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* THE DATA EXPANSION *
* TIMEX/SINCLAIR USERS GROUP OF FORT WORTH, TEXAS *
* NEWSLETTER *
* VOL 4, NUMBER 8-AUG 1987 *
* EDITOR: DAVID BAULCH *
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NOTES FROM THE EDITOR

This has been a very busy month. I have had a few things going on for the group and for computers, but the most that I have had is for my business. I have been building furniture for the last month. That DOES mean that I have been using some of the programs that are still available for the 2068 to help RUN my business. For example:

The ARTWORX program from NovelSoft, a graphics-drawing program, has come in quite handy for figuring out 'shop drawings' for the pieces that need to be glued up and cut from solid wood or plywood. This is an essential part of figuring out the best way to produce the most from the least amount of wood. It also helps to figure out the difficult spots that I might come across in the building process.

I have also been using a spreadsheet, the OMNICALC2 program, for figuring out the cost factors, profit margins, labor costs, and overhead charges. It also helps to keep a check on the figures that I need to know from my suppliers as to the cost of lumber per hundred board feet and the 'break' that you get from buying over the one hundred board feet figure. I also keep figures on the number of pieces of plywood necessary for each piece that I produce and the time it should ordinarily take. Of course, I also use it for keeping track of all of the necessary figures for the accountant that I use at 'tax time'.

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This newsletter is published monthly and is sent to all of our subscribers and to other user groups throughout the U.S., Canada, Mexico, and Europe. The monthly printing is about 50 copies. The Timex Sub-Board on the FWKUG MBBS & PSDE [8/1/N], (817 or 214) 540-4183, carries a number of TS 2068 and Spectrum downloads and is up 24 hrs. The Tyler TIMEX BBS [8/1/N], (214) 593-3331 is up after 6:00 P.M. daily and 24 hrs weekends for other TS 2068 and Timex related downloads and information. The sbuscription rates for the newsletter are: $2.50 a month or $12.00 for six months. Anyone wishing to advertise, our rates are: $5.00 (minimum) for 1/4 page, $10.00 for 1/2 page, and $20.00 for a full page. Please send to: David Baulch, 4424 Geddes Avenue, Fort Worth, TX 76107.

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The only other program in full use is a word processor, MSCRIPT V5.2. This is great for writing letters to supplies and for writing out the invoice forms and the contracts that the people need to sign before I can get to work. (Before I used a 'standard' form but had to change so much of it that I wrote my own-maybe I will have some actually printed up someday.)

So, you might say that my 2068 has come in very handy for helping me keep track of my business-that also means that I have a very good excuse for using my computer.

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JULY MEETING NOTES

The meeting convened in MEETING ROOM 'A' of the Fort Worth Public Library at 300 Taylor Street in downtown Fort Worth. The next meeting is scheduled for August 8, 1987 in MEETING ROOM 'A' (and will be until further notice.) The meetings are on the second Saturday of every month from 1:00 P.M. to 4:00 P.M. The meetings are open to all who wish to learn more about the Sinclair, Timex, and Amstrad computers. Any visitors are welcome to attend as the meetings are open to all-comers. Any other computer operators/owners are more than welcome as there are many different types of computers that get discussed.

The meeting was called to order by our President, Chuck Dawson. Many of the normal members were absent at this meeting. Frank Bouldin was in the hospital recovering from some surgery. He had been asked by Chuck Dawson if he was going to have it done by the surgeons at the Air Force Base hospital here at Carswell A.F.B., he replied not only NO! but DEFINITELY NO! Fred Stockton was not able to make the meeting because his leg had been acting up for the last few weeks and he needed to stay off of it. Ellis Saunders, our Treasurer, was gone on another trip for his genealogy intrest. Two of our newer member from Arlington were not able to make it either. This made for one of the smallest group meetings that I have ever seen, particularly since we were going to EDU-TRON at 3123 Lackland Road here in Fort Worth to see a demonstration on the AMSTRAD PC1525 from Fred Andreucci and Danny Reed. We only stayed at the library for an hour and left to get to see the AMSTRAD in ACTION! That did mean that we had time for a short round-table discussion, as usual. For a change, I was the first one up.

I had a number of the new newsletters for other groups for all to look at and a number of the handouts of the specifications of the new STAR Micronics printers that will be seen later on in this newsletter. I also had a number of things on the AMSTRAD PC1525 that we were going to see as well as the TEXAS COMPUTING MONTHLY magazines that I now am getting on a regular basis. The only other comments that I was able to make were about some of the columns that had been written for StarText, our Fort Worth videotex database. It seems that they are contemplating using the Xmodem form of protocol for those that wish it in the electronic MAIL area. This would definitely facilitate the sending of programs to the members who are on-line.

Doyle and Neta Harris were there with a magazine that showed them and one of their Model 'A' cars. They were very pleased, and with every right, to have all of this, 4 full pages, in this magazine for antique automobile restorers. Doyle said that they would be very happy themselves, not to mention the antique car buff clubs in Fort Worth and Dallas, if they could get all the parts available in a database in the computer. (I suggest that they use MASTERFILE, like I do, to keep inventory and a list of people who have the parts.) Many of the members of the Model 'A' Ford car group liked the 'stretch' Model 'A' that Neta did while experimenting with the printer they had while it was new.

Chuck had something very interesting happen to him concerning computers. He will, upon occasion, get on to CompuServe. The last time that he got on he was told that he had mail waiting, which is something that he never had before on that database. I was from a guy in Japan. It seems that they have a long-distance line or something similar that can allow them to contact CompuServe in Japan. He was looking for someone to write in America. It seems that his city is one of those that has a 'sister-city' agreement with Fort Worth. He stated that since he was from our 'sister-city' and he was studying English, he thought that it would be nice to correspond with someone from the other 'sister-city'. Chuck said that this was the first time that he had ever gotten a letter from Japan on his computer. Now he is corresponding with him every so often.

This brought up a quick discussion about CompuServe and how it all worked. I even asked about the 'packet-switching' capabilities for the system. It seems that the people in the United Kingdom have this service and can also contact Compuserve. According to Gene Pickens, it is just a protocol, like Xmodem, for transmitting packets (parts) of your message. It is done on a number of lines so that each section may not actually follow the same route that the first one does, it just goes which ever way it can and all ends up at the other computer and is put back together in the correct order for you to read. Compuserve might not be too unreasonable after 'peak' hours, (around $12.50 during the day and around $7.00 or $8.00 during off peak time) but still at that much money per hour, to have to keep getting the same menu written out each time is wasting your money while you are on-line. (Personally, I like the StarText service much better-one charge is all it take and you can talk for as long as you deem it necessary.)

Doyle Harris stated that as fast as things are gotten for a business, within six months they are already out-of-date. Where he works they have a special ink-jet printer that automatically, every 24 hours, turns itself on (so it cannot really ever be turned off) and purges itself of the ink in the cartridges to keep it clean and working correctly. This is the only time that the machine is really on-no one ever uses it because it is already out-of-date.

