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January 1990 THE HUGgers NEWLETTER Volume 9, Number 1

TALKING SMART
Part IX

by JIM ELLIS

(Cont'd from previous issue.) I know that these articles have taken some time to cover what some may feel could have been covered more quickly, but then I am not a writer by trade. They were easier to put together than to come up with a new topic each month. I hope I have been able to help just one person in their endeavor to operate a smart modem. As they used to say on "Hill Street Blues", "Item Last!" I would like to close this series by repeating the schematic of how to wire the cable from your computer to the smart modem. I have used if over three years and have not had any problem with it at all. I included it in part IV, in the October '88 issue of the HUGgers Newsletter. But, for those of you who may not have access to that article I will include it here, again.

```
Smart Modem TI RS-232
Pin Pin
2 <----------------------<< 3
3 >>---------------------> 2
6 >>---------------------> 20
7 ---------------------- 7
20 <---------------------<< 6
```

The following is a list of parts:
2 conn. R/S part #276-1547 $1.49 ea.
2 hoods R/S part #276-1536 $1.99 ea.

Prices may vary. The wire gauge can be either #22 or #24, both will solder nicely to the connectors. If using stranded wire, make sure that none of the strands stick out and short to any of the other pins. I will not go into the labeling of the pins. The ">" and "<" signs point the direction of data flow. I will however, explain pin 7, it is ground, so consequently signals flow both ways, so I have not bothered to put an arrow on that line. Use and enjoy. This concludes the series on smart modems, if there are other articles you would like to see handled in like manner, let Bob Stahlhut or myself know and we will see if we can get someone to do series on that subject. JE

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JANUARY 21 1989

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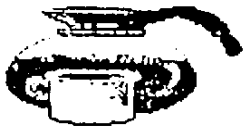
(Reprint from NORTHERN NEVADA 99'ers "OUTPOST", Nov., 1989)

POINT TO



PONDER...

LET'S ROUND UP THE MAVERICKS!
by Jim Peterson

A maverick, for the information of you tenderfeet, is a young Texas critter which has lost its mama. There are over a million of them hiding in the closets of America, and I think it's time for a roundup!

There are perhaps 200, possibly 300, TI user groups in the United States and elsewhere in the world. A few boast of several hundred members, but some have no more than a dozen, and I doubt that the average is more than 50 users actually paying dues and attending meetings. That computes to at most 15,000 members of the "organized" TI world. Of course, there are many others who keep in contact by subscribing to those magazines which support the TI, and still others who are kept up to date on new developments by the catalogs from the big mail order houses. Still, no matter how you compute it, there are certainly well over a million owners of the TI-99/4A who have no way of knowing that our computer is still alive and well.

These people have read that Texas Instruments abandoned the computer. They have seen the supplies of hardware and software disappear from the big retail stores. Many of them bought their computer during the final suicide sales, therefore never got on the mailing list for the Texas Instrument newsletter.

And yet, relatively few of the TI-99/4A are showing up in the classified ads and in the garage sales. A recent national survey found that the TI-99/4a was owned by more people than any computer except the Commodore. True, many of these owners are only interested in plugging in a module and playing a game. But some have a deeper interest - and even five percent of a million is an awful lot of people!

When I bought my TI, in March of 1982, I searched in vain through the articles and ads of every magazine on the newsstand, for anything relating to my computer. It almost seemed that there was a conspiracy of silence. I had taught myself to program, and written dozens of programs, before I finally made contact with the TI world. I was once a maverick, and I can sympathize with those who are mavericks now.

Is your user group dwindling away, as some of your members move on to bigger but not necessarily better computers, while others become so polarized in their interests that they have little in common with each other? Are your givers tired of giving to your getters, and your doers tired of being used by your users? Do you miss the enthusiasm and excitement of your first meetings, when everyone was learning together? Does your group need a transfusion of fresh blood? The donors are out there and waiting, if you can find them!

Do you want to see new hardware, new software, new publications for your computer? The bigger the market, the more that will be produced to be marketed. And the market is there - it just doesn't know that it's there!

The user groups are the only ones who can round up the mavericks. You can do it by publicizing your meetings, by letting the TI owners in your community know what you can do for them. You can get newspaper publicity and television publicity. Some of you are already offering classes in programming or in computer use to the general public, to the schools, to libraries, to senior citizens, to foster children, to the handicapped. Those are very fine endeavors in themselves, and they can also bring the publicity which will attract new members. And here and there among those new members will be an ingenious hardware hacker or programming genius who will make our computer better than ever.

NOTE: This article was intended to be in last month's issue. -Ed.

Introducing A New Dimension To The TI World

RAMBO is a special hardware/software expansion kit designed for the TI99/4A and MYARC GENEVE 9640 computer systems to upgrade HORIZON ramdisks. RAMBO is based on a special chip which is fully software and hardware compatible with all HORIZON ramdisks from the first HRD to the latest 3000 series.

