

SYDTRUG NEWS

SYDNEY TRS-80 USERS GROUP NEWSLETTER

Volume 4, Issue No. 2, ---- October 1983.

IN THIS ISSUE.

The predominant themes of this issue are Bulletin Boards and Modems. With an excellent article on the basics of Computer Bulletin Board Systems by Michael Cooper, news of an upcoming modem kit and a report on the special interest meeting on the possibility of setting up such a system within the Sydney TRS-80 Users Group.

Also within this issue you will find a couple of short articles on setting up the Forms parameters on a C.itch 8510A printer, and another on the presentation of Menu's within a BASIC program. These are quite simple programs and I hope they may prompt those of you who are familiar with BASIC, Assembler or any other language (not forgetting cassette users) to submit similar articles for the benefit of our new members.

I have taken note of comments on the previous Newsletter and will not in future include lengthy source listings within the Newsletter. Instead any such programs will be available as a Disk file at the monthly General meeting, or for those not able to attend, as a paper listing on receipt of a stamped addressed envelope (Large Please). So that all that will appear will be the aim and features of any exceptionally lengthy programs.

Also as a result of comments on the previous issue, a Bits and Pieces for Sale section makes its first appearance with this issue. So any member with who has surplus gear for sale (or exchange) can have it included by giving me the details at any of the three monthly meetings or by posting the details to the Groups' postal address listed above.

The final article of this issue is the program ENVIRON/SCE by Rowan Evans which was forshadowed in last months issue, the instructions for the use of this program were supplied by Geoff Nyland.

Before signing off till the next issue there are a few comments which I would like to make with regard to the support of the Newsletter by YOU the members. In short there has been very little, except for the efforts of Messrs Evans, Cooper, Ayling, Nyland and myself there would be NO Newsletter. It appears that the trouble our previous Editors, Ben Barrat and Col Elphick had in relation to this issue continues. So I must re-iterate the old maxim "You only get as good as you give". Any articles, programs, fixes, tid-bits or reveiws will be much appreciated.

Your Editor
Gary Bryce.

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WHATS HAPPENING

Latest news to hand is of a new Modem Kit soon to be available in Sydney. News is, is that this Modem circuit will be published by ELECTRONICS AUSTRALIA, possibly in their January 1984 issue.

Although extremely versatile it is said that due to the fact that this kit uses a single chip for its modem functions, those building it should not suffer the setting up problems which have plagued some members who have built the ETI unit.

A list of known specifications appears below :-

CCITT standard	Bell Standard
300 Baud	300 Baud
600 "	600 "
1200 "	1200 "

Auto Answer and Auto Dial.

Some of the benefits of this dual standard are the possibilities of communications with the States and local communications at higher baud rates where distance and lines will permit.

For those that cant wait, I have news of a special offer on the CICADA modem to club members from SSC Computing Co. Pty. Ltd, 1st Floor, 93 York St, SYDNEY. Stan Falinski is offering these Telecom approved 300 Baud Data Modems at the excellent price of \$175.

MEETING NEWS

The topics for discussion at the September special interest meeting were Modem communications and Computer Bulletin Board Systems (CBBS). After much discussion it was resolved to recommend to the next General meeting (October) that SYDTRUG setup such a system, with the funding of the system to be determined at the general meeting.

As a sequel to the meeting Ted Rohmer, Mike Cooper and Rowan Evans are attempting to setup a system for experimentation at Teds' premises using his recently acquired Auto answer modem and some software converted from a CP/M system. The likely features of such a system include :-

1. Mailbox facility.
 2. Newsletter.
 3. File Transfer utility.
 4. Information service.
 5. Help facility.
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ARTICLES FOR PUBLICATION

All articles submitted for publication will be gratefully received. If at all possible these articles should be submitted as a straight ASCII file with no embedded formatting or control codes, if this is not possible, short typed or neatly hand printed (i.e. READABLE) articles are also acceptable. Submissions may be made at any meeting or by post to the groups' postal address.