Gene Pickens has not said a great deal in the last few

meetings. He has been studying optical digital computers. These computers have been around for a few years now. They have 1024 pathways for data. Gene got a book call 'The Tomorrow Makers'-fantastic and frightening at the same time. Some universities in the U.S. and Japan are into A.I. and robotics. They people in this book talk like Dr. Frankenstein, downloading large amounts of data into an A.I. robot making them super-intelligent. This robot has television camera for eyes allowing you to view what is being seen on a screen. Shades of robotic soldiers! Turn over the controls of our nuclear weapons to these super-intelligent robots so that we won't blow up ourselves and our world. This seems to no longer be science fiction but science fact. These people are saying that they will not see this, but their children and/or children's children will. Scary!

Charles Stelding is learning to work with his wife's PC. By programming in BASIC he has found that, many times, the Timex is simpler and easier. There were wishes and comments that came up in that discussion that it would be nice to combine the best of both. Using LEFT$, RIGHT$, MID$ (up$, down$ and UNSTRUNG) gets confusting, the TO statement is much simpler. You also never know if a line is entered correctly until the program is RUN and you get an error report. There are trade-offs. that INT A-N,1-12 is much easier than our multiple individual statements accomplishing the same thing.

Charles is learning alot. He has a great deal more respect for the Z-80 workhorse. When you only have 1K or 2K in a ZX-81, you are 'stingy' with your code. However, when you move to a much larger memory, you have a tendency to become 'sloppy' and your CODE expands to fill in the large area of RAM you now have to work with.

We then all got together and went over to EDU-TRON on Lackland Road (their new location) for a demonstration and discussion of the new Amstrad PC 1512.

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PRESS RELEASE-WEYMIL CORP.
DELTA DEVICE: THE NON-VOLATILE MEMORY SYSTEM (NVMS) TS 1000

WEYMIL CORP.
BOX 5904
BELLINGHAM, WA 98227-5904

The DELTA DEVICE is the first non-volatile momory system (NVMS) developed for the TS 1000 family of computers. It consists of a 32K non-volatile memory baord and the Rigter Operating System ROS). The product was developed by Mr. WILF RIGTER and is marketed exclusively by WEYMIL CORP.

The board measures 3 1/2" by 3". It uses only two chips. It comes complete with a built-in write protect switch to prevent accidental erasure of data. The 32K is divided into four 8K blocks which can be independently switched via DIP switch to various locations in the Sinclair memory map. The memory

contents are preserved with a long-life battery. The board comes complete with a feed-through connector. You can control the memory of either 16K or 32K rampacks. Additional non-volatile memory devices (such as the HUNTER BOARD or DELTA DEVICES) can be added for bank switch applications. You can also connect other peripherals. The sircuitry of the DELTA DEVICE greatly reduces the risk of data loss caused by removing and replacing the unit on the computer. This makes the system very transportable. The hardware itself has four times the capacity and more flexibility than other similar memory enhancement products.

The NVMS concept is complete by the RIGTER OPERATING SYSTEM (ROS). The DELTA DEVICE is the first device of its kind to incorporate a full file handling system. ROS supports the following features: DIRECTORY lists all of the programs stored in memory by name and length. You have 44 entries per directory. SAVE transfers BASIC programs, variable, or machine code to storage. It works in conjunction with the NAME/RENAME features. LOAD transfers programs to their normal RUN areas. MERGE allows the joining of two BASIC programs or variable files. EXIT allows you to quit ROS to an auto-run program or the command line. ERASE deletes programs from system memory and moves other programs to fill the space left behind. This eliminates blank areas of memory between files. The cursor is used to select files.

One of the unique features of ROS is that it is called up via 'hot key'. ROS follows terminate-and-stay-resident (TSR) protocols until the REM key is pressed followed by ENTER from the command line. When triggered, ROS is immediately available.

The DELTA DEVICE comes with ROS enhancements for more flexibility. CLEAR DIRECTORY allows initialization of selected sections fo system memory while leaving others intact. RENUMBER is a natural companion to the MERGE command. UNMERGE deletes blocks of BASIC programs. ROS uses less than 600 bytes.

The extremely efficent use of code is the trademark of WILF RIGTER, who has developed the RIGTER SOFTWARE PROGRAMMABLE JOYSTICK INTERFACE, the WRX-16 Hi-Res Core, which has created the new standard for TS 1000 hi-res software such as THRUST, and NOVA, the 512 byte utility which delivers true multi-tasking to the TS 1000.

The applications of the DELTA DEVICE are broad. A user can now have programs such as THRUST, NOVA, MINIXMOD, KRUNCHER, and a word processor instantly available with plenty of room left over. No standard NVM can equal that feat. By mapping a section of the NMVS into the ROM area, a user can easily enhance the operating system. For example, one can design a customized prompt, hi-res graphics, or a high-speed tape loader all accessible from the standard Sinclair command keys. The DELTA DEVICE will allow the user to have more than one operating system available on the same machine. The user can now install FORTH and PASCAL along with the standard system. The DELTA DEVICE is totally compatible with THRUST and other hi-res

programs.

Available for $75.00 plus $5.00 shipping and handling from WEYMIL CORP.
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AMSTRAD DEMONSTRATION FROM DANNY REED OF EDU-TRON

First off, Fred Andreucci introduced us to his other two partners and passed out some hand-outs concerning the Amstrad PC 1512. He then began the demonstration by giving us some background on Amstrad and the PC1512. The distributor for Amstrad is in Longview which makes it much easier for service and delivery here in the Metroplex. Parts and labor are guaranteed for one year. Delivery is overnight. The Amstrad was first introduced in England over a year ago and has quite taken the country. It has been rapidly 'accepted' here since it was first brought over. It can be configured almost anyway you could wish and runs all IBM software.

He then let Danny Reed take over with the actual computer with GEM and a 'DOODLE' installed. Danny began about the GEMTOP environment. With GEM you don't have to know 'computerese' or even MS-DOS. It is extremely 'user-friendly' which seems to be a much over-used word. GEM takes the user interface a step farther by having a 'pictorial' representation (icons) similar to the Macintosh. If you wish to RUN a program, instead o punching in a long command set, just use the 'mouse' that comes with it, put it on the appropriate program, double-click the mouse and it runs. SIMPLE!

Basically the setup is like the Macintosh, but you end up with the best of BOTH worlds-MAC and MS-DOS. The Mac runs only MAC software where the Amstrad runs ALL IBM software. You can run IBM, MS-DOS, or CP/M 86 software. The simplicity continues. Supposing you wanted to copy a program using MS-DOS commands (COPY Drive A, Sub-directory GEMMAPS, program APPLICATIONS over to Drive B, Sub-directory GEMMAPS, program APPLICATIONS) The full set was showing how powerful MS-DOS was, powerful but time-consuming and you must be proficient in MS-DOS to use it. Under GEM, to do the exact same thing, you look at the directory and see the icons of FOLDERS (sub-directories) and these are like a file in a filing cabinet. Inside each folder are all the programs that are in that sub-directory. (This is similar to a card file structure.) Setting up a folder for your wordprocessing with all the necessary programs and data files in the same folder, a data-base folder with all the necessary files for that database. It is all much more efficient using the mouse and 'dragging' it down to Drive B to copy the program.