The current HORIZON was designed mainly to be a ramdisk. Its RAM was based at >4000 (TI99 DSR SPACE) with a 6K Main DSR for the ROS, etc. and 2K pages of RAM to allow reading/writing of sectors. This was fine for ramdisk operations but for writing programs which really executed from the ramdisk memory its was not easy. The program had to be divided into modules of 2K each and could not access other drives, printers, etc. since only one DSR can be turned at a time. Due to this, many software developers including OPA dropped the idea of writing large programs which would run directly off the HORIZON ramdisk.

OPA has now broken this barrier in the TI world by designing a complex chip and PCB which plugs into a HORIZON card and allowing the HORIZON to have two completely different memory paging and access modes. We named this unit RAMDOM-ACCESS-MEMORY-BANK-OPERATOR or RAMBO for short.

With RAMBO installed in your HORIZON you will be able to partition the RAM onboard between RAMDISK and PROGRAM space, allowing you to run new TI or GENEVE programs using this extraRAM as program space, which could be as large as your ramdisk.

RAMBO adds a whole new paging system to the HORIZON which gives the programmer an 8K Main DSR RAM (First 6K reserved for the ROS) at the normal >4000 space but now instead of tiny 2K pages of RAM at the >6000 (TI99 Cartridge space), RAMBO also makes the DSR RAM on/off control independent of the 8K page control. This means the programmer can write large programs in easy-to-handle 8K blocks and access any DRS without using any of the standard 32K CPU RAM.

RAMBO does all this on a tiny 1" x 1" PCB with two special chips. OPA has designed RAMBO to be easily installed in any HORIZON model. All the parts including the six jumper wires come already assembled on the PCB. Thus all the HORIZON owner has to do is plug in the PCB and solder six wires in place. After installation, the HORIZON card works the same to all versions of ROS. Being so, RAMBO is fully software and hardware compatible with all hardware configurations and programs currently compatible with the HORIZON ramdisk.

Included in the RAMBO kit is a diskette containing some sample programs, source code, programming tuitorial, RAM tester, and many other useful utilities. Coming soon from OPA is a new enhancedROS designed to bring out all the features of RAMBO, and a programming newsletter on the latest ideas, etc. All of the above is included in the purchase price of RAMBO.

Price $45.00 US plus $4.50 for shipping. Canadian residents: same price Candadian, Ontario residents please add PST., payable in Money Order or check. (Prices subject to change).

For more information contact:

OPA, Oasis Pensive Abacutors
432 Jarvis St., Ste. 502
Toronto, Ont.,M4Y-2H3,CANADA

or contact Gary Bowser (416)960-0925

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(Reprint from CIN DAY NEWS, AUG, 1989)

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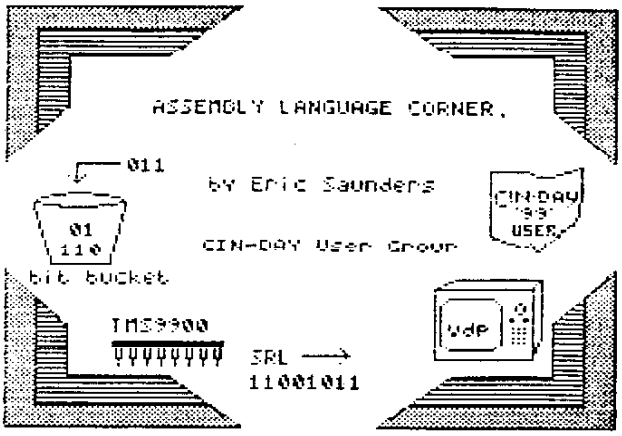

ALC #4: Registers

Let's talk about the most important element of the TI-99/4A - the registers. Registers in a computer are storage places for important numbers. Now the way most computers are designed, the registers are actually a part of the Central Processing Unit, or CPU, which is the chip that powers the whole computer. One most machines, this is where all the true calculating is done, all the adding and subtracting.

As an example, take an Apple computer. The Motorola 6502 chip has three registers: an accumulator, and the X and Y index registers. The accumulator is the true workhorse of the Apple. This is the only place where you can add numbers. A lot of the AL code is moving numbers around so you can manipulate them. The X and Y index registers are temporary storage and used to identify memory locations.

Enter the TI-99/4A with its powerhouse and revolutionary TMS 9900 chip. How many registers does it have? An amazing 16! More importantly, you can use each and every one for addition and subtraction. Tons of working space, right? Actually, you would be amazed at how quickly it gets used. So the hardware wizards at TI came up with a very clever idea: software registers.

Remember I said the 6502 chip has three registers built into it. Well the 16 registers for the 9900 chip are not built into the hardware of the chip. The chip has three registers built into it, one of which is called the workspace pointer, or WP for short. The WP points to the memory location in the computer where the 16 registers start, known as the workspace. You can see the ingenuity of this design when when you realize that all you have to do to get a new workspace is change the value of the WP. When you're building a series of subroutines, each subroutine can have its own workspace simply by changing the value in the WP.