COMPUTER BULLETIN BOARD SYSTEMS

from Michael Cooper

The Computer Bulletin Board System (CBBS) is the latest innovation offered by the microcomputer fraternity. Originally begun in the U.S.A. (where else) these remotely controlled computer systems began spreading rapidly throughout the country. The main stream systems grew from the CP/M Users Group (CPMUG) which encouraged the writing and distribution of Public Domain (Non copyright) software for the benefit of all. Individuals within CPMUG began to develop concepts in Telecomputing, particularly in regard to the setting up of a Host microcomputer system. This idea quickly evolved into the Remote CPM system, however some standard protocols were urgently needed. The most important two were data speed and data format.

When sending data serially over the telephone, a method called asynchronous is the cheapest to implement. This method relies on control information being included with the data bits. The format chosen by CPMUG was 8-bit data length, 1-bit Stop, No parity bit at 300 baud data rate. This format has now become universal on CBBS and Remote CP/M (RCPM) systems.

The other main issue to resolve was choosing a method of sending an accurate copy of programs via the telephone. Ward Christensen wrote the program to do this, choosing a method that sends data in sequentially numbered blocks of 128 characters, with a single byte checksum. Each block consists of 132 bytes. Byte 1 is the Start of Block signal, value 1H. Byte 2 is the block number (in binary starting at 1 and wrapping round from FFH to 00H). Byte 3 is a "One's Complement" of the block number (i.e. 255-Block No.). Bytes 4 to 131 are the data bytes, any value from 00H to FFH. Byte 132 is the sum of all the data bytes, with the carry ignored.

The receiving system performs a checksum calculation on each data byte received and finally compares this with the checksum received from the Host. If they both agree the receiving system sends an OK signal (05H) to the Host and waits for the next block. Should the checksums not agree, then the receiving system sends a "re-transmit last block again" signal (15H). The software will make up to 10 tries to transfer error free. Not surprisingly, this has become known as Christensen Protocol, and is used only when sending or receiving files.

For our purposes, telecomputing allows TRS-80's and Sys-80's to communicate with any other computer from Apple to Zilog. The requirements to connect up consist of a 300 baud Modem, a RS-232C Serial Port in your expansion interface (or somewhere), a telephone line and terminal software.

There are any number of terminal programs available for our systems, many free with limited capabilities, others more sophisticated that cost money. The two I am most familiar with is LComm, which comes free with LDos, and Modem-80 which costs money. Lcomm is a good and easy to use program that performs all the basic functions required as well allowing the entire dialogue to be sent to a file or the printer or both. Additionally you can send a text file down the line to the Host machine. The only function LComm lacks is the Christensen Protocol Send and Receive, however it is still useful for CBBS when you're only reading and leaving messages.

For those of you with LDOS this is how you set it up!

.First you initialise the RS-232C driver to the Comm Line Device (*CL)
SET *CL to RS232R/DVR (BAUD=300,WORD=8,STOP=1,PARITY=N)
.Model 3 owners use RS232T/DVR, the parameters are the same.

.Next you invoke the Keyboard driver for type ahead and spooling.
SET *KI KI/DVR (TYPE)
.Now your ready to run LComm
LCOMM *CL
.If you copy this into a "DO" file called COMM/JCL and then set
.the AUTO DO COMM, it will all load itself, but we must end with
//STOP
.Else we don't stay in LComm.

I also find it very useful to SYSTEM (SYSRES) all the system files in high memory (SYS1,2,3,4,8,10,11,12) and set up the Supervisor table SYSTEM (SVC). This is then configured permanently, SYSTEM (SYSGEN), and will load from the configuration file on Boot. Thus you can create a disk that automatically loads all the System files into high memory then performs the Job in the COMM/JCL file. This sets up and executes the LComm program.

