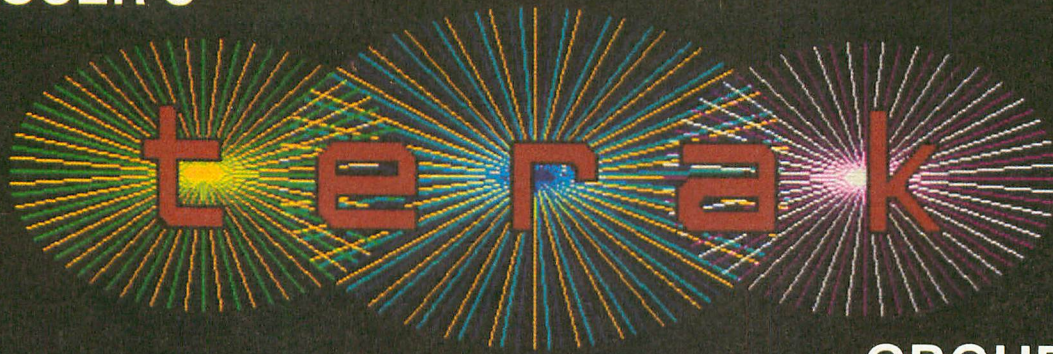


USER'S



MC

GROUP

NEWSLETTER

In this issue:	Page
From the Editors	1
About Software Requests	1
Our Computer Speaks Russian	2
First Terak User's Group Meeting	4
Letters to the Editor	5
Special Interest Groups	5
The Terak Pascal Physics Educators User's Group	5
Chaining Programs under UCSD Pascal	8
Question And Answer - Installing a Line Printer	11
Hardware Hints - Preventive Maintenance	14
And Now a Word From Our Sponsors	15
Terak Introduces New Products	15
MINITAB Is Statistically Proven on Teraks	15
Data Base Management becomes International	16
CAD Instruction with a Terak from T&W	16
Membership Roster Swells	17

Copyright (c) October, 1981, Terak User's Group

It is assumed that all articles or correspondence submitted to the Terak User's Group Newsletter are with the author's permission to publish in any User's Group publication. The articles are the responsibility of the authors and the editor assumes no responsibility for liability for articles or information in the document. The views expressed are those of the authors and do not necessarily represent the views of the Terak User's Group or the Terak Corporation.

The Terak User's Group Newsletter is published bi-monthly by the Terak User's Group.

Editor - Jerry Grady

Associate Editor - Marie Corbin

Writers - Marie Corbin, Dave Delster, Jerry Grady

DEC, DECUS, RT-11, PDP-11 are all trademarks of Digital Equipment Corporation. UCSD Pascal is a trademark of the University of California Board of Regents.
Terak is a trademark of the Terak Corporation.

From the Editors

The response has been amazing! In one month more than 150 membership applications have been received; more than 100 disks from the library have been sent out. There actually are Terak users out there!

A warm "thank you" must be extended to all those persons who have filled out membership applications. It shows that there is a need and support for a User's Group of this kind. Now if only those persons who have been waiting for the right moment will go ahead and fill out and send in the membership application, the membership rolls would probably double in a month again.

Please take a couple of minutes to fill out the application and mail it. It is the only method used to generate a final mailing list for the Newsletter and Bulletin. If an application is not on file, no copies will be sent. You are not automatically on the mailing list just because you received a copy of the first issue.

And if your copies of the first Newsletter and Bulletin have disappeared, write and ask for more. Extra membership forms will gladly be sent along as well. More than one person at a Terak installation site may join - there is no limit to the number of people that may join. Actually, the more the merrier.

To those diehards who have joined, welcome. And lets make this group into a tool that best serves everybody's interests. And from the Editor - Thank You. You have shown that this idea, at least, isn't just a flash on the screen.

As a final note, we would like to take

this opportunity to congratulate and thank the Terak Engineering Group. This group of people has worked very diligently to get several new Terak products into production but get very little public recognition for all their hard work. So at this time we want to say: "Stand up and take a bow. And THANKS!" (See the product plugs in "And Now a Word From Our Sponser".)

About Software Requests

There have been over 50 Software Requests ordering software from the User's Group Library. This is great, as it shows that the software in the Library can be useful to people. But in the process of filling these orders several points have come to light:

PLEASE, please do not send just purchase orders. The User's Group is independent of the Terak Corporation and has no way of processing PO's. Please make the request that a check be processed and included with the purchase order. All purchasing offices will do this, especially for the small amounts of money necessary to order Library software.

Please make sure that all orders are sent to the Terak User's Group address. Currently this coincides with the Terak Corporation address. This can be confusing for Purchasing Offices. They have a tendency to include your Software Requests with general purchases which are sent to the Terak Corporation. The checks are then sent directly to the bank and the software order forms are never seen again. This can cause an unreasonable delay as the orders are chased down.

Do make sure the check is made out to the Terak User's Group and not

the Terak Corporation. The bank gets a bit suspicious when the checks are deposited. Long hours are spent pleading with the teller to accept the checks and not to worry (they probably still do).

Do include a return shipping address with the order form. One order is sitting waiting to be processed because the check has no address on it and the order form is equally blank in that area.

All orders are being shipped via UPS. If this causes a hardship (i.e. the closest UPS office is 70 miles away), please indicate next to the shipping address that the order is to be shipped via US Mail.

Our Computer Speaks Russian

[Editor's Note: This article was written by Ray Coco of the State University of New York, Albany, Computing Center. It is excerpted here from HOTLINE with permission of the author. Future articles on the use of the Terak Graphic Computer System with foreign languages are planned. Input on specific language implementations on the Terak is solicited.]

On January 6, 1978, the (SUNY, Albany) Computing Center submitted a proposal to the Higher Educational Instructional Equipment Grants Program for matching funds to purchase desktop microcomputers, believing that with the advent of this new technology the opportunity existed to radically change the way students learn from and about computers. On June 1, 1978 the desktop computer selection committee agreed to purchase a model 8510/a from the Terak Corporation as it clearly met all the requirements of the Request For Quote.

As an active member of the selection committee, Dr. Ernest Scatton of the

Department of Slavic Languages and Literatures was especially intrigued about this desktop system because of the new areas of linguistics related instruction that could be explored via Terak's programmable character set. For some time Dr. Scatton had been searching for a mechanism by which computers could be used to aid in teaching foreign languages (specifically Russian).

Upon learning that one Terak unit would arrive at Albany in the Fall of 1978, Dr. Scatton decided to seek out colleagues at other academic institutions that were already using Terak systems and developing software for them. In the early winter of 1978-79, Dr. Scatton visited the University of Minnesota where a group headed by Dr. Peter Patton was developing Terak software for a variety of academic disciplines, including the language area. Dr. Scatton returned to Albany confident that software could be designed and implemented on the Terak 8510/a to assist in the teaching of foreign languages and related alternate character set problems, and began this work almost immediately. Although he insists that he is not a "computer programmer" or "technician", Dr. Scatton and his assistants have over the past year and a half produced a great deal of applications software to assist in the classroom - particularly with respect to teaching Russian.

Utilities Support

In order to facilitate the proposed departmental projects, a considerable amount of time was devoted to the design and implementation of various utility programs and to the modification of existing systems software. Much of that work was related to Terak's ability to handle user-designed character sets (making it possible to use Russian Cyrillic and English alphabets simultaneously) and its graphics capabilities. With the help of these

utilities, instructional programs were written to assist in courses in languages and linguistics, both at the undergraduate and graduate levels.

Instructional Programs

Two major instructional programs were completed. The "Articulatory Tract" included a series of four tutorials which were produced making use of a graphics display on the Terak of the human vocal tract to teach and finally test the commonly used nomenclature for the organs and spaces used in human speech.

Russian phonetics was the second major instructional effort. A program was designed to simulate Russian phonetic transcription and to teach the linguistic rules which it involves. The program accepts a Russian word in standard Cyrillic orthography and illustrates the generation of its related phonetic transcription by the step-by-step application of major phonetic rules. The program makes considerable use of graphics to provide the user with screen displays explaining actions taken by the program. These displays replicate handouts provided to the student.

Research

Research in Russian literary bibliographies concentrated on the design and implementation of a system to facilitate creation of bibliographic data files containing both Latin and Cyrillic material. Taking advantage of the Terak's character handling ability, a character set containing both full upper and lower case English and Russian alphabets was built. The original aim of the project was to make it possible to "compute" in Russian as well as English. As a practical application, it is presently being used to build computer-based literary bibliographies made available in machine readable form or as camera-ready copy. Using this

system, a complete bibliography of the important Russian literary journal, Vestnik Literaturny, has been entered.

Typesetting

With the acquisition of a Cyrillic font for the Computing Center's Compugraphic typesetter, the Slavic Languages Department uses the Terak to input and prepare Cyrillic material for typesetting. Both the Cyrillic and Roman alphabets can be viewed simultaneously on the screen. This makes transliteration schemes unnecessary. The software was recently used to input, edit, and typeset two mixed Russian-English texts. The first was a certificate of participation awarded to high school students who took part in a Russian language competition sponsored by the Slavic Languages Department; the second was a Russian text with accompanying notes and glossary, suitable for inclusion in a Russian reader or for use in an advanced course in reading and translating Russian. The hope is to be able to obtain high-quality camera-ready copy of Cyrillic material at a cost that would be attractive to potential publishers.

It should be noted that although Dr. Scatton's work is aimed primarily at teaching linguistics, and even more specifically Russian, the capabilities he and his assistants found so useful in the Terak can be adapted and used equally well for practically any academic discipline. This is reinforced by Dr. Scatton's own words:

"In a single stroke, acquisition of the Terak system has made possible an almost unlimited range of projects which we could only have dreamed of earlier. There are also unanticipated benefits which the Terak has brought. It has served students well by allowing them to gain experience which will be professionally valuable, by opening up to them the exciting perspectives which computing brings

to the humanities. Beyond this, reference to the computing activities undertaken has found its way into our recruiting materials, and has attracted reactions from colleagues in addition to leading to increasing graduate applications."