Let's briefly discuss the other two registers that are a part of the 9900 chip before we continue with the workspace. The most important of the two is called the program counter, or PC. This register points to the next instruction of a program to be executed. The other register is the status register, or ST. This register, as its name implies, reflects the status of the computer after the last executed instruction. By examining the value of this register, be will be able to build decision points in out programs, much like an XB IF..THEN..ELSE statement.

Back to the software registers, or workspace. I would estimate that about 85%-95% of the instructions making up an AL program involve one or more of the workspace registers, so we need to understand how to use them. First, the registers are numbered from 0 to 15. We can use these numbers to refer to the registers in our program, but pretty soon it can be confusing. Do we mean register 3, or the number 3? Most AL programmers choose to write their programs with the R option. Every register reference is prefixed with the letter R, so register 3 becomes R3 and register 7 is R7. Here's an example of some AL code showing this practice:

```
      LI     R3,2     Place a two in register 3
      MOV    R8,R1    Copy the contents of
*                     register 8 to register 1
      A      R4,R15   Add the contents of
*                     register 4 to register 15
*                     and place the sum in R15
```

When assembling a program that uses R to distinguish registers, make sure you select the Register option by entering an R in the Options field of the assembler.

See you here next month!

DISCLAIMER

This newsletter is brought to you through the efforts of the officers and members of the HOOSIER USERS GROUP. Every member is encouraged to submit articles.

If you have an article you would like to share with the other members mail it to:

John Powell
327 W. Southern Ave.
Indianapolis, IN 46225

Opinions expressed are those of the author and not necessarily those of the HOOSIER USERS GROUP.

Use This to Write Letters

If you write a lot of letters, or even just a few and you have TI-Writer or one of the clones, the following file may help you. You simply type in the file as you see it listed here and then save it to disk. Any time you want to write a letter just load in the file and you'll be able to write a nice neat and properly spaced letters every time.

You will need to customize your file with your address and make any other changes to conform to your style, but this is the suggested format. On the style shown here, we have also included footer and header commands which you might want to include if you are writing long letters or instructions that require more than one page. If you don't want them for your average letter, simply delete lines 0001 and 0038 that include the .HE and .FO commands.

Once you have customized your file and save it, simply load it into the editor whenever you want to write a letter. On lines 0011 you need to over-write the correct date and on lines 0013, 0014, 0015 and 0016 you will put in the name and address of who you are writing to. Your greeting on line 0018 and you salutation on line 0035 can be in standard form or you can change it as you like. You can then write your letter adding lines or eliminating lines depending on the length. If you entire letter requires more than 58 lines it will automatically use another page.

Don't forget to save your letter after writing it. A handy file name would be the last name of person written to.

We are reproducing below in reduced size a sample of the letter format and the file lines that were required. The format of the headings etc., are taken from the accepted standards used today. With a little experience "LETTERFILE" will find many uses.

```
0001 .HE^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^Name^%
0002 .LM 43;RM 72;FI;PL 58
0003 .SP 2
0004 Your Name here
0005 Your address
0006 Your City and State
0007 Your ZIP
0008 .SP 2
0009 Your Telephone # (optional)
0010 .SP 2
0011 Date XX, 1989
0012 .SP 2;LM 8
0013 To Name
0014 To address
0015 To City and State
0016 To ZIP
0017 .SP 2
0018 Greeting,
0019 .SP 2:IN+5
0020 Start your letter here----
0021
0022
0023
0024
0025
0026
0027
0028
0029
0030
0031
0032
0033 End your letter here----
0034 .SP 2;LM 43
0035 Your salutation,
0036 .SP 5
0037 Your Name
0038 .FO^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^Name^%
```

```
                                   Name 1


                                          Your Name here
                                          Your address
                                          Your City and State
                                          Your ZIP

                                          Your Telephone # (optional)

                                          Date XX, 1989


       To Name
       To address
       To City and State
       To ZIP

       Greeting,

            Start your letter here----




            End your letter here----

                                          Your salutation,


                                          Your Name

                                   Name 1
```

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APPLICATION FOR MEMBERSHIP

Below you will find an application for membership to the Hoosier Users Group. Active memberships entitles you to the Newsletter, up and download on the HUGbbs, attendance and voting rights at regular club meetings, access to the HUGger Library of Programs, special Club activities and special guest speakers for one year. Subscribing members will receive the **NEWSLETTER** only.

Make check or money order payable to **Hoosier Users Group**. Send completed application to:

HOOSIER USERS GROUP
P.O. Box 2222
Indianapolis, IN 46206-2222

(Cut on dotted line)

Check One:

Active Member
New: $20
Renewal: 15

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Renewal: 7.50

Amount Enclosed: $ _____

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S _____

Name: _____ Today's Date: _____

Address: _____ Apt. # _____

City: _____ State: _____ Zip: _____

Phone: (_____) _____-_____

Interests/Comments: _____