
| 1 x 50Kohm Potentiometer (Log Scale) | R-6823 |

The Circuit Diagram, PCB layout and Component position drawing appear below. The Video Monitor may not be fitted with an in-built speaker, if not an 8 ohm speaker of not less than 2 Watt power rating should be used. I have left details of fitting and positioning to you, as this varies between different monitors.



WRITTEN TO A FRIEND IN SYMPATHY - HUBBY BOUGHT A COMPUTER!

I should have written sooner,
But I couldn't find the words.
To send my deep condolences.
Now that hubby's joined the NERDS.

They say that "All computered".
Is the up and coming age,
But no-one seems to care about
The wife with tears of rage

"To us it just won't happen",
I'm sure is what you'll say
But mark my words my friend because
There'll surely come a day

When your lovely house needs painting
The doggie wants a bath
To reach the line you need your boots
And all he does is laugh

It's not the laugh that matters
Or his "Talking to the screen"
And you'll hardly seem to notice
When his gills go slightly green

The thing that matters most of all
- Get it while it's starting
It's the way their bums go
"Ni - dip - bloop"
Instead of normal farting.

The Podstaw Widow.

FOR SALE

Coloured Ribbons for "EPSON" printer -(NOT CLONES) -
(Blue, Red, Brown and Green)
contact : Denis Pagett - 773-4433.

\$20 each ONO

WANTED

Information on TANDY ACCOUNTS PAYABLE - cat 269-1554 -
contact : Jim Byrnes 649-1089

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