During the coming year Dr. Scatton's work will continue along several lines including (1) the inputting of additional texts for advanced Russian courses; (2) designing more instructional modules in Russian; (3) pursuing the feasibility of a cooperative project aimed at producing computer-based review modules in Russian grammar (preliminary discussions have taken place with colleagues at MIT and the University of Chicago); and (4) continuing to input other literary bibliographies.

First Terak User's Group Meeting

by Marie Corbin

On Wednesday, August 5, 1981 at ACM SIGGRAPH '81 in Dallas, Texas, a not so august body of people met for the First and Only Original Terak User's Group Organizational Meeting. It was on short notice, but there was a good turnout of approximately 50 people. Here is a brief summary of that meeting:

Discussion of Plan and Intent

With great intentions but little planning, it has been decided that control of the Terak User's Group will remain in Scottsdale for the first year. There will be no election of officers. Jerry Grady, Supervisor, Marketing Software Support, will preside as the User's Group manager for this first year. Terak Corporation has agreed to provide funding for this period of time for the User's Group operations.

Some of the goals for the first year are to obtain an official and legal declaration as a non-profit organization; continue to expand the User's Group Software Library; publish another updated Terak User's Group Bulletin of Available Software (TUGBOATS); publish the newsletter bi-monthly; and write a charter.

Formation of Special Interest Groups is desired. The following groups were suggested: Computer Aided Instruction, Computer Aided Design, Physics and Physics Education, Psychology and Psychology Education, Foreign Languages, and Word Processing.

For the first year, membership dues will not be assessed. Members of the User's Group should consider how they wish to support the organization, beginning with the second year.

Tentative plans for the second year include electing presiding officers, establishing funding, and determining a more concrete direction for the Terak User's Group.

Participation of Attendees

The attendees introduced themselves and stated their interest in the Terak User's Group. This allowed an opportunity for everyone to obtain information from one another and determine common interests. Additional newsletters, software catalogs, and membership forms were made available and all of the User's Group Software was available for copying. This was done for several hours after adjournment of the meeting.

For those who were not able to attend, we hope you can make it to one of the proposed three meetings to be held this year (until July, 1982). There will be much more advance notice and planning for these meetings and possible seminar presentations to make them more

interesting.

SEE YOU THERE!

The Terak Pascal Physics Educators User's Group

Letters to the Editor

Special Interest Groups

Editor:

Please find enclosed an application for membership in the Terak User's Group.

I would also like to suggest the following special interest groups that could be formed within the User Group:

Graphics Packages
FORTRAN
PASCAL
MACRO
RT-11 OS
PASCAL OS
Text Processing

I do not believe that any of these subject areas were brought up at the [Terak User's Group] meeting last Wednesday [August 5, 1981]. Please feel free to contact me if you have any questions regarding this matter.

Robert R. Schneider
Center for Energy Studies
The University of Texas at Austin
Austin, Texas 78712

Editor:

Enclosed is a letter which is being sent to the individuals who have expressed an interest in participating in the Terak Pascal Physics Educators User's Group. Also enclosed is a form to advertise our Special Interest Group in your Newsletter.

I hope to submit to you a description of some of our programs to be included in your Tugboats section and a general statement of our philosophy, goals and methods. There may be a delay in delivering this material because of summer vacation plans of some of the individuals involved.

I hope that we can coordinate our activities in a manner which will assist the usefulness of the Terak User's Group.

David M. Winch
Associate Professor of Physics
Kalamazoo College
Kalamazoo, Michigan 49007

[Editor's Note: The following pages are copies of some of the material sent by Mr. Winch. If you have a further interest in Physics and/or Physics Education on the Terak contact Mr. Winch or send him a completed copy of the Physics Network information form.]

TERAK, PASCAL EDUCATIONAL PHYSICS NETWORK

We believe that a network of TERAK PASCAL users would be very helpful in:

- (1) Avoiding duplication of effort. With some planning we can share software and avoid duplicating the work of others.
- (2) Offer specialized services. For example we here at UN-L have a digitizer and have used an artist to draw pictures to enrich our graphics. We could provide such a network service, perhaps. Others might have other special capabilities.
- (3) Co-author physics lessons. We could define a sequence of physics lecture or lab content and share in the development of the lessons. For example, Bob Fuller and Dave Winch are now involved in a project to develop 24 labs to go along with the main 24 modules of our calculus-based physics keller plan courses at Lincoln and Kalamazoo. We are working together to prepare the lesson materials and coordinate the labs.
- (4) Share existing programs. It is possible that each of us has already developed some programs that would be useful to others.
- (5) Information exchange. Cliff Bettis, here, has developed a scheme that allows one to chain pascal programs together and thus keep the student from seeing the command line between different subprograms of a long pascal program. You may have developed some utility programs that will be useful to the rest of us.

We have adopted an authoring flow chart and project organizational structure similar to those used by Alfred Bork's group (Univ. of Cal./Irvine). We have tried to develop a top down structure for all of our lessons and utilities.

Your comments and suggestions are invited.

TERAK, PASCAL EDUCATIONAL PHYSICS NETWORK

NAME _____ Single Drive _____

ADDRESS _____ Dual Drive _____

TELEPHONE NUMBER _____ Version of Pascal _____

Number of TERAKS _____ Single Density _____ Double Density _____

Other equipment (printer, color monitor, digitizer) _____

Materials that you would share or materials that you would like to obtain _____

Other Comments _____

Please return to:

David Winch
Physics Department
Kalamazoo College
Kalamazoo, Michigan 49007

Chaining Programs under UCSD Pascal

Editor:

I wrote a short note about my chaining program for the Terak User's Group and have enclosed it. I thought it might be of interest to other users and want to do what I can to support an active users group.

Clifford Bettis
Department of Physics and Astronomy
The University of Nebraska-Lincoln
Lincoln, Nebraska 68588-0111

```
{           A Program Chainer for UCSD Pascal
```

```
           Clifford Bettis  
           Department of Physics and Astronomy  
           260 Behlen Lab  
           Lincoln, Nebraska 68588-0111
```

```
At the University of Nebraska-Lincoln we are interested in writing software for computer assisted instruction in laboratory physics. We use UCSD Pascal (both version 1.5 and 2.0) on dual density Teraks. Because computer assisted instruction programs tend to be long we have found that in spite of our best efforts at memory conservation we run into trouble both at compile time (lack of sufficient symbol table space) and run time. Furthermore, for our project (which will involve undergraduates who have little or no computer experience) we feel it is necessary to keep separate our ultimate users and the UCSD operating system. So I wrote the routine listed below to allow the chaining of programs in the UCSD environment. It has been tested on both the single and dual density machines, and has proven non-carcinogenic as far as the operating system is concerned. To use it, compile it, write a calling program (an example, CHAIN_TEST is given below) and compile it and link it to the compiled unit. One can also install the CHAINER in the library using the utility LIBRARY.
```

```
}
```

```
 {$S+}
```

```
UNIT CHAINER;
```

```
  INTERFACE
```

```
  PROCEDURE CHAIN(S: STRING);
```

```
  IMPLEMENTATION
```

```
CONST POINT_ADDR = 48 {60 octal}; OFFSET = 84 {124 octal, there are the values for UCSD Pascal version 2.0; for version 1.5e use OFFSET = 82 (122 octal) };
```

```

RETURN = 13;

PROCEDURE CHAIN;

TYPE
  BUFFER = PACKED RECORD
    QUEUE : PACKED ARRAY [0..63] OF CHAR;
    HEADER: INTEGER;
    TAILER: INTEGER;
    CHAR_COUNT: INTEGER;
  END;

VAR
  KBD_SERV_ADDR : INTEGER;
  RING_BUFF_ADDR: INTEGER;
  I : INTEGER;
  RNG_BUFFER : RECORD CASE BOOLEAN OF
    TRUE : (ADDR: INTEGER);
    FALSE: (BUF: ^BUFFER);
  END;

PROCEDURE GET_ADDRESS(VAR KBD_SERV_ADDR: INTEGER);

TYPE PTR_TO_ADDR = INTEGER;

VAR SERV_LOCATION: RECORD CASE BOOLEAN OF
  TRUE : (LOCATION: INTEGER);
  FALSE: (REG: ^PTR_TO_ADDR);
END;

BEGIN
  SERV_LOCATION.LOCATON := POINT_ADDR;      { Get address of keyboard
  KBD_SERV_ADDR := SERV_LOCATION.REG^;      interrupt service routine }
END;

PROCEDURE GET_BUFF(RING_BUFF_ADDR: INTEGER);

BEGIN
  RNG_BUFFER.ADDR := RING_BUFF_ADDR;      { Point to ring buffer }
END;

BEGIN (* CHAIN *)
  GET_ADDRESS(KBD_SERV_ADDR);              { Point to keyboard service
  RING_BUFF_ADDR := KBD_SERV_ADDR - OFFSET; { The keyboard input buffer is
  GET_BUFF(RING_BUFF_ADDR);                { Put this address into an
  WITH RNG_BUFFER.BUFF^ DO                  address pointer }
  BEGIN
    FOR I := 2 TO (LENGTH(S)+1) DO
      QUEUE[((HEADER+I) MOD 64)] := S[I-1]; { Insert program name into

```

```

                                the keyboard buffer }
    QUEUE[((HEADER+1) MOD 64)] := 'X';      { Preceed with X for eXecute }
    QUEUE[((HEADER+LENGTH(S)+2) MOD 64)] := CHR(RETURN);
                                           { And append carriage return }
    HEADER := (HEADER + 1) MOD 64;         { Update queue head and tail }
    TAILER := (HEADER + LENGTH(S) + 2) MOD 64;
END;
END;
END.
```

{ An example that uses the CHAINER }

```

{$S+}
PROGRAM CHAIN_TEST;
USES CHAINER;
VAR S: STRING;

BEGIN
  WRITELN('What program do you wish to execute?');
  WRITE(': ');
  READLN(S);
  CHAIN(S);
END.
```

{ Note that after the CHAIN procedure is called there should be no READs or READLNs in the calling program as these procedures reset the ring buffer used in the CHAINER. }

Editor's Note: In the UNIT CHAINER, Mr. Bettis uses a technique that is known to most UCSD Pascal hackers to access memory. This is the RECORD CASE structure as used in procedure CHAIN. This structure allows a user to PEEK and POKE memory contents easily. Basically, a record type is set up that is a variable case structure as in RNG_BUFFER. Part of the case is an integer: this is where the address of the memory location to be accessed is stored. The other part is a pointer to a TYPE that represents the data in memory to be accessed, in this case a RECORD structure that is a QUEUE. The address of the interrupt service routine is retrieved (from the contents of location 48) and then a new address is calculated using the known offset of where the keyboard

input buffer is located. Storing this address in the integer portion of the variable case record structure, the queue can now be accessed by pointing to the contents of that address with RNG_BUFFER.BUFF[^].