You can split the screen with the A drive on top and the B drive on the bottom or reverse it with the B on top and the A on the bottomm or just have the A drive take up the entire screen if you wish. You can take a complete folder from the top drive (click the mouse and a little hand shows up) drag it down to the bottom drive, click agaian and the COPY is complete. You can even 'skip' and pull different folders down and copy them. It

automatically counts all the files and knows where everything is located. The PC 1512 will also run non-dos programs like MULTIPLAN, LOTUS 1-2-3, and others utilizing the mouse for the standard PC. If you purchase a mouse and a card and run NON-IBM programs, it will rarely work. Amstrad works on almost everything and can show all the information about the programs as standard text (like MS-DOS), or as icons, sort it by type, and more.

The Non-Volitale RAM (NVR) can hold the setup of all your parameters-set your screen colors(background color, foreground color, highlights) and SAVE all these to NVR so that it will come up that way everytime you turn the computer on. (This is similar to the 'control panel' on the Atari ST, however; the parameters are saved to the DESKTOP on the Atari and not the NVR.) Setup your RS 232 parameters, permanet RAM-Disk size, communications parameters,, translations ccodes, mouse movement scaling and have it all saved to an area of memory in the NVR not the RAM. Saving desktop feature allows you to configure the machine for just about anything you want-permanently.

Among the other things that come standard on the Amstrad PC 1512 is an alarm clock, a real-time clock, a print spooler, and a calculator thtat is available at almost all times and can be moved where ever you want it on the screen. To use the calculator you must have the NUMS LOCK on to use the numeric keypad, but you can use the mouse if you want. (The keypad is much easier in this case.) You can have four windows open at one time, but you can only have one active. If the window is active, the name is in BOLD BLACK, if inactive it is in a washed-out grey. With all the windows open it looks just like a real desktop.

You can boot up only the MS-DOS or boot up the GEM environment as well. If you have someone in the family that is not familiar with MS-DOS, then they can use the GEM. IF, on the other hand, if someone is totall fammiliar with MS-DOS they can run it just like the MS-DOS computer that it is or switch back and use GEM. The Amstrad is expandable to 640K but comes with 512K and has three slots. The special NVR patch was revised and runs an 8086 (suited for graphics), is a TRUE 16-bit machine, (True IBM is a 16-bit chip but only has an 8-bit data path) and it runs a 8MHz. The CPI and serial ports are already built in the back. Use an external modem if you want to by the back port, or open it up and use one of the slots and use an internal modem. The Real-time clock is built-in to the system, the graphics card is built into the system. (It is CGA, but an EGA system that will be more expensive should be coming out soon-around September- and will look and perform better than the Atari EGA system.) There is no FAN-they use VLSI (Very Large Scale Intergrated chips) so that there are half as many chips on the motherboard as in other comparable computers. It also runs cooler since the transformer, a full 200 watts of power, is in the monitor using the natural convection cooling like a television set. The monitor, then, is heaver than the normal but the CPU is lighter than normal. The NVR is dynamic RAM and battery backed up, which the batteries also contro the real-time

clock. The batteries (four) are located in the top of the CPU-easy to get to and easy to changeout unlike most other computers. It is compatible with all full-sized IBM compatible hardware and software. It will run AT software if it is also PC/XT compatible. 3.5' drives are not yet available for the Amstrad, but are in the works.

It is a completely intergrated system ready to ruplug in and run. It comes with the CPU, Monitor, Keyboard, Mouse, and software. A joystick port (Atari-style) is already in the keyboard-on need for a special card to run a joystick. CAPS LOCK light (especially programming in C where specialized forms using capitals and lowercase are necessary) is there, NUMS LOCK light and more. What more could you ask for?

RUN a non-GEM environment program like Multiplan. Using GEM it will be converted to run with a mouse. It will convert the .COM and .EXE into icons, though it won') go in the reverse direction. (This version of GEM was built especially for the Amstrad.) GEM sets up a specail memory area for things lin the screnn and other things that MS-DOS won't do. Danny considers himself a master with MS-DOS and, at first, refused to use GEM. Now, after a while of using GEM, he prefers it beacuse in is more fun, faster, and more efficient. Isn't that what you want to have a computer to be?

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TIMEX TIPS
By Chuck Dawson

QUESTION: Here is something that puzzles me. I understand most of the terms in machine code, but what does SET do? When would we use it?

ANSWER: Each location in memory can hold a number from 0 to 255. When we PEEK a location, the computer gives us the number stored in that location. What is really there, of course, is a series of eight digits, either one or zero. So, if we see 255 printed on the screen, it is actually 11111111. In plain English, SET means 'make it 1' and RESET means 'make it 0'. If we RESET BIT 0 in the above example, we would get 11111110 and when we PEEKed that location, we would see 254. It would be just as easy to POKE the location with 254. The trouble is, these numbers get harder to figure if we get away from 255. Who can figure what 10110010 is in their head?

When do we use something like this? Well, to save space, computer programmers sometimes use the bits of a given location to mean store 'on-off' type information. For example, we have a CAPS LOCK that is either on or off. The status of CAPS LOCK is stored as bit three of location 23658. Other information could be stored in the other bits, so figuring what number to POKE would involve determining the status of those other bits. However, we can SET or RESET the one bit, leaving the others alone, and only the CAPS LOCK status is affected. Another place this is used is in the display file. In this case, the ones or zeros become ink or paper colored dots on the screen. Thus, if

we SET a bit, we get a dot on the screen; if we RESET it, the dot goes away. The dots around it do not change.

QUESTION: What do you use the RST command for? Is it restore? Restore what?

Answer: No, it not restore; it is RESTART. A restart is the same as a CALL except that it takes fewer machine cycles to execute. The programmers that write the ROM routines always put routines that are used a lot (like reading the keyboard or sending output to the screen) at these restart locations to speed things up. A restart routine must start at one of eight locations: 0, 8, 16, 24, 32, 40, 48, or 60.

QUESTION: How do I pass parameters between Basic and Machine Code?

ANSWER: One way is to POKE an unused location with a value, then the machine code routine can LD the number into the accumilator and use it. The reverse can be used to get the number back to BASIC with a PEEK. Also, if you start the routine with something like LET X = USR 32443, and have the result of the machine code routine moved to the BC register, then when control is returned to BASIC, X will contain that BC value. (In the TS-1000, use the HL register instead.)

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THE T/S TELECOMMUNICATIONS GUIDE

I have just received the BIG telecommunications guide from Pete Fischer. (This is the one that has it all on the 11 X 8 1/2' paper.) The cover page is in black and white, but he included-for me-the identical page in it's original COLOR form.

Pete wanted to let me know that there were some updates on the telecommunications scene:

* The TIME WARP BBS is back up on a CASBOARD software, part time at (617) 481-2155 available 11:00 P.M. to 7:00 A.M EST.

* Another new board is called 'SINCLAIR AT NIGHT', which I have already let you know about.