If you wish to upload or download programs from the RCPM systems you must have Modem-80. This allows the interchange to go smoothly. Modem-80 likes Newdos-80 V2.79 better than it likes LDos, so put it on a Newdos disk. You just run it from Newdos Ready and it sets itself up at 300 Baud, 1 Stop, No Parity, 8 bit word. It initialises to a screen showing keyboard functions (the <CLEAR> key is used a control key) and your'e ready to go. So dial the number of your friendly RCPM (see list below). It answers with a second or two of silence, then you hear a tone. This is the carrier from the RCPM. Make sure your Modem is in "Originate" mode, and then switch it on line, then hang up your handset. The Carrier detect light on your modem should come on. If it doesn't, press the <ENTER> key once or twice. Success comes in the form either of:

HH:MM:SS (the time)
or
HOW MANY NULLS?
To which you answer 0

Next comes: CAN YOUR TERMINAL DISPLAY LOWER CASE ?
Your answer is either Y or N as the case may be.

You may now be asked: DO YOU WANT TO "FLIP" THE MODEM ?
This allows you to change from "Originate" to "Answer" if you want, but is not recommended unless you are having difficulty getting a good contact going.

Next comes: WHAT IS THE NAME OF DIGITAL RESEARCH'S STANDARD DEBUGGER ?
Answer is DDT

The logon messages will now begin to flow from the RCPM, then you will be asked for your name, and if the first time on, you will answer the user survey. Next elect to go to CPM so you may transfer files.

You will get a prompt either: A> or A0>

You reply: XYAM
which will load the transfer program in the Host machine.
XYAM will then sign on and give you a prompt like XYAM(A0) or XYAM(A)

Ok, so now you're ready to upload or download software. First have a look around!
DIR will give drive A files
DIR B: will give drive B files.

SYDNEY TRS-80 USERS GROUP NEWSLETTER

Notice the files names use a "." instead of "/" to delimit the extension. When you find the file you want and are ready to download you type:

S Filename.ext (where Filename.ext = the name of the file)

The Host will reply that the file "Filename.ext" is open.

Now to receive the file you hit the <BREAK> key. Modem-80 will show the main menu. Select option R to receive a file. You will be asked for the Filename to save it under, reply "Filename.ext" and press <ENTER>. Modem-80 will open your receive file then signal the XYAM program to start sending. From now on its automatic, the data will pile down the line until the end, the file will close and you will be back at

XYAM(A0)

To send a file is the reverse procedure.

R Filename.ext (This time you choose the name)

Again you will be prompted by XYAM that the file is opened, so then hit <BREAK> to get the main menu. This time select option S to send a file, answer the prompt with your Filename/ext and away you go again. This time you just see the block numbers as they are transmitted. At the end you will again be back at

XYAM(A0)

To finish off use either <CNTRL>-C or OFF or BYE

Bye will usually log you straight off whereas Off puts you back into CPM! i.e. A> or A0>

To finish, you type BYE and the system will ask you for any comments and then disconnect you. To exit Modem-80 use the <BREAK> key to show Main Menu and select X.

Here is a list of all the free RCPM's and CBBS.

(02) 663-0151	Micro-Lab RCPM (Telecom)
(02) 808-3536	Sydney Public Access RCPM
(02) 997-1836	Software Tools RCPM (Bill Bolton)
(03) 762-5088	Micom CBBS (Microcomputer Club of Melbourne)
(051) 34-1563	Gippsland RCPM
(08) 367-6068	Perth RCPM

Try them out, if they aren't engaged

FOR SALE - Bits and Pieces.

TANDY Line Printer VIII (LP8) - Excellent condition only 18 months old -- \$590 O.N.O.

JACKSON AUTOMATION Line Filter - 240v/240v 300 Watt -- \$59

Contact - Chris Fairbank -- 02-498-1014.

LEVEL II ENVIRONMENT.

from Rowan Evans & Geoff Nyland.

PROGRAM DESCRIPTION.