This technique should be used by only the most serious of hackers that are quite familiar with the memory layout of the Terak/UCSD Pascal OS.]

Question**And Answer -****Installing a Line Printer**

The following is a typical list of the most often asked questions by someone trying to attach a printer to a Terak Graphic Computer System. These questions were derived from frequent telephone conversations with many users. If your particular question is not answered please send a letter to the Newsletter. It will be answered in the next issue. If you have any helpful hints to add to this list, please send those as well.

Q: I want to add a printer to my Terak. What is the best type to use?

A: Choosing a printer is a very personal thing. All of your printer requirements must be considered: Do you want a letter quality printer (fully formed character); Do you want high speed output; Do you want graphics output capability; Do you want different character fonts; What is your price range?

Write down all your printing requirements and then call one or more local computer peripheral dealers. They can provide you with a list of printers, literature, specifications, and price ranges that will fit most if not all of your needs. Choose a reliable dealer and don't forget printer ribbons, paper, an RS-232 cable, and other accessories. A list of printers that are known to work with

Terak Graphic Computer Systems is given in section 4 of TUGBOATS.

Q: What is necessary to connect the printer to the Terak?

A: Basically all you need is an available serial port and an RS-232 cable. But there are a few more requirements. First your printer should have RS-232 serial communication capability. Next the RS-232 cable from the printer must connect to the J1 connector (DCE) of the serial port EIB. Refer to the Terak 8510/a Installation and User's Guide for correct orientation. The RS-232 cable is probably assembled, but for reference, pins 2, 3, 7 and 20 should be connected for use by the Terak. Pins 2 and 3 are Transmit Data and Receive Data, pin 7 is Signal Ground, and pin 20 is Data Terminal Ready (DTR).

Q: What are the functions of these pins?

A: Pin 2 or Transmit Data is the wire that carries the characters from the Terak to the printer or peripheral device.

Pin 3 or Receive Data accepts characters from the printer or peripheral device.

Pin 7 or Signal Ground will help to relieve spurious noise on the other signal wires.

Pin 20 or Data Terminal Ready (DTR) is used by the printer to tell the Terak when it is all right to send another character. In some printers this signal will indicate when the printer's character buffer is full by taking the signal HIGH.

Q: What is a printer character buffer and when does it get full?

A: Almost all new printers have a character buffer. This is a section of memory, usually 100 to 1000 bytes long, that will store unprinted characters. The reason for this is that the computer usually sends information faster than it can be printed. This buffer allows the computer to send blocks of character without waiting for the printer to

print each individual character. The DTR signal indicates that the printer is ready to accept another character. Several printers use this signal to indicate that the buffer is full by changing the signal from active LOW to HIGH. Other printers may use a different method of indicating the buffer is full.

Q: What might those methods be?

A: It will be necessary to check the printer's user or operator manual to find out, but one of the most common methods requires the printer to send a character, such as XON (control S), when the buffer is full and then send a character, such as XOFF (control Q), when it is ready to receive more information. Another method requires the Terak to send a character, such as ETX, and then wait for the printer to send back a corresponding ready character, such as ACK, before the Terak sends any more information.

Q: How does the Terak know which method to use?

A: Guided by the printer's manual, you must choose the correct driving software. This software is available through the User's Group Library. For the RT-11/85 operating system, order disk RT3B-80-0005; for UCSD Pascal, order disk PS20-80-0001.

Q: What is on these disks?

A: RT3B-80-0005 contains the source and system files for several printer handlers. If your printer uses DTR to indicate buffer full, use LPUNT1.MAC and install the file SL.SYS as the printer handler. If your printer uses the XON/XOFF protocol, use LPXON.MAC and SX.SYS. LPETX.MAC and SE.SYS are the corresponding source and handler files for printing using the ETX/ACK protocol.

PS20-80-0001 contains a program called PRINTOUT. This program presents a screen menu with several options. By typing A, then hitting

the space bar, a printer name or protocol will appear. When the correct information is displayed, select your next option by typing its letter. When you quit PRINTOUT, save the status of the program to keep those options you have selected for the next time you execute PRINTOUT.

Q: What about all the switch settings that are referred to in Appendix F of the Terak 8510/a Installation and User's Guide?

A: On page F-1 is a diagram of the serial port EIB (External Interface Board) which is mounted on the rear of the 8510. There are two groups of pencil switches which must be set properly to communicate with the printer. Switches should be set using a paper clip. This ensures that the switch is pressed cleanly and firmly. When setting a switch, it should click audibly into place. Pushing in at the top of the switch will turn it ON (red will show at the bottom). Pushing in at the bottom of the switch will turn it OFF (red will show at the top). Starting from the left, use the following switch settings:

Left 1-ON 2-OFF 3-ON 4-OFF

This selects the serial port for Serial Unit 1, which is what the User's Group software is preset to communicate with.

Left 5-OFF 6-OFF 7-OFF 8-OFF

This turns off the serial port sense switches. They perform no purpose as far as the printer is concerned.

Right 1-OFF 2-OFF 3-OFF 4-OFF

This sets the communication mode to be 8 bit characters, parity disabled, TTY filter disabled, and odd parity. In almost all instances these settings will work with the printer selected. If you are using a teletype model 33, then you may want to enable the TTY filter.

The next set of four switches sets the baud rate for the printer. The following baud rates are the most common:

	Sw 5	Sw 6	Sw 7	Sw 8
300 Baud	OFF	OFF	OFF	ON
1200 Baud	ON	OFF	OFF	OFF
9600 Baud	ON	OFF	ON	ON

The importance of using a paper clip to set these switches cannot be stressed too much. A ball point pen does not make it!

Q: How do I test my printer?

A: Assuming you have followed the Terak installation procedures to check out the serial line unit, and the printer manufacturer's installation procedures, there should be no problem connecting the printer. Set the serial unit switches as indicated above, plug the RS-232 cable into the J1 connector, and power up the Terak and the printer. Under RT-11/85, copy the handler you have previously chosen onto your system disk. For example:

```
COPY/SYS DK1:SL.SYS DK0:<ret>
```

Then install the handler and assign it as logical device LP. For example:

```
INSTALL SL<ret>
```

```
ASSIGN SL LP<ret>
```

LP is the name that all system utilities will output to if they use the printer. Then just type DIR/PRI<ret>. This will print the directory of the disk.

Under UCSD Pascal, eX(ecute #5:PRINTOUT. Type A to choose the printer option, then type the space bar until the correct printer type appears. Type B to enter a file name and type #5:HELPPFILE<ret>. Then type P.

If everything has been set up properly, you should get output on your printer. Possible troubleshooting might include check AC power, check switch settings on the printer and the Terak, and be sure the RS-232 cable is plugged securely into the J1 connector.

Q: I am getting output but it is incomprehensible gibberish. What's wrong?

A: The baud rate between the serial port on the Terak and the printer is

not set properly. Check the switch settings on the serial port EIB and the printer baud rate setting. Correct where necessary.

Q: I am getting output, but after a couple lines, the printer will lose characters, then start printing again, only to lose more in a couple lines.

A: The communication protocol between the software and the printer was not chosen properly. Check the printer manual again and reselect your printer driver as outlined above.

Q: I already have something connected to my serial unit 1. How do I set the printer up on a different unit number?

A: To have more than one device connected to the Terak requires more than one serial unit. Just because there are 3 connectors on one EIB does not mean you can connect up 3 devices. Each connector serves a different purpose in relation to that 1 serial unit.

A second serial unit must be purchased and installed. The only switch setting change from those listed above would be to set the first 4 switches on the left set as follows:

Left 1-ON 2-OFF 3-OFF 4-OFF

This selects the serial port as serial unit 2. The hardware change is easy. The software is a bit more involved. The source files for the printer drivers must be edited and then recompiled and relinked.

Serial unit 1 communicates through memory register 177520 (177522) and 177524 (177526). These must be changed to 177530 (177532) and 177534 (177536) for serial unit 2. The RT-11/85 device handler interrupt vector must also be changed from 120 to 130. The UCSD Pascal PRINTOUT program must be recompiled after the change is made. Several other files are included at compilation time, so have them also available on the prefixed disk. Under RT-11/85, you must have

SYSMAC.SML on SY: for assembly. Name your linked output file with a .SYS extension.

Q: How do I access the printer from my own software?

A: Under RT-11/85, add the command lines to install the device handler and assign it to logical device LP to your STARTS.COM file. For example,
INSTALL SL
ASSIGN SL LP

would be the two lines added in the STARTS.COM (or STARTF.COM) file.

Then in your source program, all you have to do is OPEN or ASSIGN a logical unit number to the device LP:. See the ASSIGN or OPEN statement in the FORTRAN User's Guide, or the OPEN statement in the BASIC-11 Language Reference Manual.

Under UCSD Pascal, you can write to the printer through REMOUT:. You may find it necessary to write a carriage return and line feed at the end of each line output to REMOUT:. No special protocol handling is performed for REMOUT:. If you require this handling, look at the procedure PNTBYT in the source code for PRINTOUT. You can extract the code you need and possibly put it into a unit library.

Hardware Hints - Preventive Maintenance

By Dave Delster

Preventive maintenance on computer hardware is extremely important for the wellbeing of the entire system. With the Terak 8510/a, the user can perform easy maintenance tasks which will extend the life of the Terak 8510/a considerably.

At least once every 30 days, the filters on the rear of the 8510 should be cleaned. This is easily accomplished by removing and cleaning the filter with a vacuum cleaner. To remove the filter, push in on the nylon retaining ring and

rotate it clockwise until the four tabs have cleared the retaining slots. Pull the filter gently out, being careful not to puncture the foam filter. Use a good vacuum cleaner to remove the dust particles. DO NOT WASH THE FILTER! Reinstall the filter by inserting the filter back into the holder, pushing in slightly, and then rotating the filter counter-clockwise until the tabs are locked into the retaining slots. Release the filter and it will fit snugly into place.