* Another new one is TCCS, which is upstate New York where the Owego Free Academy and the BUBBS boards are. This new one, TCCS, has a very important advantage over those other two boards: it has a T/S specific message base as well as downloads. It is also up part time from 8:00 A.M. to 11:00 P.M. EST. The number is (607) 785-2118.

* One of the last ones on the MASTER BBS LIST included in the new and improved version of the guide is one called 'DOWNLOADER'S ANONYMOUS'. This board was found by Gary Lessenberry in the Chicago Area newsletter-NITE TIMES. Downloader's Anonymous is the first CANADAIN board that has a message base and file section and is the home system of the Toronto T/S Users Group. It runs on a new incarnaton of FIDO

called OPUS. (There are a few boards here in Fort Worth that use OPUS-it is pretty good.) The number is (416) 844-2035-now is the time to get going on some 'INTERNATIONAL SINCLAIR/TIMEX BROTHERHOOD'.

* One of the last ones expressly mentioned in his letter to me was the board sponsored by the Central Florida Users Group run on very limited hours by Niel Cohen. The number is (305) 677-9623 on Wednesday nights only-6:00 P.M. to midnight (7-1-E).

Pete has also sent me some information on a new terminal program for the QL called 'Q-LINK' and it has both ASCII and XMODEM protocols. It sells for $19.95 from Meta Media Productions, 726 West 17th, Vancouver, B.C., V5Z 1T9 CANADA.

You should see the extra special work that Pete and Steve have gone through to make this one of the best guides for TS telecommunications.

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ALTERNATE CHARACTER SET FOR THE SPECTRUM OR THE 2068

I know that many of you get very tired of seeing the normal character set for the Timex and Sinclair computers. Then you design a different character set to use to make it look more readable or at least more interesting. I found this one in an old ZX COMPUTING and thought that it looked very good. I am sure that it can be modified to make the program RUN much faster than it does-not including using a compiler. Of course, once you have run the program, you can save the CODE and just load that to use whenever necessary.

```
 10 REM Alternate Character Set
 20 BORDER 6: PAPER 6: INK 0: CLS
 30 LET a=PEEK 23606+256*PEEK 23607
 40 PRINT AT 21,2;'Enter Spectrum Memory size.'
 50 INPUT '16 or 48 ';ram
 60 IF ram<>16 AND ram<>48 THEN GO TO 50
 70 PRINT AT 20,6;'Please Wait 2 Minutes          Character  Set
being Generated.'
 80 IF ram=16 THEN LET c=31488
 90 IF ram=48 THEN LET c=64000
100 REM >>Transfer and Modify<<
110 FOR n=c TO c+1024: LET b=PEEK a: POKE n,b
120 IF b/4=INT (b/4) THEN POKE n,b+2
130 IF b/8=INT (b/8) THEN POKE n,b+4
140 IF b/16=INT (b/16) THEN POKE n,b+8
150 IF b/32=INT (b/32) THEN POKE n,b+16
160 IF b/64=INT (b/64) THEN POKE n,b+32
170 IF b=66 THEN POKE n,b+32
180 IF b=0 THEN POKE n,0
190 LET a=a+1: NEXT n: BEEP .1,5
200 REM >>Display Results<<
210 CLS : POKE 23607,c/256
220 PRINT AT 2,9;' POKE 23607,';c/256
230 PRINT '' To Obtain this Character Set.'
```

```
 240 POKE 23607,60
 250 PRINT AT 8,9;" POKE 23607,60"
 260 PRINT '" To Return to Normal Characters."
 270 PRINT AT 14,0;"SAVE:-SAVE name CODE ";c;",1024"
  280  PRINT  '''This  Basic  Program  may  be  NEWed    Leaving
Sub-Routine above Ramtop'''      Press any key to STOP"
 290 PAUSE 0: CLEAR c: STOP
 300 SAVE "alt char" LINE 1
```

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FOR SALE

I just received this in the mail on Saturday. If you are interested, correspond with:

A. LAVIOLETTE
16-1385 BERNARD
MONTREAL CANADA H2V 1W1

*TS-1000; TS-2040; MEMOTECH ADD-ONS (RAMS, K-BOARD, HRG, PRINTER I/F, ETC); 12" MONOCHROME MONITOR; SOFTWARE, BOOKS (will send list on request)[no price sent for these-ED]

* BROTHER HR-5 PRINTER
Thernal dot-matrix printer
INTERFACE: Parallel Centronics or RS-232
PRINTING SPEED: 30 cps
NO. COLUMNS: 80-96 (normal or emphasized, pica or elite characters), 40-80 (double-width expanded characters), 132 (condensed characters)
PAPER: Friction feed single or continous. Standard paper or thermal paper.
PRICE $99.95 US (S+H and PPD.)

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FROM THE EDITORS MAILBOX (CONTINUED)

I would appreciate it if you would mention this product at your meeting and see what the response is. The ZX-TERM*80 software is $25.00 and the SCRAM card is $39.95. I am out of space now, take care.

Ed Grey

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Msg#: 168 Date: 06/20/87
From: ED GREY
To: DAVID BAULCH
Re: REVIEW

Hello, David,

I looked forward (as always) to getting my copy of your newsletter. Of course I understand the need to split the review into sections, NO SWEAT. I will continue to check out the ZX-TERM*80 software for the T/S1000, 1500, ZX81 and keep you

informed of my findings. One thing worth mentioning; you need some type of NVM board (such as a Hunter Board or the new SCRAM card) and you need to use a RAMPACK. Although the software will work on the T/S1000 with only a 16K rampack, you must add a 16K rampack (32 or 64 is OK) on the 1500 to use the software. So no matter which of the computers that you use, you MUST have the NVM and additional RAM. I gotta go, take care.