ENVIRON/SCE is a utility program which, in conjunction with LMOFFSET, CMDFILE or similar utilities, enables a machine language program which is written for a Level II machine to be transferred from tape to disk and to be executed as a /CMD file when it would otherwise conflict with the DOS.

INSTRUCTIONS FOR USE.

1. - Load program from tape using LMOFFSET, CMDFILE etc.
- If it does not overlay DOS, save the program to disk using a /CMD extension and Exit.
- If it does overlay DOS, continue on.
2. - Record the Start, End and Entry addresses (in HEX) for the original program position as displayed.
- Still in the load utility, enter a new Base address, such that the program will load above the DOS when called.
- Record the NEW Start, End and Entry addresses displayed.
- No appendages or offset drivers should be added.
- Save the program to disk, using a temporary name (I suggest PROG/TEM).
3. - Enter an assembler (eg :- EDTASM or EDAS) and load the Source file ENVIRON/SCE.
- Edit line 60 and change the ORG address to the New END address.
- Edit line 618 to change the LD value to the New START address (HL,XXXXH). If you always start these programs at the same point, it is worth changing the source code of ENVIRON/SCE to reflect this regular address, and saving the source code back to disk.
- Edit line 620 to change the LD value to the Original START address (DE,XXXXH).
- Edit line 630 to change the LD value to the length of the program using the format New END address minus New START address (BC,New END - New START). When you assemble the file the assembler will calculate the actual length.
- Edit line 650 to change the JP address to the Original ENTRY point.
4. - Follow the normal processes to assemble the modified ENVIRON/SCE and save under a temporary filename. (i.e.:- PROG/EVR).
- If you have zero errors, then take note of the hex number on the far left of line 650. In the original assembled version of ENVIRON/SCE, this number is BD5F. Add 2 to this number (i.e.:- BD5F becomes BD61). This is the New END address.
- Exit the assembler.
5. - Load the temporary program PROG/TEM.
- Load the assembled version of ENVIRON/SCE (i.e.:- PROG/EVR).
- Dump the new file to disk using the appropriate filename (i.e.:- progname/CMD), according to the syntax pertaining to the DOS being used. Using the Start address of PROG/TEM as the Start address, End address of PROG/EVR as the END address and the Start address of PROG/EVR as the Entry address.
6. - Type progname <ENTER>. If the program does not load and run as per a normal /CMD file, you have made an error and must start again.

The Source listing of ENVIRON/SCE appears on the following pages.

SYDNEY TRS-80 USERS GROUP NEWSLETTER

```

00010 ;First part of this code is Non-DOS reset processing
00020 ;to initialise all Level II vectors.
00030 ;This should work for most programs.
00040 ;Although it does not with Basketball or Tenpins as these
00050 ;programs overlay all Level II Device Control Blocks.
00060      ORG      OBD00H      ; Demonstration Start address
00070 INIT      DI            ; Disable Interrupts
00080      XOR      A            ; Zero the A Register
00090      LD       HL,06D2H     ; The next
00100      LD       DE,4000H     ; 11 Lines
00110      LD       BC,36H      ; duplicate
00120      LDIR            ; the ROM code
00130      DEC      A            ; beginning at
00140      DEC      A            ; 0676H, to
00150      JR       NZ,INIT+2    ; initialise the
00160      LD       B,27H         ; Level II D.C.B.s
00170 INIT2     LD       (DE),A ; and vectors in
00180      INC      DE            ; the communications
00190      DJNZ     INIT2        ; region.
00200      LD       DE,4080H     ;The
00210      LD       HL,18F7H     ;next
00220      LD       BC,27H      ; 32
00230      LDIR            ; lines
00240      LD       HL,41E5H     ; duplicate
00250      LD       (HL),3AH      ; the
00260      INC      HL            ; code
00270      LD       (HL),B       ; beginning
00280      INC      HL            ; at 0075H
00290      LD       (HL),2CH     ; to initialise
00300      INC      HL            ; BASIC
00310      LD       (40A7H),HL    ; pointers,
00320      LD       DE,012DH     ; variables,
00330      LD       B,1CH        ; buffers,
00340      LD       HL,4152H     ; exits,
00350 INIT3     LD       (HL),0C3H ; and
00360      INC      HL            ; move
00370      LD       (HL),E        ; code
00380      INC      HL            ; from
00390      LD       (HL),D        ; 18F7H
00400      INC      HL            ; -191DH
00410      DJNZ     INIT3        ; to 4080H
00420      LD       B,15H        ; -40A6H
00430 INIT4     LD       (HL),0C9H ; various
00440      INC      HL            ; tables
00450      INC      HL            ; and
00460      INC      HL            ; subroutines.
00470      DJNZ     INIT4        ; duplicating
00480      LD       HL,42E8H     ; the
00490      LD       (HL),B        ; Initial
00500      LD       SP,41F8H     ; Program
00510      CALL     1B8FH        ;Loading Sequence.
00520 ;
00530 ; This is the relocate down appendage normally done
00540 ; by the tape loading utility.