Every six (6) months, the diskette drive read/write head should be inspected and cleaned. The only diskette drive head cleaning diskette that is certified by Shugart & Associates is the Innovative Computer Products #FD-08. Through extensive testing, Shugart has found that other cleaning diskettes will grind the read/write head down with their abrasive surfaces. Below is the necessary information for ordering the Innovative Computer Products cleaning diskette.

If you do not have access to the FD-08 cleaning diskette, then a cotton ball and isopropal alcohol (91% minimum strength) can be used on single or dual density disk drives only. This requires removal of the disk drive from the housing cabinet to gain access to the diskette read/write head. First remove the cover of the 8510/8512/8515. With an 8510 or 8515 it may be necessary to remove the circuit boards from the back plane. Gently lift the pressure pad arm which is positioned over the read/write head. Inspect the pressure pad for signs of wear or accumulated oxidation. If this pad looks dirty it may be a candidate for replacement. While holding up the pressure pad arm, gently swab the read/write head with the alcohol soaked cotton ball. Let the head air dry for about 15 seconds before releasing the pressure pad arm. Restore the circuit boards on the 8510 or 8515. Replace the cover for the 8510/8512/8515. This simple procedure

will help prevent damaged read/write heads, erratic diskette errors, and lost data.

Take care of your hardware and it will take care of you.

To order the FD-08 cleaning diskette, contact:

Innovative Computer Products
18360 Oxnard Street
Tarzana, CA 91356
Phone: (213) 996-4911

Order: Innovative Computer Products
FD-08
Diskette Drive Head Cleaning Kit
Part Number: 2024

And Now a Word From Our Sponsors

Terak Introduces New Products

At SIGGRAPH '81 in August Terak introduced and has now begun shipment of the latest new Terak products.

The DEC LSI-11/23 processor is now available as an option on Terak Graphic Computer Systems. The 8510/23 Black and White Graphic Computer System and the 8600/23 Color Graphic Computer System using the DEC LSI-11/23 microcomputer processor come standard with 128K bytes of memory. The LSI-11/23 can optionally support up to 256K bytes of memory. The 8510/23 and 8600/23 systems come standard with a Memory Management Unit (MMU) and the Floating Point Processor (FPP). The 8510/23 and 8600/23 are supported under RT-11/85 Version 4.0C and Terak/UCSD Pascal Version 2.0.

Terak has introduced a Winchester technology, 8-inch, hard disk drive, model 8518. The 8518 provides mass storage capacities of 10, 20, and 40 Megabytes. The 8518 is fully supported under RT-11/85 Version 4.0C and

Terak/UCSD Pascal Version 2.0.

A high resolution, 19-inch, color monitor is now available for the Terak 8600 Color Graphics Computer System. The 19-inch monitor is being offered as an added-cost alternate to the standard 8600 13-inch monitor. The 19-inch monitor features a single in-line gun, to eliminate user convergence problems and a high contrast glass filter to limit flicker and user eye fatigue.

Version 4.0C of the RT-11/85 operating system is also available from Terak. This version of the operating system is designed to support all new Terak products while providing the user with interactive, real time programming capability.

Terak FORTRAN IV/RT-11 Version 2.5 is the latest DEC compatible FORTRAN IV based on ANSI FORTRAN X3.9-1966. Version 2.5 includes a library of FORTRAN-callable graphics subroutines which conform to SIGGRAPH 2D, level 1 standards. FORTRAN IV Version 2.5 operates on the Terak Graphic Computer Systems under RT-11/85 Version 4.0C with a minimum of 512K bytes of on-line storage.

For further technical and pricing information on these new products, please contact your Terak District Manager or the Terak Marketing Department in Scottsdale, Arizona at (602) 998-4800.

MINITAB Is Statistically Proven on Teraks

At last a statistics package is available for the Terak - and a very excellent one it is! MINITAB is a complete statistical analysis system with facilities ranging from simple cross-tabs, tables, and plotting through regression and chi-square analysis. Fully interactive and very easy to use, it's a vast improvement over the batch statistics packages that required weeks

to learn to use the 'control cards'. In addition, it includes new statistical techniques such as Paul Velleman's Exploratory Data Analysis package.

Better yet, this package runs on more than Teraks. You can use it on any LSI-11 or PDP-11 which has an RT-11 operating system. It is not yet available under UCSD Pascal, but the authors of MINITAB have just acquired a Terak and are planning to put it up under UCSD Pascal in the future. In the meantime, they are working on ways to alleviate the problem of having the size of the data arrays bounded by the size of a machine's memory. On the Terak and other small computers, it is not possible at present to manipulate large amounts of data using MINITAB. However, for small amounts of data it is a superb analysis tool. It may be particularly suitable for class use, in conjunction with a MINITAB text book.

If you would like more information on how to obtain a copy of MINITAB, write: MINTAB Project, 215 Pond Laboratory, University Park, PA 16802, or phone (814) 865-1595.

[Reprinted with permission from "nibbles", DACS, Cornell University]

Data Base Management becomes International

International Computing Company (ICC) has announced several recent acquisitions and agreements to develop, market, and support applications and systems software for users of the RT-11 operating system on DEC PDP-11 and LSI-11 computers.

ICC has acquired rights to the popular RTFILE relational data base management system from Interproject, Inc. Robert Natale, Product Manager for ICC, reports that "on-going documentation, development, and support will be the principal marketing factors for RTFILE. Current and prospective users can count on a long-term relationship with us."

Scheduled major enhancements to RTFILE include interactive telecommunications utilities, business graphics, and upgraded distributed data base processing.

ICC has also agreed to be the North American representative of HAMMOND Software of West Germany. HAMMOND Software offers a wide range of software for RT-11 users, most notably the STAR-eleven local area networking system. STAR-eleven links up to fifteen PDP-11 and/or LSI-11 computers in a highly responsive and efficient network with shared and local peripheral devices, increased user job space, improved throughput via I/O and directory caches, performance monitoring, and concurrency control for distributed data base processing under RTFILE with parallel general purpose computing.

Both RTFILE and STAR-eleven have been successfully installed on Terak Graphic Computer Systems. Watch future issues of the Newsletter for an in-depth article on STAR-eleven.

Further information is available from: Robert C. Natale, Product Manager, International Computing Company, 4330 East-West Highway, Bethesda, MD 20014, 301-654-9120.

CAD Instruction with a Terak from T&W

T & W Systems has announced a keyboard-entry version of the T-SQUARE computer-aided-drafting (CAD) system specifically designed for CAD training. The low cost, introductory software uses the keyboard to move a screen cursor to place text, dimension lines, lines, circles, Bezier curves, arcs, polygons, and rectangles. The resultant figure can be stored on diskette and recalled for editing or combining with other figures to form a composite drawing on the graphics screen. The keyboard-entry version is intended for use in low cost introductory training in CAD and as a

first step leading to the comprehensive T-SQUARE which has digitizer input and plotter output.

For more information on pricing and ordering, contact T & W Systems, Inc., 18437 Mt. Langley, Suite B, Fountain Valley, CA 92708, or call (714) 963-3913.

Membership Roster Swells

The following is a list of those persons that gave permission to the User's Group to publish their names, addresses and interests in the Newsletter. The roster is not sorted into any order for this printing, but it is hoped to have the information in a data base for easy sorting and retrieving by keys at a near future date.

Jerry Grady
Terak Corporation
14151 North 76th Street
Scottsdale AZ 85260
Phone: 602/998-4800
Text Processing, Text Editors
Graphics - color and black and white (general)
Languages

Marie Corbin
Terak Corporation
14151 North 76th Street
Scottsdale AZ 85260
Phone: 602/998-4800
Psychology and psychology education

Vicky Reskie
Terak Corporation
14151 North 76th Street
Scottsdale AZ 85260
Phone: 602/998-4800
Marketing, financial forecasting

Sohail Hussain
Terak Corporation
14151 North 76th Street
Scottsdale AZ 85260
Phone: 602/998-4800
Graphics in general
Games
Systems work
Text Editors

Donald L Kaiser, DrPH
University of Virginia Medical Center
Department of Medicine
Box 494
Charlottesville VA 22908
Phone: 804/824-5512
Biostatistics, data file handling, remote job editing and entry to IBM 4341, interface to 11/70 systems

Robert M. Stewart
Iowa State University
Computer Science Department
Computer Science Building
Ames IA 50011
Phone: 515/294-4377

Education

Prof. John A Endler
University of Utah
Department of Biology
Salt Lake City UT 84112
Phone: 801/581-5539
General interest: Population biology, population genetics. Interests relevant to computing: simulation, analysis of pictures, general data analysis

Donald B. Malkoff, M.D.
UCSD: Navy Research and Development
10960 Worthing Avenue
San Diego CA 92126
Phone: 714/695-2873
Neurology and general medicine
Physiology

John W. Paul III
University of San Diego
Alcal Park
Academic Computing
San Diego CA 92110
Phone: 714/293-4567
Graphics
CAI
Games

Michael Ellestad
Medtronic Inc.
6972 Central Av NE
MS230
Minneapolis MN 55432
Phone: 612/574-4552
Simulation of the interaction between body and implantable medical devices.
General scientific computing

Steve Blewitt
Boeing Vertol Company
Box 16858
P32-18
Philadelphia PA 19142
Phone: 215/522-2088
Games, Ada, Data Entry, Statistics, Simulation

C. C. Clawson
University of Minnesota
Box 464 Health Sciences Center
Minneapolis MN 55455

Phone: 612/376-5448

Al Madson
916 Area Vo-Tech Institute
3300 Century Avenue North
White Bear Lake MN 55110

Phone: 612/770-2351

Teaching the fundamentals of Computer Aided Design
and Drafting, also used for class attendance and
progress recording.
Basic Games

John M. Basgen
University of Minnesota
Department of Pediatrics
Box 73 Mayo Building
Minneapolis MN 55455

Phone: 612/376-1172

Data Storage
Morphometric analysis of biological tissue
Text editing

Val Watson
NASA-Ames Research Center
Mail Stop 202A-1
Moffett Field CA 94035

Phone: 415/965-6421

Numerical methods for solving scientific problems
Methods to illustrate physical phenomena