Ed Grey

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BEACH ATTACK-2068/SPECTRUM GAME
By Mark Jacob, 1983 ZX COMPUTING

```
  20 BORDER 3: PAPER 5: INK 7: CLS
  30 GO SUB 7000
  35 GO SUB 3000
  40 CLS
  60 POKE 23561,255
  65 GO SUB 9000
  70 LET w=1: LET q=75: LET r=RND: LET n=40: LET s=0:  LET  c=0:
LET f=20: LET z=0: LET v=12: LET z1=0: LET z2=0: LET  z3=0:  LET
u=20: LET p=5
  95 LET x=28
 100 PRINT AT 19,x; INK 0;"ABC ": LET r=RND
 110 IF INKEY$="0" AND p>=3 THEN LET l=15: GO TO 300
 120 IF INKEY$="9" AND p>=4 THEN LET l=12: GO TO 300
 130 IF INKEY$="8" AND p>=5 THEN LET l=10: GO TO 300
 140 IF INKEY$="3" THEN GO SUB 500
 150 IF INKEY$="2" THEN GO SUB 600
 160 IF INKEY$="1" THEN GO SUB 900
 165 IF INKEY$="5" AND s>500 THEN GO SUB 980
 170 FOR i=0 TO n: NEXT i
 172 IF q<1 THEN GO TO 1500
 178 PRINT AT 1,1; INK 0;"Score"
 180 PRINT AT 1,7; INK 7;INT s;" "
 183 PRINT AT 1,12; INK 0;"Wave"
 190 PRINT AT 1,17; INK 7;w
 193 PRINT AT 1,20; INK 0;"Ammo"
 200 PRINT AT 1,26; INK 7;q;" "
 210 IF c>=1 THEN GO SUB 700
 225 LET x=x-1
 230 IF x=13 THEN GO TO 1000
 250 GO TO 100
 300 BEEP .1,-10
 310 LET y=l*2-INT (RND*7)
 330 IF y=x OR y=x+1 OR y=x+2 THEN PRINT AT 19,x;  INK  2;"KLM":
BEEP .1,0: GO TO 360
 340 PRINT AT 19,y; INK 7;"T": BEEP .07,-2: BEEP .13,4
 345 PRINT AT 19,y;" "
 350 LET q=q-3: LET n=n-2
 351 IF x>20 THEN LET x=x-1
 355 GO TO 390
 360 PRINT AT 19,x;"   "
 370 LET s=s+50+(RND*10): LET n=n-2: LET f=f-1: LET q=q-2: GO TO
1063
 390 IF f<10 THEN BEEP .05,20: LET w=w+1: LET f=12+INT (RND*8)
```

```
 400 IF w=2 THEN LET n=35
 410 IF w=3 THEN LET n=30: LET p=4
 420 IF w=4 THEN LET n=25
 430 IF w=5 THEN LET n=20: LET p=3
 440 IF w>5 THEN LET n=1
 450 IF r>=.5 AND r<=.6 THEN LET q=q+20: BEEP .2,0: BEEP .1,5
 455 IF ATTR (19,x)=14 THEN PRINT AT 19,x;"   ": GO TO 95
 460 GO TO 100
 510 LET z1=INT (8+(5*r))
 520 LET z2=INT (6+(7*r))
 530 LET z3=INT (3+(10*r))
 540 LET q=q-4: BEEP .01,10
 550 RETURN
 600 LET z$="GGGGGGGGGG"
 610 PRINT AT 20,2; INK 0;z$
 620 BEEP .6,-8
 630 LET q=q-12
 635 IF c>=1 THEN LET s=s+25: LET c=0
 640 PRINT AT 20,2;"          "
 650 RETURN
 710 PRINT AT 20,k-1; INK 7;"F  "
 718 IF k<=3 THEN GO SUB 800
 720 LET k=k-1
 745 LET c=c+1
 770 RETURN
 820 PRINT AT u,2; INK 2;"F"
 825 LET u=u-1
 830 PRINT AT 20,2; INK 2;"F"
 835 IF u<9 THEN GO TO 1500
 840 LET k=k+9
 845 IF c>=14 THEN LET c=-3
 850 RETURN
 900 BEEP .1,-4
 910 FOR j=10 TO 20
 920 PRINT AT j-1,2; INK 3;" N"
 930 NEXT j
 935 LET q=q-25: LET u=20
 937 PRINT AT j-1,2;"  "
 940 RETURN
 980 BEEP .25,5
 982 IF s>500 AND s<1000 THEN LET s=s-300: LET q=q+20
 985 IF s>1000 THEN LET s=s-500: LET q=q+30
 990 RETURN
1000 LET c=1
1010 FOR k=11 TO 8 STEP -1
1020 PRINT AT 20,k; INK 0;"F": BEEP .01,0
1030 IF k=z1 AND r>.5 THEN GO SUB 1070: LET z1=0
1040 IF k=z2 AND r<.6 THEN GO SUB 1070: LET z2=0
1050 IF k=z3 AND r<.8 AND r>.3 THEN GO SUB 1070: LET z3=0
1060 NEXT k
1063 PRINT AT 19,x;"    "
1065 GO TO 95
1070 PRINT AT 20,k; INK 0;"G"
1080 BEEP .05,-5: LET s=s+20
1090 PRINT AT 20,k;" "
1100 RETURN
1500 FOR n=6 TO 0 STEP -1: BORDER n: BEEP .15,n: NEXT n:  BORDER
```

```
3
1510 PRINT AT 1,26; INK 7;"0  "
1512 BEEP .4,0: BEEP .8,5: BEEP .4,0: BEEP .9,5: BEEP .3,7: BEEP
1,10
1520 PRINT AT 10,10; INVERSE 1; FLASH 1; INK 0;"GAME OVER"
1530 PRINT AT 15,16; INK 2;"Another go?(y/n)"
1540 IF INKEY$="y" OR INKEY$="Y" THEN RUN 31
1545 IF INKEY$="n" OR INKEY$="N" THEN STOP
1550 IF INKEY$<>"y" OR INKEY$<>"Y" THEN GO TO 1540
3000 FOR i=0 TO 5 STEP .1
3005 PRINT AT 7,9; INK INT i;"BEACH  ATTACK"
3010 PRINT AT 10,6; INK 1;"By MARK JACOB 1983"
3020 PRINT AT 17,1; INK 2;"Do you want Instructions (y/n)?"
3030 IF INKEY$="y" OR INKEY$="Y" THEN GO TO 4000
3033 IF INKEY$="n" OR INKEY$="N" THEN RETURN
3035 NEXT i
3041 IF INKEY$="" THEN GO TO 3000
4000 PRINT AT 2,1; INK 0;"The object of  BEACH  ATTACK  is    to
defend the beach using your  gun on the cliff. You can fire   at
the  ships  at  different  rangesusing  the  8,9,  and  0  keys,
whichfire the shells with increasing strength."
4010 PRINT AT 9,0; INK 0;"If any ship comes ashore then a number
of men will commence     their attack. Random mines can  be laid
on the beach  by  pressing3,or  the  whole  beach  obliteratedby
pressing 2."
4020 PRINT AT 15,0; INK 0;"The men then start to ascend      the
cliff=their aim is to reach the gun. Bombs can be dropped   onto
the men by pressing 1"
4030 PRINT AT 20,5; INK 2;"PRESS 'y' TO CONTINUE"
4040 IF INKEY$="y" OR INKEY$="Y" THEN CLS : GO TO 4050
4045 GO TO 4040
4050 PRINT AT 2,1; INK 0;"Your ammo remaining is shown atthe top
of the screen. You lose ammo at the rate given below:"
4060 PRINT AT 6,3; INK 0;"Fire (hit).........2"
4062 PRINT AT 8,3; INK 0;"Fire (miss).........3"
4064 PRINT AT 10,3; INK 0;"Lay mines...........4"
4066 PRINT AT 12,3; INK 0;"Blow up beach.......12"
4068 PRINT AT 12,3; INK 0;"Drop bomb down cliff....25"
4070 PRINT AT 17,1; INK 0;"About 10% of the ships are     supply
ships (identical to the  rest), and when these are  hit      the
ammo goes up."
4080 PRINT AT 21,15; INK 2;"PRESS 'y'"
4081 IF INKEY$="y" THEN CLS : GO TO 5000
4085 GO TO 4081
5000 PRINT AT 4,3; INK 0;"The game ends when either     the  men
reach the gun or you runout of ammo."
5010 PRINT AT 13,11; INK 1;"GOOD LUCK!"
5020 PRINT AT 17,2; INK 2;"PRESS 'y' TO START THE ATTACK"
5030 IF INKEY$="y" OR INKEY$="Y" THEN GO TO 40
5040 IF INKEY$<>"y" OR INKEY$<>"Y" THEN GO TO 5030
7000 FOR i=65 TO 85
7005 PRINT AT 9,5; INK 0;"PLEASE WAIT A MOMENT"
7010 FOR n=0 TO 7
7020 READ x: POKE USR CHR$ (i)+n,x
7030 NEXT n
7040 NEXT i
7050 DATA 0,0,0,1,255,127,63,31
```

```
7060 DATA 4,142,127,213,255,255,255,255
7070 DATA 0,0,192,240,255,255,255,255
7080 DATA 255,254,252,252,252,248,252,252
7090 DATA 252,254,254,254,254,242,242,248
7100 DATA 0,0,24,24,8,24,8,20
7110 DATA 136,34,0,89,24,130,40,130
7120 DATA 248,248,240,240,240,240,248,252
7130 DATA 254,254,254,252,252,252,252,248
7140 DATA 248,248,252,252,252,254,254,254
7150 DATA 145,37,148,43,76,37,18,37
7160 DATA 145,36,149,58,204,181,82,101
7170 DATA 145,36,149,98,216,36,82,200
7180 DATA 16,8,16,8,16,8,16,0
7190 DATA 248,241,243,230,236,248,240,248
7200 DATA 0,0,192,227,255,255,255,255
7210 DATA 24,62,255,255,255,255,255,255
7220 DATA 248,252,252,252,252,248,248,240
7230 DATA 240,240,240,248,248,248,248,248
7240 DATA 0,170,0,170,128,84,0,24
7250 DATA 252,254,254,254,252,252,248,248
7260 CLS
7270 RETURN
9000 PRINT AT 7,0; INK 4;" D"
9010 PRINT INK 4;" E"
9020 PRINT INK 4;" O"
9030 PRINT INK 4;" R"
9040 PRINT INK 4;" S"
9042 PRINT INK 4;" S"
9044 PRINT INK 4;" U"
9046 PRINT INK 4;" H"
9048 PRINT INK 4;" I"
9050 PRINT INK 4;" H"
9052 PRINT INK 4;" E"
9054 PRINT INK 4;" R"
9056 PRINT INK 4;" S"
9058 PRINT INK 4;" J"
9060 PRINT AT 20,14; INK 1;"PQPQPQPQPQPQPQPQPQ"
9065 PRINT AT 21,0; INK 6;"
9070 RETURN
```