```

```

00550 ;
00560 ; Dump the combined PROG/TEM - PROG/EVR file to Disk.
00570 ; Using the following syntax :-
00580 ;
00590 ; NEWDOS - DUMP PROGRAM/CMD:dn XXXXH YYYH ZZZH
00600 ; Others - DUMP PROGRAM/CMD:dn (START=X'XXXXH',END=X'YYYH',TRA=X'ZZZH')
00610 ;
00612 ; Where - XXXXH is the Start address of PROG/TEM
00614 ;          YYYH is the End address of PROG/EVR+2
00616 ;          ZZZH is the ORG address of PROG/EVR
00617 ;
00618      LD      HL,XXXXH      ; Start addr of PROG/TEM
00620      LD      DE,DDDDH      ; Original Start address
00630      LD      BC,XXXXH-ZZZH ; Length of program
00640      LDIR     ; Move it
00650      JP      EEEH          ; Original Entry address
00660      END      INIT         ; Program end

```

C.ITOH FORMS SETUP

from Mike Cooper.

This is a short BASIC program to set the Forms parameters for the C.Itoh 8510A printer. The printer V.F.U. is set for a 60 line page with a 6 line advance over perforations.

```

20 CLEAR 200
30 LPRINT CHR$(29);      ' Start Load command
40 LPRINT CHR$(65); CHR$(66); ' Set Top of Form
50 LPRINT STRING$(116,64); ' Set 58 lines of no Tabs
60 LPRINT CHR$(67); CHR$(64); ' Set Bottom of Form
70 LPRINT STRING$(12,64);   ' Advance paper by 6 lines
80 LPRINT CHR$(65); CHR$(64); ' Set Top of Form next page
90 LPRINT CHR$(30);        ' End of Load command

```

BASIC TID-BITS

from Gary Bryce.

This short BASIC program demonstrates a different method of implementing a MENU. When MENU's are usually implemented they normally take the form shown below on the left. These menu's can be made to look more professional and increase ease of use by constructing the program as shown below on the right.

30 PRINT" ***** MENU *****"	30 PRINT" ***** MENU *****"
40 PRINT" 1. Edit Records	40 PRINT" <E>dit Records.
50 PRINT" 2. Delete Records	50 PRINT" <D>elete Records.
60 PRINT" 3. Sort Records	60 PRINT" <S>ort Records.
70 PRINT" 4. Add Records	70 PRINT" <A>dd Records.
80 INPUT"Enter your choice (1,2,3 or 4)";C	80 A\$=INKEY\$: IF A\$="" THEN 80
90 ON C GOSUB 100, 200, 300, 400	90 C=INSTR("EDSA",A\$)
	100 ON C GOSUB 110, 200, 300, 400

The INSTR command is very versatile and often neglected this example is but one of the varied ways that it may be used.