Karl Coke, Jr.
Exxon Company, U.S.A.
Exploration Data Processing Center
P.O. Box 2180
Houston TX 77001

Phone: 713/965-7339

Data entry and lookup for commercial database
Data transmission to and from IBM host
Video display from recorder to CRT

Theodore F. Elbert
University of West Florida
Department of Systems Science
Pensacola FL 32504

Phone: 904/476-9500

Educaton, Languages
Engineering (Control systems) Applications
Business Applications
Operations Research Applicatons

Roger W. Elliott
University of Florida
Computer and Information Sciences Department
512 Weil Hall
Gainesvill FL 32611

Phone: 904/392-2371

Information retrieval
Computer Aided Design
Computer Science Education

Robert Balaban
Management Decision Systems
200 Fifth Avenue
Waltham MA 02254

Phone: 617/890-1100

Information graphics and decision support systems
Developing the Terak for use as an intelligent
terminal for Prime and IBM systems

G. N. Griffiths
Grand Valley State
Math/ Computer Science
444 Mackinac Hall
Allendale MI 49401

Phone: 616/895-6611

Lee Gerdes
Wartburg Theological Seminary
333 Wartburg Place
Dubuque IA 52001

Phone: 319/556-8151

Sister Anette Berger
Wartburg Theological Seminary
333 Wartburg Place
Dubuque IA 52001

Phone: 319/556-8151

Peder J. Johnson
University of New Mexico
Department of Psychology
Albuquerque NM 87131

Phone: 505/277-4339

Control of experiments, primarily in the area of
reaction time studie with visual and auditory
stimuli

Kenneth Johnson
Grand Valley State Colleges
Department of Mathematics and Computer Science
Allendale MI 49401

Phone: 616/895-6611

Editors and Word Processors
Ada
Telecommunications applications

Lyman Elwell
National Bureau of Standards
Molecular Spectroscopy
Bld 221 Room B-268
Washington DC 20234

Phone: 000/000-0000

Elliot M. Landaw, MD, PhD
UCLA School of Medicine
UCLA Department of Biomathematics
Room AV-617
Los Angeles CA 90024

Phone: 213/825-6743

Simulation of Dynamical Systems (Differential Eqs
models) Three-dimensional Phase Portrait Graphics
Nonlinear Regression and Optimal Design Time
Series Analysis (frequency domain) Biomathematical
Modeling, Teaching

Jeff Miller
University of California - San Diego
Department of Psychology, C-009
La Jolla CA 92093
Phone: 714/452-2996

Statistical analysis programs
Word processing

William T. Fletcher
North Carolina Central University
Department of Mathematics
Durham NC 27707
Phone: 919/683-6315

Mathematical software; Computer Assisted Materials
(Instructional) for use in teaching the calculus,
linear algebra

Warren Van Camp
NASA-Ames Research Center (Informatics, Inc.)
MS 233-15
Moffett Field CA 94035
Phone: 415/965-5935

Systems programming
Utilities
Text Editing
Data Networking

Jeffrey Hugo
Luke AFB
OLAK 4444 OPS/TAE
10607 Butler Drive
Luke AFB AZ 85345
Phone: 602/972-9298

Harvey J. Karten, M.D.
Long Island Research Institute
Research Foundation for Mental Hygiene
Health Sciences Center T-10 Room 090
Stony Brook NY 11794
Phone: 516/246-2064
Neurobiology with particular emphasis upon
neuroanatomy. Quantitative morphometry, spatial
geometry of cellular arrays and quantitative
immunohistochemistry

Jerry Tangren
Washington State University
Tree Fruit Research Center
1100 North Western Avenue
Wenatchee WA 98801
Phone: 509/663-8181
Statistical computing on microcomputer,
integrated pest management computer systems,
and environmental biophysical computer modeling

Michael Green
NASA-Ames Research Center
Entry Technology Branch
MS 229-4
Moffett Field CA 94035
Phone: 415/965-6198
Numerical algorithms for scientific applications

William G. Johns
Tektronix, Inc.
M.S. 92-525
PO Box 500
Beaverton OR 97077
Phone: 503/629-1961

Takeo Takeuchi
North Carolina Central University
Department of Physics
Durham NC 27707
Phone: 919/683-6217
Computation in general

Dale Kirmse
University of Florida
Department of Chemical Engineering
Gainesville FL 32611
Phone: 904/392-0862
Computer Aided Process Design
Chemical Engineering
Computer Aided Instruction

Charles A. Warren, PhD
University of Illinois Medical Center
School of Public Health
PO Box 6998
Chicago IL 60680
Phone: 312/996-0831
Real time applications, Perception motor-tracking
and perceptual research including human informa-
tion storage; Even-related brain electrical
activity

Linda Bertotti
Boeing Computer Services
Boeing-Vertol Support District
Scott Plaza II
Industrial Highway
Philadelphia PA 19113
Phone: 215/522-7414
Graphics
Available software
Statistical packages

Richard Kingsley
University of Rhode Island - GSO
Graduate School of Oceanography
South Ferry Road
Narrangansett RI 02882
Phone: 401/792-6103
Easy to use graphics programs for scientific
applications
Word Processing

A.C.M. Oerlemans
Philips Research Laboratories
Bldg. WB3
Eindhoven 5600 MD
Netherlands
Phone: 040/742-0471
Personal computers
Embedded computer systems

M. David Millsap
Las Cruces High School
1755 El Paseo Road
Las Cruces NM 88001

Phone: 505/526-2406

Teaching computer science course including concept of algorithms; Computer assisted learning in chemistry and physics; Illustrate graphically the results of data collected in science labs; Project sequentially the orbital shapes of quantum mech.

Dr. Charles T. Young
Michigan Technological University
Department of Geology and Geological Engineering
Houghton MI 49931

Phone: 906/487-2072

Geophysics; Signal Analysis; Physics; Electrical Engineering; Teaching; Computer Music

Paul E. Johnson
Oak Ridge National Laboratory
Geographic Data Systems Group
PO Box X
Building 4500N, MS H-25
Oak Ridge TN 37830

Phone: 615/574-7450

Graphics

G. B. Bardwell
Las Cruces High School
301 West Amador
Las Cruces NM 88001

Phone: 505/526-2406

Chemistry CAI

A. Soldi
North Carolina Central University
Department of Physics
Durham NC 27707

Phone: 919/683-6350

CAI Simulations

John M. DeDorek
University of New Brunswick
School of Computer Science
PO Box 4400
Fredericton NB E3B 5A3
Canada
Teaching
Performance Evaluation

Phone: 506/453-4566

D. Bouwhuis
Institute for Perception Research
PO Box 513
Eindhoven 5600 MB
Netherlands
Visual perception and reading
Experimental control and on-line data analysis
Word Processing
Computer Aided Learning

Phone: 310/404-7230

Ron Loser
Adams State College
Alamosa CO 81102

Phone: 303/589-7691

Mathematical applications (graphics, simulations, calculations)
CAI

John Kelly
Dicoll Electronics Limited
Bond Close
Kingland Estate
Basingstoke, Hants RG24 0QB
United Kingdom

Phone: 025/661-0551

Howard Porter
Adams State College
Alamosa CO 81102

Phone: 303/589-7541

Sally Nold
Boeing Military Aircraft Company
Flight Controls, Org. 75620
3801 South Oliver
Wichita KS 67210

Phone: 316/526-3766

Software Configuration Control
Automated Design and Software Documentation
Electrical Engineering Aids and Tools
Software Simulation Aids and Tools

S. M. Marcus
Institute for Perception Research
PO Box 513
Eindhoven 5600 MB
Netherlands
Visual perception and reading
Experimental control and on-line data analysis
Word Processing
Computer aided learning

Phone: 310/404-7230

Timoth H. Jackins
Mission Community College
Center for Common Studies
3000 Mission College Blvd
Santa Clara CA 95054

Phone: 408/988-2200

CAI
Computer Education

Richard Campbell
University of California, Irvine
Developmental Biology Center
Irvine CA 92717

Phone: 714/833-5322

Modeling of biological phenomena

Lorin D. Weber
Ricks College
Physics Department
Rexburg ID 83440

Phone: 208/356-2011

Physics lab experiments on Terak 8510/a
Physics computer assisted instruction modules

Christopher Gunn
 University of Kansas Center for Research, Inc.
 University of Kansas Applied Remote Sensing (KARS)
 Space Technology Center (Nichols Hall)
 2291 Irving Hill Road, Campus West
 Lawrence KS 66045

Phone: 913/864-4775

Image processing; image pattern recognition;
 computer graphics; cartography; geographic data
 base retrieval; interactive digitization and
 digital data manipulation; information systems;
 word processing; natural language applications

Lt. Col Donald Pursley
 U.S. Air Force Academy
 Education and Research Computer Center
 DFSEC
 USAF Academy CO 80840

Phone: 303/472-2441

Finite Element Modeling
 Basic Graphics
 Computer Aided Design
 Computer Aided Instruction

Capt. Gary Giesecke
 U.S. Air Force Academy
 Education and Research Computer Center
 DFSEC
 USAF Academy CO 80840

Phone: 303/472-2441

Finite Element Modeling
 Basic Graphics
 Computer Aided Design
 Computer Aided Instruction

Capt. Jesse Jenkins
 U.S. Air Force Academy
 Education and Research Computer Center
 DFSEC
 USAF Academy CO 80840

Phone: 303/472-2441

Finite Element Modeling
 Basic Graphics
 Computer Aided Design
 Computer Aided Instruction

Capt Helen Knight
 U.S. Air Force Academy
 Education and Research Computer Center
 DFSEC
 USAF Academy CO 80840

Phone: 303/472-2441

Finite Element Modeling
 Basic Graphics
 Computer Aided Design
 Computer Aided Instruction

Capt Don Ravenscroft
 U.S. Air Force Academy
 Education and Research Computer Center
 DFSEC
 USAF Academy CO 80840

Phone: 303/472-2441

Finite Element Modeling
 Basic Graphics
 Computer Aided Design
 Computer Aided Instruction