****

THE AMSTRAD PC1512

At last! A powerful IBM-compatible personal computer with the popular 'Mouse' and software, all at an affordable price.

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From the official dealer and repair center in Fort Worth, EDU-TRON, run by Fred Andreucci, come the following figures for set-ups of the AMSTRAD PC1512:

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SPECIFICATIONS

* 512K memory expandable to 640K
* 16 BIT 8086 operating ar 8MHz
* 5.25' disk drive(s) 360KB
* 20MB optional hard disk
* 80 column display, standard monochrome features paper white with 16 grey levels, optional RGB Color with 16 colors, CGA graphics
* Tilt and swivel monitor stand
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3123 Lackland Road
Fort Worth, TX 76116
(817) 731-2176

The man to speak to is Fred Andreucci, who tells me that the turn-around time, since the sole US agent is in Longview, Texas, guarantees a turn-around time of a day or so if any problems develop. If anything goes wrong during the 1 YEAR WARRANTY, like the monitor goes out or the CPU blows, you get a new monitor or CPU in EXCHANGE-no waiting for a week or so to get the monitor back. (I have been told that some 'other' IBM clones have only a 90 day warranty and have difficulty getting the parts to you to get you back up and running!) I think you should check out all of this information with Fred Andreucci at EDU-TRON. He tells me that the next time I am in the store, they should have the coffee pot on and to come by , have a cup of coffee and see what else the PC1512 can do. His set up in the store is the dual drive with a color monitor-very impressive.

****

RESISTOR

Although written for the ZX81, this program should work as printed on the Spectrum/2068. As most dabblers in electronics know, the value of a resistor is given by a set of colors printed on it's side. This short program will decode the full four bands almost instantly. A very useful utility to have for building Frank Bouldin's TLSL box.

```
 5 REM J.P. ROEBUCK              ZX  COMPUTING  December/January
1985
10 PRINT 'R O E B U C K  C O M P U T E R S'
20 PRINT ,,'     RESISTOR COLOR CODE'
30 DIM a$(4,7)
35 DIM s$(32)
```

```
 40 PRINT AT 10,0;'PLEASE INPUT COLOR BAND NO. '
 50 FOR n=1 TO 4
 60 PRINT AT 10,30;n
 70 INPUT a$(n)
 80 IF a$(n)='       ' THEN GO TO 70
 90 NEXT n
100 PRINT AT 10,0;s$
110 PRINT AT 10,0;'PLEASE WAIT'
120 GO SUB 1000
130 PRINT AT 10,o;s$
140 PRINT AT 10,10;h;' ';d$
150 PRINT AT 12,10;'AT ';c$(4);' PER CENT.'
160 PRINT AT 21,0;'PRESS A KEY'
170 IF INKEY$='' THEN GO TO 170
180 PRINT AT 10,0;s$;s$;s$
190 PRINT AT 21,0;s$
200 GO TO 30
1000 DIM b$(10,7)
1010 DIM c$(10,2)
1015 LET b$(1)='BLACK'
1020 LET b$(2)='BROWN'
1030 LET b$(3)='RED'
1040 LET b$(4)='ORANGE'
1050 LET b$(5)='YELLOW'
1060 LET b$(6)='GREEN'
1070 LET b$(7)='BLUE'
1080 LET b$(8)='PURPLE'
1090 LET b$(9)='GREY'
1100 LET b$(10)='WHITE'
1110 FOR f=1 TO 3
1120 FOR n=1 TO 10
1130 IF a$(f)=b$(n) THEN LET c$(f)=STR$ (n-1)
1140 NEXT n
1150 NEXT f
1160 IF a$(4)='GOLD   ' THEN LET c$(4)=STR$ 5
1170 IF a$(4)='SILVER ' THEN LET c$(4)=STR$ 10
1180 IF a$(4)='BRONZE ' THEN LET c$(4)=STR$ 20
1190 LET h=VAL (c$(1)+c$(2))
1210 FOR f=1 TO VAL c$(3)
1220 LET h=h*10
1230 NEXT f
1240 IF h<1000 THEN GO TO 3000
1250 IF h>=1000 AND h<1000000 THEN GO TO 3100
1260 IF h>=1000000 THEN GO TO 3200
3000 LET d$='OHMS.'
3010 RETURN
3100 LET d$='KILA OHMS.'
3120 RETURN
3200 LET d$='MEGA OHMS.'
3210 LET h=h/1000000
3230 RETURN
9000 SAVE 'resistor' LINE 5: REM ADD 9010 RUN if a ZX81/TS 1000
```

****

PERIPHERALS FOR THE TIMEX/SINCLAIR/AMSTRAD
AND OTHER LINES OF COMPUTERS

I have a penchant for looking at computers and their peripherals, particularly the printers since I do quite a bit of word processing. My first printer was the TS 2040 (or Alphacom 32-same thing) but this was not very good for writing letters. Next step was to purchase the AERCO CPI and an 80 column printer. The most inexpensive one I could purchase was the Gorilla Banana. A good buy, a good printer, but it did very little other than PRINT. It did not have 'true' decenders, but sufficed as I was very pleased to have any 80 column printer. The next step up the ladder was to the NEC PC-PR103A that I use now. It does quite a bit more than just print. (I still have not found out how to make it do everything that it can do, but I will eventually get there.) But I still like to see what other printer can do as well.