Capt Jon Stevens
 U.S. Air Force Academy
 Education and Research Computer Center
 DFSEC
 USAF Academy CO 80840

Phone: 303/472-2441

Finite Element Modeling
 Basic Graphics
 Computer Aided Design
 Computer Aided Instruction

Lt Anne Shaw
 U.S. Air Force Academy
 Education and Research Computer Center
 DFSEC
 USAF Academy CO 80840

Phone: 303/472-2441

Finite Element Modeling
 Basic Graphics
 Computer Aided Design
 Computer Aided Instruction

Doug Johnson
 U.S. Air Force Academy
 Education and Research Computer Center
 DFSEC
 USAF Academy CO 80840

Phone: 303/472-2441

Finite Element Modeling
 Basic Graphics
 Computer Aided Design
 Computer Aided Instruction

John Walker
 U.S. Air Force Academy
 Education and Research Computer Center
 DFSEC
 USAF Academy CO 80840

Phone: 303/472-2441

Finite Element Modeling
 Basic Graphics
 Computer Aided Design
 Computer Aided Instruction

Robert C. Beck
University of Minnesota
Department of Physical Medicine and Rehabilitation
860 Mayo
Box 297
Minneapolis MN 55455

Phone: 612/373-9037

Grant W. Mason
Brigham Young University
Physics and Astronomy
290 ESC
Provo UT 84602

Phone: 801/378-2450

Computer Assisted Instruction (Physics)

Vittorio Castelli
Xerox/ Mesa
141 Webber Ave
North Tarrytown NY 10591

Phone: 914/631-1196

Scientific Computation
Word Processing
Graphic capability

Dr. Donald G. Morin
Rose-Hulman Institute of Technology
Department of Mechanical Engineering
5500 Wabash Avenue
Terre Haute IN 47803

Phone: 812/877-1511

Animation; Engineering/ Scientific applications;
CAD/CAM

Michael T. Garrett
GDT Associates, Inc.
7700 Leesburg Pike
Suite 409
Falls Church VA
22046

Phone: 703/442-7905

Stephen D. Roper
University of Colorado Medical School
Department of Anatomy
Box B111
4200 E. Ninth Ave
Denver CO 80206

Phone: 303/394-7696

A/D Conversion of signals generated in single
neurons (intracellular recordings); digitizing
photomicrographs and electronmicrographs of
nervous tissue; data files management, including
reprint file management

David J. Cretsinger
Rutgers University
Busch Campus
CCIS Computer Reference Center
P.O. Box 879
Piscataway NJ 08854

Phone: 201/932-2296

Any educational uses of Teraks

John N. Quiring, Ph. D.
Grand Valley State Colleges
College Landing
Allendale MI 49401

Phone: 616/895-6611

Peter J. Boone
Arsycom BV
Kabelweg 43
Amsterdam 1014 BA
Netherlands

Phone: 020/823-858

The various applications for Terak systems.
The software developed for a C.A.D. surrounding.

John A. Stewart
Washington State University
Department of Sociology and Sociological DP Center
204 Wilson Hall
Pullman WA 99164

Phone: 509/335-6860

Previous use was for research in social psychology
and sociology. Future goals include use as a
word processor and small FORTRAN programs for
sociological research

J. Scott Long
Washington State University
Department of Sociology and Sociological DP Center
204 Wilson Hall
Pullman WA 99164

Phone: 509/335-6860

Previous use was for research in social psychology
and sociology. Future goals include use as a
word processor and small FORTRAN programs for
sociological research.

Daniel LaLiberte
University of Minnesota, Duluth
Chemistry Department
Chemistry 136
2400 Oakland Avenue
Duluth MN 55812

Phone: 218/726-7671

Data Base Systems - screen oriented
Interactive Debugging tools
Multi-port communication

Charles Edward Judge
University of Nebraska-Lincoln
Physics Department
Attn: Robert Katz
Behlen Laboratory, Room 365
Lincoln NE 68588

Phone: 402/472-2405

Graphics
Word Processing
Numerical Methods

Dr. Marian Harty
Edgewood College
855 Woodrow Street
Madison WI 53711

Phone: 608/257-4861

Educational uses of computers (college-level);
Statistical Packages;
Innovative Programs

Jerome P. Wood
6105 Harris
Raytown MO 64133

Phone: 816/474-8520

Personal Finance/ Recordkeeping
Pascal language and general Utilities
Graphics

Dennis P. Ortbals
DARCOM-ALMSA
PO Box 1578
DRXAL-TA
St. Louis MO 63188

Phone: 314/263-5646

Business Software
Word Processing
Data Communications
Graphics

Henry T. Sigiura, M.D.
Presbyterian-University of PA Medical Center
Department of Pathology
51 North 39th Street
Philadelphia PA 19104

Phone: 215/662-8077

Dr. David E. Hartman
Chairman
Engineering Division
2100 South Mobberly
Longview TX 75602

Phone: 214/753-0231

Engineering education, applications
Electrical, mechanical, structural engineering

Dr. Leo J. LaFrance
New Mexico State University
Mechanical Engineering Department
Box 3450 JH 159
Las Cruces NM 88003

Phone: 505/646-3501

Computer Aided Design and other Applications of
computer graphics

Dr. Wesley C. Becker
University of Oregon
College of Education - DCEP
Eugene OR 97403

Phone: 503/686-5501

CAI - Language functions

Peter A. Stewart
Brown University
Division of Biology and Medicine
Box G
Providence RI 02912

Phone: / -

Modelling of physiological systems
Graphics
Numerical analysis, word processing, Information
storage and retrieval and processing

Brian J. Pankuch
Union College
Department of Chemistry
1033 Springfield Avenue
Cranford NJ 07016

Phone: 201/276-2600

Software for use with Chemistry students
Software for use in an analytical lab
Interfacing micro with instruments

Sidney Birnbaum
California State Polytechnic University
Mathematics Department
3801 Temple Avenue
Pomona CA 91768

Phone: 714/598-4843

Instructional applications
Numerical analysis

Edward N. Stevensen, Jr.
University of Hartford
College of Engineering
200 Bloomfield Avenue
West Hartford CT 06117

Phone: 203/243-4846

Vibration, motion graphics-design optimization

Lqurence A. Wheeler, MD, PhD
 Indiana University
 N440 University Hospital
 1100 West Michigan Street
 Indianapolis IN 46202

Phone: 317/264-3771

Computer Aided Instruction
 Differential Diagnosis
 Pathology Computing

Gary P. Dirlam, P.E.
 Minnesota Department of Transportation
 John Ireland Blvd
 Transportation Bldg, Room 312
 St. Paul MN 55155

Phone: 612/296-3073

Project Management/Scheduling
 Communication with IBM host; graphic representaton
 of data; support programming operations
 Statistical analysis

Le H. Nguyen
 University of Florida
 CIRCA
 411 Weil Hall
 Gainesville FL 32611

Phone: 904/392-0906

Computer Graphics
 Computer Assisted Instruction
 Word Processing

Betty Ruth Neilly
 Florida International University
 Academic Computer Services
 Miami FL 33199

Phone: 305/552-2567

Education

Terrence F. Flower
 College of St. Catherine
 Department of Physics
 2004 Randolph Avenue
 St. Paul MN 55105

Phone: 612/690-6598

Physics applications

Dr. Frank P. Day
 Old Dominion University
 Department of Biological Sciences - NLSB
 Norfolk VA 23508

Phone: 804/440-3595

Data Management and Analysis (ecology).
 Data Acquisition from Autoanalyzer and other
 instruments

Kerry B. Clark
 Florida Institute of Technology
 Department of Biological Sciences
 Melbourne FL 32901

Phone: 305/723-3701

CAI, data goosing

John G. Hopkins
 West Virginia University
 Department of Physical Science
 306 Hodges Hall
 Morgantown WV 26506

Phone: 304/293-6137

General Physical Science related software (as is
 being developed at Irvine, CA)
 General and advance Physics Instructional software
 Astronomy
 Meteorology

Arthur E. Rogosta
 Aeromechnics Laboratory, USARTL
 Trailer 18
 Ames Research Center
 Moffett Field CA 94035

Phone: 415/965-6235

Operating System Extensions
 Software Development Tools
 Games

Roger Schvaneveldt
 New Mexico State University
 Psychology Department
 Box 3452
 Las Cruces NM 88003

Phone: 505/646-1047

John H. Jinkerson
 NASA-Ames Research Center
 FHI
 Moffett Field CA 94035

Phone: 415/965-5108

Computer Graphics
 Scientific Subroutine Libraries
 Control Theory

Robert Hsu
 University of Hawaii
 Linguistics Department
 Honolulu HI 96822

Phone: 808/948-8602

Non-standard character sets, management of
 word processing software

Dan W. Schlitt
 University of Nebraska-Lincoln
 Department of Physics
 Lincoln NB 68588-0111
 Phone: 402/472-2783

Lewis M. Dreblow
 University of Florida
 Room 101 S.S.R.B.
 Gainesville FL 32601
 Phone: 904/372-2089

CAI, CMI, Real time laboratory applications
 Psychological simulations and testing, Data
 analysis, telecommunications
 Word Processing
 Text Editing

James A. Anderson
 Brown University
 Department of Psychology
 Providence RI 02912
 Phone: 401/863-2195
 Mathematical modeling of the nervous system
 Psychological experiments, pilot studies, data
 analysis

S. Jorna
 Physical Dynamics Inc.
 PO Box 1883
 La Jolla CA 92038
 Phone: 714/454-8831
 Mathematical methods, engineering applications,
 interfacing with analog world, RTTY, Games

Sherry Johnson
 Colgate University
 Computer Center
 Hamilton NY 13346
 Phone: 315/824-1000
 CAI
 Introductory Computer Programming in Pascal
 Statistics

David Thomas Miller
 University of Nebraska-Lincoln
 Physics Department
 Attn: Robert Katz
 Behlen Laboratory, Room 365
 Lincoln NB 68588
 Phone: 402/472-2405

Graphics
 Word Processing
 Numerical Methods

Steven Peterson
 University of Minnesota
 111 Church Street, S.E.
 Minneapolis MN 55414
 Phone: 612/376-1887
 Computer Aided Design

Dr. Kenneth M. McMillin
 Michigan Technological University
 Director
 Simulation Laboratory
 Houghton MI 49931
 Phone: 906/487-2111

Computer Aided Design
 Computer Aided Instruction
 Word Processing
 Networking with VAX 11/750 (DECNET)
 Communication with other computers

Ronald N. Winsauer
 Michigan Technological University
 Senior Systems Engineer
 Simulation Laboratory
 Houghton MI 49931
 Phone: 906/487-2111

Computer Aided Design
 Computer Aided Instruction
 Word Processing
 Networking with VAX 11/750 (DECNET)
 Communication with other computers

John H. Louis
 Michigan Technological University
 Systems Engineer
 Simulation Laboratory
 Houghton MI 49931
 Phone: 906/487-2111

Computer Aided Design
 Computer Aided Instruction
 Word Processing
 Networking with VAX 11/750 (DECNET)
 Communication with other computers

James R. Hoel
 Michigan Technological University
 Computer Maintenance Specialist
 Simulation Laboratory
 Houghton MI 49931
 Phone: 906/487-2111

Computer Aided Design
 Computer Aided Instruction
 Word Processing
 Networking with VAX 11/750 (DECNET)
 Communication with other computer

Lewis C. Hill, Jr.
403 Baylor Drive
Arlington TX 76010

Phone: 817/274-0378

Computer Graphic Applications
Techniques oriented toward commercial art
applications

James C. Brakefield
Technology, Inc.
511 West Rhapsody
San Antonio TX 78216

Phone: 512/533-1228

CAD
Simulation
Graphics Data Base

Karl W. Anderson
University of Wisconsin-Madison
2117 Jefferson Street
Madison WI 53711

Phone: 608/256-8247

Patrick Hanrahan
University of Wisconsin-Madison
117 West Johnson
Madison WI 53706

Phone: 608/262-3336

Jane F. MacFarlane
University of Minnesota
111 Church Street SE
Mechanical Engineering, Room 215
Minneapolis MN 55455

Phone: 612/376-2875

CAD

Richard M. Wilson
ASR
8048 East Indianola
Scottsdale AZ 85251

Phone: 602/949-8293

David Hultgren
University of Minnesota
2170 East Eldridge Avenue
North St. Paul MN 55109

Phone: 612/777-1794

Mechanical Design
Animation

Dr. Frank E. Price
Hamilton College
Biology Department
Clinton NY 13323

Phone: 315/859-4387

CAI, CMI, Simulation of biological phenomena
Statistics
Word Processing
Graphics

David Smallen
Hamilton College
College Hill
Clinton NY 13323

Phone: 315/859-4169

Educational Applications

John Priest
University of Arkansas
Industrial Engineering and Computer Science
E309
Fayetteville AR 72701

Phone: 501/575-3156

Educational packages

Raymond P. Coco
State University of New York at Albany
Computer Center Room Cs-16
1400 Washington Avenue
Albany NY 12222

Phone: 518/457-1893

Word Processing
Networking
Graphics

Rod Smart
University of Wisconsin
Professor
Department of Mathematics
207 Van Vleck
Madison WI 53706

Phone: 608/262-0077

Antony O.W. Stretton
University of Wisconsin
Department of Zoology
1117 West Johnson Street
Madison WI 53706

Phone: 608/262-2172

Quantitative analysis of the geometry of
individual neurons through analysis of serial
sections

Mike Hayes
Comspec
PO Box 29000
San Antonio TX 78229

Phone: 512/340-6507

Business Software
Data Communications
Computer Graphics and Design
Digitizations

Russell E. Steinbach
Southern Illinois University
Department of Technology
Carbondale IL 62901

Phone: 618/536-3396

Data Acquisition systems and data reductions

Dr. David M. Winch
Kalamazoo College
Physics Department
Kalamazoo MI 49007

Phone: 616/383-8451

Harvey J. Poorbaugh
New Mexico State University
Academic Computer Services
Box 3 AT
Las Cruces NM 88003

Phone: 505/646-4433

Dr. Stephen J. Cavrak, Jr.
University of Vermont
Academic Computing Center
Burlington VT 05405

Phone: 000/000-0000

Micro Systems
Computer Graphics
Networking
Languages - Pascal, Modula, C

Jagdish Singh
University of Vermont
Academic Computing Center
Cook Physical Building
Room No. 527
Burlington VT 05405

Phone: 802/656-3190

Color Graphics
Computer Animation
Hardware Systems
Pascal System

Carl Zimmerman
College of Wooster
Computer Center
The Andrews Library
Wooster OH 44691

Phone: 216/264-1234

Computer Science education
Statistical analysis
Word Processing

David J. Krus
Arizona State University
302 Payne Hall
Tempe AZ 85287

Phone: 602/965-3104

Statistical analysis, computerized test administration and interpretation, optical data entry, word processing, typesetting

Marc M. Sebrechts
Wesleyan University
Department of Psychology
Middletown CT 06457

Phone: 203/347-9411

Cognitive psychology; research in human visual perception and human-computer interactions

Joanne L. D. Wolfe
Burroughs Corporation
8900 Shoal Creek
Suite 109
Austin TX 78758

Phone: 512/458-3551

Voice recognition modules, touch screens, digitizers, joy sticks, NTSC input and mix, large screen monitors, color hard copy units

Christopher W. Fraser
University of Arizona
Department of Computer Science
Tucson AZ 85721

Phone: 602/626-4527

Systems software and graphics

Abe Armoni
Infovision, Inc
PO Box 26538
Austin TX 78755

Phone: 512/345-1563

General

Lee Dreger
Honeywell Avionics
13350 US Highway 19
Clearwater FL 33516

Phone: 813/531-4611

Engineering - electrical and mechanical simulation
and analysis
Inter-computer communications to Honeywell and
other mainframes

John R. Haskey
University of California, Irvine
High Energy Physics
Department of Physics
Irvine CA 92717

Phone: 714/833-6430

Systems programming

Rodney L. Smart
Department of the Interior National Park Service
1100 L Street N W
Room 4109
Washington DC 20005

Phone: 202/523-5077

Albert S. Johnson
VA Medical Center
500 Foothill Drive
Salt Lake City UT 84148

Phone: 801/584-1263

Laboratory use of Terak with ATD-D/A capabilities
Word Processing

Cameron Schlehuber
Veterans Administration Medical Center
500 Foothill Blvd
Salt Lake City UT 84148

Phone: 801/584-1263

Hospital Information Systems
Neuropsychology

John W. Snyder
Southern Connecticut State College
Physics Department
Institute for Applied Science
501 Crescent Street
New Haven CT 06515

Phone: 203/389-4558

Scientific Computing
Educational Applications

Graham Mark
Cornell University
Department of Entomology
Comstock Hall
Ithaca NY 14853

Phone: 607/256-3110

Research: insect ecology and evolution, with
emphasis on host-parasite relationships
Computing: simulations of ecological and
evolutionary phenomena; storing and processing
experimental data

Mark Sanford
2805 Bowers Ave
Santa Clara CA 95051

Phone: 000/000-0000

Graphics Applications

Herb Jellinek
Syracuse University
Computer Center
250 Machinery Hall
Syracuse NY 13210

Phone: 000/000-0000

John H. Koar
Harris Semiconductor
PO Box 883
Melbourne FL 32901

Phone: 305/729-5266

VLSI Layout

Mike Fung
Computer System and Technology, Inc
21-55 44th Road
Long Island City NY 11101

Phone: 212/937-2900

Ron Lusén
Princeton University
Plasma Physics Lab - C231
PO Box 451
Princeton NJ 08544

Phone: 609/683-2544

Graphics Software
UCSD Pascal to/from CP/M file transfer utility

Evelyn Culbertson
Rochester Institute of Technology
School of Computer Science and Technology
One Lamb Memorial Drive
Rochester NY 14623

Phone: 716/475-2988

Dr. John L. Lowther
Michigan Technological University
Department of Mathematics and Computer Sciences
Houghton MI 49931

Phone: 906/487-2183

Computer Graphics
Microcomputer Database Systems

Thomas Friden
University of New Mexico
Department of Psychology
Albuquerque NM 87131

Phone: 505/277-4209

Studies on perception and information processing,
often using reaction time as a dependent variable

Robert R. Schneider
University of Texas at Austin
Center for Energy Studies
ENS 143
Austin TX 78712

Phone: 512/471-4946

Digitizing and analyzing oil well logs
Text processing
Development of GSPC/ANSI X3H3 graphics packages

Linda R. Latham
Luke AFB
Tactical Air Command Training Aids Center
OLAK 4444 OPS/TA(E)
Luke AFB AZ 85309

Phone: 602/935-6522

Interface to non-standard and in-house equipment
Computerized training devices
Applications for graphic displays
Information management systems

Hurle F. Priser
Luke AFB
Tactical Air Command Training Aids Center
OLAK 4444 OPS/TA(E)
Luke AFB AZ 85309

Phone: 602/935-6522

Computerized training devices
Interface to non-standard and in-house equipment
Information management

Dr. Robert L. Kruse
Saint Mary's University
Robie Street
Halifax B3H 3C3
Nova Scotia, Canada
Graphics
Syntax-Driven Editors, Interpreters
Text Processing
Combinatorial computing

Phone: 902/429-9780

Robert W. Browne
Tree Fruit Research Center
1100 North Western Avenue
Wenatchee WA 98801

Phone: 509/663-8181

Data Analysis
Modeling
Graphic representation of data

Douglas Afdahl
U. S. Naval Academy
Associate Director for Applications Support
Computing Center
Annapolis MD 21402

Phone: 301/267-3500

Computer aided instruction and training in a
number of academic disciplines -- mathematics,
physical sciences, engineering, navigation;
Interfacing with videotape or videodisc; color
animation and illustration

John E. Howland
Trinity University
Computer Science Department
715 Stadium Drive
San Antonio TX 78284

Phone: 512/736-7480

Kevin M. McMahon
University of Minnesota
Computer Center
227 Experimental Engineering Bldg.
208 Union Street SE
Minneapolis MN 55455