Last week I was doing a little window shopping while letting some furniture parts set-up. I happened to stop by MICRO-TECH, 6508 Camp Bowie, here in Fort Worth and talked to Tim Kinnaman. He was showing me some of the NEW STAR Micronics printers that he has available to sell. I do not have the price ranges, but I am sure that if you are interested you can call at (817) 737-3566 and Tim will be more than happy to tell you.

Three of the five new ones that I looked at were the NP-10, NX-10, and NX-15. The NX-10 and NX-15 are similar with the exception that the NX-15 is the wide carriage. All thee have NLQ and are IBM/EPSON compatible. The NP-10 may be a little slow, but some of the GRAPHICS that it can produce are unbelieveable. All three are only 9 pin printers.

The other two that I got the specs on but did not see in action are more toward the business end user. The NB 24-10 and NB 24-15 with the NB 24-15 being the wide carriage again. Both are IBM/EPSON compatible and have the EASY-FRONT-PANEL operation for changing all that you need to without having to resort to sending all the 'CODES' like I do with my NEC. (You can send the codes if necessary, as in a program to change the printout for 'special' effects.) The NLQ mode is twice as fast as the other three mentioned earlier. Each of these has a 24 PIN head. The strange thing is the buffer size, only the NB 24-10 has a buffer of decent size-8KB, the other four have from 5KB down to 2.2KB.

SPECIFICATIONS

PRINTER	NP-10	NX-10	NX-15	NB 24-10	NB 24-15
PRINT METHOD	SIDM	SIDM	SIDM	SIDM	SIDM*
PRINTING SPEED!					
LETTER QUALITY!	NA	NA	NA	72CPS	72CPS
NLQ	25CPS	30CPS	30CPS	NA	NA
DRAFT	100CPS	120CPS	120CPS	216CPS	216CPS
NUMBER OF PINS!	9	9	9	24	24
DATA BUFFER	2KB	5KB	4KB	8KB	4.5KB

```
*Serial Impact Dot Matrix
************************************************************

                ALIENS-THE GAME NOT THE MOVIE

   5 REM Rewritten for the 2068        by Bob Redman May 12 '85
   7 CLS
   8 REM 'aliens'
   9 BEEP .1,11
  10 GO SUB 1000
  20 GO SUB 1200
  30 REM screen set up
  34 CLS : PAPER 5: CLS : PAPER 5: BORDER 0
       40    CLS    :    PRINT    AT    20,0;    PAPER      4;"

  45 PRINT AT 21,0; PAPER 4;"                                  "
  50 FOR s=1 TO 20
  55 OVER 1
  60 PLOT RND*254,RND*120+40
  70 NEXT s
  75 OVER 0
  80 LET f1=0: LET l=15
  85 LET b=-22
  90 LET hits=0
 100 REM aliens
 110 POKE 23672,0
 120 LET t=PEEK 23672
 125 BRIGHT 1
 129 BRIGHT 1: IF t>=80-(a*6)  THEN  PRINT  AT  RND*17,RND*28+2;
PAPER 8; INK 2;"A": BEEP .05,b: LET f1=f1+1: BRIGHT 0: PRINT  AT
21,28; INK 4;"??": REM The ??=2 GRAPHICS+CAPS SHIFT 8
 131 BRIGHT 0: LET b=b+.1
 135 PRINT AT 21,21;"aliens ": PRINT AT 21,28;f1
 140 IF f1>10 THEN GO TO 400
 160 IF t>=80-(a*6) THEN POKE 23672,0
 200 REM launcher base
 205 LET l=l+( STICK (1,1)=8)-( STICK (1,1)=4)
 210 LET l=l+(t=0)-(t=30)
 215 IF l<=0 THEN LET l=0
 220 IF l>31 THEN LET l=l-1
 222 BRIGHT 1: PRINT AT 19,l; INK 1;"L": BEEP .001,69: BRIGHT 0
 225 PRINT AT 19,l;" "
 231 IF STICK (2,1)=1 THEN GO TO 250
 240 PRINT AT 19,l;" "
 241 IF STICK (2,1)=0 THEN GO TO 120
 250 FOR c=18 TO 0 STEP -1
 261 PRINT AT c,l; INK 0;"O"
 265 SOUND 6,15;7,7;8,16;9,16;10,12;13,4
 271 PRINT AT c,l;" "
 276 IF ATTR (c-1,l)=106 THEN GO TO 300
 280 NEXT c
 285 SOUND 8,0;7,63
 290 GO TO 129
 300 REM missile hit
 310 BEEP .01,69
 330 PRINT AT c-1,l; FLASH 1;"E"
 331 SOUND 6,6;7,7;8,16;9,16;10,16;12,56;13,8
```

```
 332 PAUSE 55
 333 SOUND 8,0;9,0;10,0
 335 PRINT AT 19,1;' '
 340 PRINT AT c-1,1;' '
 350 LET hits=hits+1: LET f1=f1-1: PRINT AT  21,29;  INK  4;'?':
REM The ?=GRAPHICS+CAPS SHIFT 8
 351 SOUND 8,0;7,63
 360 PRINT AT 21,3;'hits=';hits: PRINT AT 21,28;f1
 369 PAUSE 25
 370 GO TO 129
 400 PRINT AT 11,10; INK 0; FLASH 1;'You're Dead'
 405 BEEP .1,1: BEEP .1,1: BEEP .1,1: BEEP .1,1
 406 BEEP .1,1: BEEP .1,1: BEEP .1,1: BEEP .1,1
 408 BEEP .1,1: BEEP .1,1: BEEP .1,1: BEEP .75,13
 409 CLS : PRINT AT 07,10;'Score:'; BRIGHT 1; FLASH  1;hits*100:
BRIGHT 0: FLASH 0
  410  PRINT  AT  12,1;'    Do    you    want    another    game?

          press  y or n '
 420 IF INKEY$='y'  THEN GO TO 30
 430 IF INKEY$='n' THEN PAPER 6: INK 0: CLS : STOP
 440 GO TO 420
1000 FOR n=0 TO 7
1010 READ a: POKE USR 'a'+n,a
1020 NEXT n
1030 DATA 129,126,219,126,60,60,90,129
1040 FOR n=0 TO 7
1050 READ l: POKE USR 'l'+n,l
1060 NEXT n
1070 DATA 24,24,24,24,60,126,255,90
1080 FOR n=0 TO 7
1090 READ d: POKE USR 'd'+n,d
1100 NEXT n
1110 DATA 16,16,16,16,16,16,58,40
1120 FOR n=0 TO 7
1130 READ e: POKE USR 'e'+n,e
1140 NEXT n
1150 DATA 137,74,52,204,51,44,82,145
1160 RETURN
1200 REM instructions
1203 PAPER 4: CLS : PAPER 4: BORDER 6
1205 CLS : BRIGHT 1
1207 PAPER 4: CLS : PAPER 4: BORDER 6
1210 PRINT AT 3,3;'You have to defend yourself      against  the
attacking aliens    who will re-energise out of      hyperspace
above the ground      It is your job to shoot the    aliens down
using your rocket    base (L)'
1220 PRINT AT 16,3;'PRESS ANY KEY TO CONTINUE'
1230 IF INKEY$=' ' THEN GO TO 1250
1240 PAUSE 0
1242 BRIGHT 0
1245 CLS
1247 PAPER 1: INK 7: BORDER 5: CLS
1250 PRINT AT  09,2;'Your  launcher  is  controlled  bythe  left
joystick. If you allow  10 aliens to  be  present  at  the  same
time, you will be....   '
1252 PAUSE 360: BRIGHT 1: PRINT  AT  15,09;  INK  2;  FLASH  1;'
```

```
 ELIMINATED!!': BEEP .30,1: PAUSE 480
1253 PAPER 5: CLS : PAPER 5: BORDER 1
1254 PAPER 5: INK 0
1255 BRIGHT 0: CLS : BEEP .1,11
1260 PRINT AT 13,1;' ENTER SKILL LEVEL FROM 1 TO 5'
1270 PRINT AT 15,5;'1=EASIEST  5=HARDEST'
1280 LET a$=INKEY$
1290 INPUT 'SKILL LEVEL =  ';a$
1300 IF a$<'1' OR a$>'5' THEN GO TO 1280
1310 LET a=VAL a$-(.33)
1314 PAPER 7: CLS : PAPER 7
1320 RETURN
7000 PAPER 0: VLS : PRINT AT 0,0; BRIGHT 1; PAPER 8; INK  2;'A':
PRINT AT 0,0; INK 1; BRIGHT 1; PAPER 8;'D': PRINT ATTR (0,0)
9990 SAVE 'aliens' LINE 1
```

****

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****

PROGRAM MODIFICATIONS
EXCERPT FROM THE T/S TELECOMMUNICATIONS GUIDE
By Pete Fischer and Steve Ishii

As Mterm II is one of the oldest and most widely used terminal programs for the TS 2068, many modifications have been developed by different individuals in an effort to add 'enhanced' features to the program. This is one of the several that you may find useful.

The following information was downloaded from COMPUSERVE and revised by Dave Schoenwetter.

MODIFYING YOUR TASWORD TWO FOR MTERM USE

LOAD your Tasword Two program (with the Bytes, as usual), GOTO the Menu, and use 'b' to Exit to BASIC.

1. Machine Code Routine. Starting at Line 9000, enter the following BASIC loader for the machine code:

```
9000 RESTORE: LET ADR=54848
9010 FOR I=ADR TO ADR+62
9020 READ BYTE: POKE I,BYTE
9030 NEXT I
9100 DATA 33,118,92,78,33,119
9101 DATA 92,70,3,33,86
9102 DATA 104,9,34,75,92
9103 DATA 33,87,104,9,34
9104 DATA 89,92,33,102,104
9105 DATA 9,34,99,92,197
9106 DATA 42,8,243,17,86
9107 DATA 104,237,176,33,85
9108 DATA 104,193,22,64,35
9109 DATA 21,32,4,54,13
9110 DATA 22,64,11,120,177
9111 DATA 40,2,24,241,54
9112 DATA 64,201
```

Once you have typed this in and you are sure it is right, enter GOTO 9000. Now you can just DELETE 9000,9112 to get rid of the loader program. Your Bytes are in place.

2. Now you want to modify the BASIC section of Tasword Two. There are three necessary commands you must include:

* RANDOMIZE a
* CLEAR 54015
* RANDOMIZE USR 54848

I just put these in a convenient place in the program, along with some other lines:

```
5000 REM **MTERM Formatting**
5010 RANDOMIZE a: CLEAR 54015
5020 You can put some PRINT statements in here,
5030 with some explanatory text, etc.
5040 PRINT 'Load your MTERM code now, with'''TAB 2;'LOAD
""CODE: PRINT USR 54016'
5100 RANDOMIZE USR 54848
5200 STOP
```

[Note: the final STOP comand is important.]

Now, whenever you want to format your text file for the MTERM memory buffer, you can just exit to BASIC and enter GOTO 5000.

3. To make things easier, I have expanded my Menu to include the MTERM formatting option. This is what I did:

* Line 25: change VAL '4' to VAL '3'
* Line 60 PRINT: PRINT 'format text for MTERM buffer f'
* Line 70: change PRINT AT etc. to PRINT #0;' etc....'
* Lines 110 to 170: reduce each of the 'LET i=VAL' numbers by one. for example, IF b=VAL'115' THEN LET i=VAL '5'
* Insert Line 175: IF b=VAL '102' THEN LET i= VAL '19'
* Insert Line 670: IF b=VAL '102' THEN GO TO VAL '5000'

Since you have moved the Menu around a little, some of the other PRINT AT statements around the program will not quite line up.

* Line 800: just use RETURN (get rid of the junk)
* Line 900: PRINT AT VAL '7', VAL '0';'Rewind and play the tape to verify''a$: RETURN

There may be some others, too; you will find them. In my program I have used a lot of PAPER, INVERSE, etc. That part is up to you.

4. Once you have all your BASIC modifications in place, enter RUN. Go to the Menu and use 't' to save your new program and bytes to tape.

5. Instructions for Use. You can use your modified TASWORD TWO program (I call it TasTerm) just like ordinary TASWORD TWO, for editing, saving, and printing text. There are just a few things to remember:

* If you intend to upload your text file via MTERM, you must leave the column 64 blank. The machine code inserts an ENTER character at this position, so whatever you put there will be lost. When you begin, just hit CURSOR DOWN once, CURSOR LEFT twice, and use Ext. Mode 'D' to set the margin. Use Sym. Shift 'AT' to get back to the beginning, and you are set.
* Do not load anything into the program that will overwrite the first Help page. As you can see, the MC resides on that (formerly) blank line and you do not want to lose it.
Once you use the formating option, your BASIC program will be lost, so you can't go back to TASWORD TWO. Just enter

LOAD ''CODE: PRINT USR 54016

and load your MTERM program. It will start automatically, and your text will be in the buffer.
* When entering text, I recommend leaving W/W turned ON, and R. Justify turned OFF. You do not want to insert a lot of odd spaces that will not make any sense to whomever reads your uploaded text.
* When uploading the text, it will scroll out in 63-character lines, even if the whole line is blank. That is just the way TASWORD TWO stores text. You will see a '@' signal at the end of your file. (You will probably want to delete the '@' signal after it comes out.)

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