Phone: 612/373-4360

Art applications
Sketching programs

Frank Kelso
University of Minnesota
111 Church St SE
Minneapolis MN 55455

Phone: 612/376-1887

Machine Design
Animation

Ron Lambert
U.S. Naval Academy
216B Ward Hall
Annapolis MD 21402

Phone: 301/267-3508

Computer Aided Instruction
Scientific Applications
Engineering Applications

Paula M. Pollock
Dartmouth College
Baker Library
Hanover NH 03755

Phone: 603/646-3389

John Henry Kuhlmann
The CEREN Corporation
141 N.E. 51st Street
Seattle WA 98105

Phone: 206/634-2189

Graphics
Statistical applications
Electronics
Systems design
Rock and Roll

Tom Gregory
NASA-Ames Research Center
N-227-2
Moffett Field CA 94035

Phone: 415/965-5881

FORTH, DBMS, Graphics, CAD, CAI

Stephen D. Franklin
University of California, Irvine
Computing Facility
Irvine CA 92717

Phone: 714/833-5154

Computer based educational materials
Software tools
Computer Science Education
Graphics

Alfred Bork
University of California, Irvine
Physics Department
Irvine CA 92715

Phone: 714/833-6911

Computer Based Learning
Computer Literacy

Louis N. Nelson
University of Arizona
Engineering Experiment Station
Room 237, Harvill Bldg
Tucson AZ 85721

Phone: 602/626-4965

Interactive teaching
Graphics
Data Acquisition
Games

Ronald E. Kalil
University of Wisconsin
Department of Ophthalmology
173 Medical Sciences
1215 Linden Drive
Madison WI 53706

Phone: 608/262-4903

Quantitative analysis in neuroanatomy

Peter Hawkins
California Portland Cement Company
Central Laboratories
PO Box 947
Colton CA 92324

Phone: 714/825-4260

Data analysis
Laboratory control
Graphics
Word Processing

J. D. Thompson
Augustana College
Department of Physics
Sioux Falls SD 57197

Phone: 605/336-4913

Educational uses
Tutorial
Simulation

Louis J. De Hayes
California State Polytechnic University
Chemistry Department
3801 West Temple Avenue
Pomona CA 91768

Phone: 714/598-4400

Data analysis
Instrumentation
Graphics
Computer Aided Instruction

Dr. Silvano P. Colombano
NASA-Ames Research Center
MS 239-10
Moffett Field CA 94035

Phone: 415/965-6486

Graphics
File transfers to other computers

E. Forrest
A-E-C Automation Newsletter
Editor
7209 Wisteria Way
Carlsbad CA 92008

Phone: 714/438-1595

Bert Shaw
University of Oregon
Computer Science Department
Eugene OR 97403

Phone: 603/686-4408

Oscar N. Garcia
University of South Florida
Department of Computer Science and Engineering
Tampa FL 33620

Phone: 813/974-4232

Education
Video Disk
CAI

Murali Varanasi
University of South Florida
Library 630
Tampa FL 33620

Phone: 813/974-3033

Larry A. Anderson
LeTourneau College
Mathematics Department
P.O. Box 7001
Longview TX 75607

Phone: 214/753-0231

Gregory C. Tsiknas
Cinematronics, Inc.
Senior Systems Analyst
1841 Friendship Drive
El Cajon CA 92020

Phone: 714/562-7000

Firmware Development/Emulation
Graphics Design
Word Processing
Communication with multiuser system

Richard A. Meisch
University of Minnesota
Department of Psychiatry
Box 392 Mayo
Minneapolis MN 55455

Phone: 612/373-5033

Multiple

David Brown
Kansas State University
Department of Chemical Engineering
Manhattan KS 66506

Phone: 913/532-5585

3-D Graphics
Process Control and simulation
Games

Richard G. Akins
Kansas State University
Professor
Department of Chemical Engineering
Manhattan KS 66506

Phone: 913/532-5585

3-D graphics, rotation of diagrams, display of
sections of 3-D diagrams
Process control and simulations

J. L. Hilbert
Harris Semiconductor - Digital R & D
PO Box 883
MS 98-003
Melbourne FL 32901

Phone: 305/724-7548

Graphics Systems for design of LSI and VLSI
Circuits

Robert S. Lasher
University of Colorado Medical School
Department of Anatomy
Box B111
4200 East Ninth Avenue
Denver CO 80262

Phone: 303/394-7056

Morphometric analysis of electron micrographs of
nervous tissue
Analysis of relative mobilities and patterns of
polypeptides obtained after 1 and 2-dimensional
polyacrylamide gel electrophoresis

Douglas D. Dankel II
University of Florida
C.I.S.
512 Weil Hall
Gainesville FL 32611

Phone: 904/392-2371

CAI
Artificial Intelligence

Martin B. Solomon
University of Kentucky
Computing Center
Room 72, McVey Hall
Speed Sort 00451
Lexington KY 40506

Phone: 606/258-2914

Thomas Szebenyi
Cornell University
Department of Geological Sciences
321 Kimball Hall
Ithaca NY 14853

Phone: 607/256-4743

Editors - Scripting
Digitizing - Graphics displays
Bit map hard copies

Jeremy M. Wolfe
Massachusetts Institute of Technology
Department of Psychology
E10-138
Cambridge MA 02139

Phone: 617/253-5710

Research in human vision
Cognitive processes
Visual Development

David Tames
PO Box 12462
Gainesville FL 33406

Phone: 904/372-9071

Real Time Data Collection, Physiological data
Data Analysis (interactive)
Graphics
Word Processing
Data Entry and retrieval systems

Lowell H. Hall
Eastern Nazarene College
23 East Elm Avenue
Quincy MA 02170

Phone: 617/773-6350

Undergraduate chemistry curriculum (simulation,
statistics, student graphics, physical and organic
courses)
Research: Structure-Activity Relationships
Interfacing

Roger W. Petry
 Univeristy of Minnesota/Duluth School of Medicine
 Physiology, Room 345
 2400 Oakland Avenue
 Duluth MN 55812

Phone: 218/726-7964

Numerical analysis
 Modeling
 Word Processing, CAI
 Bitpad mapping
 Distributed processing

Steve Rigler
 Versatec/ A Xerox Company
 2964 LBJ
 Suite 408
 Dallas TX 75234

Phone: 214/620-7620

Graphics

Jack Berkstresser
 University of Missouri - Columbia
 Academic Computing Center
 100 Lefevre Hall
 Columbia MO 65201

Phone: 314/882-7876

Instructional computing
 Introductory CAD

David R. Hunter
 Air Force Human Resources Laboratory
 AFHRL/MOAM
 Brooks AFB TX 78235

Phone: 512/536-3845

Psychological Research
 Cognitive and Perceptual Motor

Dr. Bruce R. Dunn
 University of West Florida
 Psychology Department
 Pensacola FL 32504

Phone: 904/476-9500

Individual differences in semantic processing as
 determined by EEG measurements
 Use of evoked potentials to psycholinguistic
 research

Lawrence A. McCarter
 Watkins-Johnson Company
 Head, Software Engineer, CSD
 700 Quince Orchard Road
 Gaithersburg MD 20760

Phone: 301/948-7550

Ann Christy
 Library of Congress
 1st and Independence, S. E.
 Washington DC 20540

Phone: 202/287-9711

Lt. Col. Tom McCann
 US Air Force Academy
 Department of Physics
 USAF Academy CO 80840

Phone: 303/472-3510

Computer Assisted Instruction
 Simulation
 Process and Experimental Control

Hirokazu Miura
 NASA-Ames Research Center
 MS 237-1 Aeronautical Systems
 Moffett Field CA 94035

Phone: 415/965-5888

Computer Aided Design
 Finite Element Method

George Pack, PhD
 University of Illinois College of Medicine
 1601 Parkview Avenue
 Rockford IL 61101

Phone: 815/987-7026

Conformations and interactions of molecules

Larry D. Brown
 Cornell University
 210 Kimball Hall
 Ithaca NY 14853

Phone: 607/256-7357

Mark Smith
 Univeristy of California, Berkeley
 Wurster Computer Center
 330 Wurster Hall
 Berkeley CA 94720

Phone: 415/642-2847

Architectural applications
 Graphics

Edward L. Mooney
 Montana State University
 Industrial and Management Engineering
 Roberts Hall 315
 Bozeman MT 59717

Phone: 406/994-3971

Thomas N. Kearns
 Library of Congress
 Automated Systems Office
 10 First Street, S. E.
 Washington DC 20540

Phone: 202/287-8341

On-line data entry with super-imposed diacritical
 marks

Future project using color graphics

Terak User's Group Membership Form

Please enter me as a member of the Terak User's Group for the year ending June 30, 1982. At this time no dues are required.

(Please type. All submitted forms will be photocopied.)

Name _____

Organization _____

Address _____

City _____ State _____

Country _____ ZIP/Postal code _____

Phone (_____) _____ - _____ ext. _____

Computer System

Terak 8510/a _____ Terak 8600 _____

8512 (number) _____ 8515 (number) _____

Printer (type) _____

Other Hardware _____

Operating System

UCSD Pascal V1.5e _____ UCSD Pascal V2.0 _____

RT-11/85 V2C _____ RT-11/85 V3B _____ RT-11/85 V4 _____

Other _____

Languages

UCSD Pascal _____ OMSI Pascal _____

SVS FORTRAN _____ FORTRAN IV _____

BASIC _____ C _____

Macro-11 _____ Other _____

Interests

I hereby grant permission to the Terak User's Group to publish or otherwise make the above information available to other members of the Terak User's group.

Signature _____ Date _____

Mail to:

Terak User's Group
Membership
14151 North 76th Street
Scottsdale, Arizona 85260

Terak User's Group
Newsletter
14151 North 76th Street
Scottsdale, Arizona 85260



THIRD CLASS MAIL

Dr. Jerome H. Klotz
University of Wisconsin
Statistics Department
1210 W. Dayton Street
Madison WI 53706

MOVING??

Please notify us immediately to guarantee continuing receipt of Terak User's Group literature. If you do not wish to be on the Terak User's Group mailing list please indicate that also.

- () Change of address
- () Remove me from your mailing list.
I get enough junk mail already.

Terak User's Group Membership Number: _____ - _____

Name: _____

Organization: _____

Address: _____

City: _____ State: _____

Country: _____ Zip: _____

Mail to:

Terak User's Group
14151 North 76th Street
Scottsdale, Arizona 85260

Please attach old mailing label here: