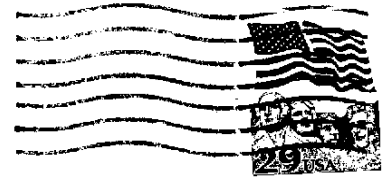
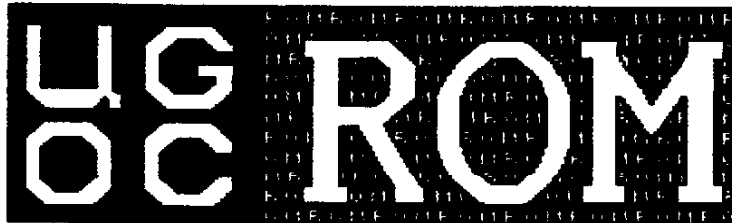


**THE R O M NEWSLETTER  
 USERS GROUP OF ORANGE COUNTY  
 17161 EDWARDS STREET  
 HUNTINGTON BEACH, CA 92647**



**DALLAS TI COMPUTER GROUP (DTICG)  
 PO Box 29863  
 Dallas  
 TX 75229**



**AUGUST 1991**

**MEMBER OF THE INTERNATIONAL FEDERATION OF COMPUTER SOCIETIES**

# WE MEET AT FIDELITY FEDERAL

## TIME AND PLACE OF MEETING

The SECOND Monday of each month at  
 Fidelity Federal Savings  
 7:30 PM

North of Westminster Ave. at the corner of  
 Seal Beach Blvd and St. Andrews at 13826  
 Seal Beach Blvd. Parking is available  
 west of the building off St. Andrews with  
 additional parking across the street.  
 All are welcome.

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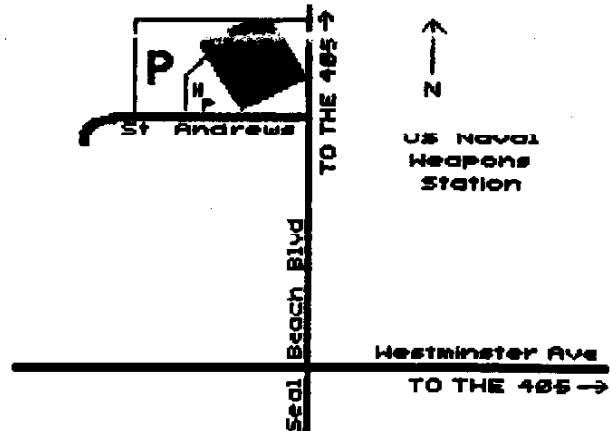
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We solicit letters and articles of interest to the TI-99/4A user community. Material accepted may be edited for fit and format. No payment is offered nor intended (other than your byline).



### NEWSLETTER CONTRIBUTORS

**EARL RAGUSE . . . . . TI FORTH  
 ADRIAN ROBINSON . . . . . ASSEMBLY  
 EARL RAGUSE . . . . . CIRCULATION  
 JIM SWEDLOW . . . . . AT LARGE  
 BILL NELSON . . . . . GRAPHICS  
 SILES BAZERMAN . . . . . HARDWARE**

### TI CLUB ACTIVITIES

CLUB	ACTION	DATE	INFO
BUG	GENERAL MEETING	06 AUG	871-0406
UGOC	LIBRARY, FTNULY	06 AUG	842-8869
UGOC	GENERAL MEETING	12 AUG	662-2957
UGOC	LIBRARY, FTNULY	13 AUG	842-8869
UGOC	LIBRARY, FTNULY	20 AUG	842-8869
UGOC	BOARD MEETING	26 AUG	897-2968
UGOC	LIBRARY, FTNULY	27 AUG	842-8869
UGOC	NSLETTER LIBRARY	CALL	847-5875

**PRESIDENTS MESSAGE**  
by Siles Bazerman

Hello, again. I hope you found all you needed at the just past ACP swap meet. Remember, it takes place every two months.

It's not too early to start making plans for Fest West 92. February will be here before you know it. The fest will be held in Phoenix Arizona on February 15 and 16, hosted by the VAST Users Group. Those of you that have attended past fests know how much fun it is, while the rest of you should try it. You will like it. I will keep you posted as more details are known. Last meeting we had a demo of console only computing. This month we are going to the other end of the scale with a demo of the Geneve. The Swan will show off its magnificent plumage. Included will be a first public showing of the Beta version of a new program written by our own Jerry Rash. Mdos operation has never been this easy.

In September we will be holding another of our long awaited UGOC SWAP's. Start collecting all your junk that will be someone elses treasure, and start saving to acquire new treasures for yourself. Due to the nature of the swap there will be no formal program, but, as always, there will be a series of informal SIGs and discussion groups.

In response to a request from one of our members in October, we will be examining the floppy disk, with tutorials on disk structure included. We will go into sector editing and the use of several programs that do this. Also as always we will also have a library demo.

The programming for the rest of the year is rather vague, and I hope more sugestions from our members will be forthcoming. The board needs this input to make our group more enjoyable, and to meet the needs of our members.

**WE DON'T KNOW IF YOU DON'T TELL US!**

One other note. Starting this month the date of the Board Meeting will be moved

to the fourth Monday of the month. They are normally held at my house, and every one is welcome. Just call for directions.

See you all at the meeting, and keep Tling.

Sile's phone number is on the cover, or call someone else, but come! [Ed]

**JULY BOARD MEETING**  
By Gene Smith, Secretary

JULY 24, 1991. The meeting was held at the home of President, SILES BAZERMAN, and was called to order by him at 7:24 P.M. Others present were BILL NELSON, GENE SMITH, ERWIN METZ, STAN CORBIN and JERRY RASH.

The Secretary's report of the June Board Meeting was accepted as published in the July ROM.

BILL NELSON, as the HALL of FAME CHAIRMAN reminded the BOARD that a check needed to be made out, as determined by the action of the membership at the July General Meeting, to John Birdwell and mailed to the John Birdwell Memorial Fund. He stated that LOU PHILLIPS and CHRIS BOBBIT are still nominees for the Hall of Fame and that another TI contributor should be nominated at next month's General Meeting so that the group can have three candidates for consideration.

ERWIN METZ, THE TREASURER, submitted a detailed itemized report of the group's financial condition which showed that we are paying all of our bills and that we are in good shape financially. The report was approved as read.

EARL REGUSE, the ROM EDITOR, was unable to attend the Meeting, but had stated to other Board members that he needs more items so that he can include them in the next ROM.

STAN CORBIN, the MEMBERSHIP CHAIRMAN, stated that we presently have 51 paid-up members and that he had received two

requests from interested parties for membership forms. A question of a membership number was discussed. This refers to the number that is assigned to a person when he/she joins the group.

The Board considered and discussed the request for an increase in funds for the operation of our Bulletin Board and no change was recommended.

They also considered the increase in postage for sending the ROM overseas, as it is substantial, but no conclusion was reached.

It was called to the attention of the Board that some of the members of our group, namely NEMT ARMSTRONG, EARL RAGUSE, GENE SMITH, ERWIN METZ and STAN CORBIN were presently conducting computer classes each Friday for Senior Citizens at the Senior Citizen Center in Orange, CA. At the first meeting on July 12th over 30 "students" signed up.

The goal has been to acquaint those interested with the wide capabilities of the TI-99/4A and how inexpensive it is, presently, to obtain a basic unit (console, video modulator and TV set) for themselves. The high level of interest, thus far, has been rewarding.

We were reminded that the NEW meeting day for BOARD MEETINGS, STARTING NEXT MONTH will be on the 4th MONDAY of the month.

The AUGUST GENERAL MEETING is to consist of a DEMO by JERRY RASH or SILES BAZERMAN on the GENEVE SYSTEM and a LIBRARY DEMO.

The SEPTEMBER GENERAL MEETING is to consist of a SWAP MEET and a LIBRARY DEMO.

The OCTOBER GENERAL MEETING will consist of a DEMO of DISK-U and DISK PATCH programs by SILES BAZERMAN and possibly a DEMO of the DISK-MAPPING program by JIM SWEDLOW.

The MEETING ADJORNED at 8:50 P.M.

**UGOC HALL OF FAME**

By Bill Nelson

For the second quarter of 1991 the members of the UGOC are proud to have elected Mr. John Birdwell to the UGOC Hall of Fame.

John has done many things for the TI community. Many utilities can be attributed to John but none speak better of his works than Disk Utilities. Disk utilities has got to be the best all around disk manager that is available for the '4A. Sector editing to disk copying, Disk Utilities does it all. Another of John's works include the Myarc Disk Manager V for the Myarc HFDC (a lot of work was done by Mike Dod). John was working on the streamer tape and it is believed to be complete by some reports.

This award comes late for most know that John passed away December 27th, 1990 and we will all miss him. We are grateful for his past works and wish his family and friends our warmest regards.

Kathy Birdwell, John's widow, has donated all further proceeds from software registration fees to the John Birdwell Memorial Fund. For those who have not registered their copy of John's software, you may do so at the following address:

The John Birdwell Memorial Fund  
c/o Chicago TI Users Group  
P.O. Box 578341  
Chicago, IL 60657

This award will be sent to Trustees of the fund for proper handling.

**UGOC HALL OF FAME REPLIES**

This month we received a reply from Mr. Clint Pulley, he sent us this nice letter and here is what he had to say:

It was with considerable embarrassment that I realized, a few days ago, that I had not yet replied to my induction into your Hall of Fame. Thank you very much! The certificate is hanging on the wall beside my Geneve and your "token of appreciation" has helped pay for a recent hard drive upgrade.

I first encountered a computer in 1959, started programming as a grad. student in 1965, and began programming professionally in 1967. Originally an applications programmer, I moved into operating systems support in 1970. Since 1972 I've been Head of Computer Services at the Canada Center for Inland Waters here in Burlington, managing a series of CDC Mainframes, DEC minis, and assorted micros over the years. Recently I have become involved with network management and am currently involved in connecting our facilities to the Internet. If any UGOC members have Internet access I can be reached at <u001@cs.cciw.ca>.

After much consideration I bought my first home computer, a TI-99/4A, in 1982. I've produced a lot of fairware and public domain software for the '4A and 9640 since then. Two of my early releases were the 9900 Breakthru game (originally written using Mini-Memory and the Dow Editor-Assembler in 1983) and the Mini-Mem TI-Writer Loader (later the Super-Space loader, parts of which ended up in the Horizon Ram Disk software). In the fall of 1985 I released the first version of c99 for the 99/4A, to be followed by three more releases. The following summer I started working with the Geneve Prototype, so when I got my real Geneve in September 1987 I was already familiar with much of the hardware. Since that time I have produced c99/NDOS which includes the GDE editor, ASM assembler loader and LDR program loader. I have also written and ported a number of other programs in c99 (COREWAR and DM, for example) for the NDOS environment. I am currently working with Al Beard on the TIC (full C compiler for the Geneve) project, writing the library functions and beta testing the compiler.

I've been happily married for 23 years and am the father of three great kids. My eldest, Harry, will be entering his junior year in Computer Science this fall so the next generation of programmers will include at least one member of the Pulley family!

Once again, thanks very much for the recognition.

Clint Pulley

As we get more responses from the awardees, we will reprint them in the ROM for everyone's enjoyment.

Thanks again Clint for all that you've done for the TI community.



APPLE REPAIRMAN

**ROM EDITORIAL POLICY**

Contributions to the ROM become UGOC property. That is not to say that the author can not do what he wants with his creation, but the ROM reserves the right to edit copy for form and fit. Spelling errors, if detected, may be corrected. Obviously missing words may be added, duplicate words deleted, and punctuation may inserted as needed. Also graphic images may be inserted where deemed appropriate. It will not be the policy change the author's intent, however. When there is doubt, the author will be contacted, if submittal is early enough. Submittals must be in by the fourth Monday of the month, to be included in the next ROM, so that the ROM can be mailed in time to arrive before the general meeting.



**UGOC  
BULLETIN  
BOARD**

**330/1200;2400 BAUD  
(714) 751-4332**

BIOGRAPHICAL SKETCH OF GENE SMITH  
By Gene Smith

Born in Huntington, Indiana; attended school there until graduation.

Attended Ball State Teacher's College in Muncie, Indiana on a scholarship, (goal to become a coach), but "dropped out" after a year due to an athletic injury.

Married; we celebrated our Golden Wedding Anniversary recently; my wife (Marjory) was a Teacher; we have one son and two grandchildren.

Worked for Pennsylvania Railroad as a Trainman and Conductor until entering the Air Corps during World War II; served primarily as a B-29 Gunnery Instructor.

Went back to college on the G.I. Bill; earned a Bachelor's degree with majors in Physical Education, Industrial Education and Social Studies.

Accepted a teaching job in Ft. Wayne, Indiana; taught Woodshop, Metalshop, Drafting, and Civics; commuted to Ball State and completed masters degree in Administration and Industrial Education.

Was elected, and served, as a Member of the Indiana State House of Representatives (Legislature) and served as the Secretary of the Education Committee.

Served for two years in Indiana as a School Principal (grades 1-12).

Taught Woodshop, Metalshop, Drafting, Civics, Math, History, etc. in California during last 20 years before retiring in 1980.

Enjoy as hobbies: motorhome travel, light-plane flying, fishing, boating, playing chess and woodworking, (am known as "Ye Olde Toymaker").

Purchased my first TI-99/4A computer, primarily to play chess with; joined TI Computer Club (UGOC) in April, 1983; was elected to serve as the Secretary of the Group in 1990; am still serving in that capacity and am convinced that MOST PEOPLE ARE NOT AWARE of what can be accomplished with this computer.

PANDEMONIUM

Patter With Pan  
By Charles Hubbard  
Brevard UG NL 5/91

"Hello!, Welcome to Pandemonium, your friendly 'does--it--all--now' computer software--word jockey, number cruncher, data masseur. Let me introduce myself: I'm your tutorial. Let me show you the ropes. Just call me Pan, and it's your turn. Please type in your name on the keyboard, no more than twelve letters."

"Well, Hello again, Tom Jones. Since we are friends, I'll just call you Tom. Ha! it's your turn again, Tom. Please press the 'Enter' key; that's the one on the right."

"Very good Tom! You really catch on fast! Look at that list on the screen. Each item has a letter; you choose from the list by typing the letter. We call this list a menu. Try it, Tom. Press a letter key, see what happens".

"Oh, not the 'L' key, Tom. You see, 'L' wasn't on the list. You have to choose a letter from the menu. Press another key."

"Not the 'Control' key, Tom. That's confusing because it brings up the next instruction. Please, We're in this together. We can't go to the next item until we've finished this one. Come On, tom a letter please!"

"Oh! No! Not 'Control' again ..."

"Must have a letter ..."

"Pandemonium! ... Jumble ..."

"No Compute!"

"Bedlam! ... Babel! ... Berserk! ..."

"Breakdown ... Meltdown ..."

"Lights out ... Ah, Oblivion!"



FAT PLANE



BIPLANE

THE MEMBER SHIP  
by Stan Corbin

Ahny mates! We gained another new member last month after the ROM had gone to bed. George Clark is a senior citizen of Quebec, Canada, and has been communicating with Earl Raguse. He was so pleased with the help he recieved, that he demonstrated his gratitude by becoming a member. It seems George had almost given up on his TI until he suddenly learned that there are thousands of us TI'ers out here. Now he is very excited about his future with the TI, and well he should be. It's doubtful he is aware of Funnelweb or Boot, or any of the other great programs for the TI. He will be ecstatic as a cat in catnip, when he gets his hands on some of the newer programs. It is rewarding to see someone so excited about his TI. We are thrilled to have George for a member and look forward to many years of association.

Unfortunately Dennis Ungeheier did not get to our July meeting. We were looking forward to meeting him and it was quite a disappointment that he was unable to make it. Because he lives at Lake Elsinor, and he would have so much traffic to fight, we understand why he did not attend.

We are pleased with the response from those whose membership renewal was due in June. Bob and Betty August jumped in and paid before we notified them. Marion Scott, Donald Watson, Al Rosetta Lingle, George Maidane and Frank Aylstock have all renewed their membership for another year. Thanks people for your continued support.

Frank Aylstock recently returned from a trip up north. He stopped by in Eureka to see Fred Wagner, former president of the Brea Users Group. Fred went north a couple of years ago to live in, what he has recently learned, is earthquake country. Frank also stopped by to fish with Joe Stoniany, who is vacationing in Idaho.

Jerry Rash has become a stranger to everyone since he began taking some

computer courses at a local college. Jerry has also been writing a program for the Geneve, which he plans on marketing. You are missed Jerry.

Jerry Bartren, who lives in Carlsbad, is selling off his TI system. It saddens us that he is leaving the TI world but he wouldn't be leaving without having given it serious thought. Jerry is offering a very complete system for a reasonable price. He intends to be at our August meeting with his system to sell. An excellent buy.

Newt Armstrong established a computer class at the Orange Senior Citizen center, for senior citizens. The first session overwhelmed Newt and his staff, consisting of Gene Smith, Earl Raguse, and Erwin Metz. There were nearly fifty seniors responding, and surprisedly most were women. At least 37 had signed up for the class, the others were attracted by the interesting demonstrations. The second session held the 19th of July had over 25 people present, most of whom were interested in word processing. These ladies were very much interested in learning more about computers and how to use them. One 89 year "young" lady, was learning very quickly about word processing. She will be one of our star pupils.

The second session was set up to give some of the students a chance for hands on operation of the computer with assistance from the instructors. Few of the students were interested in spread sheets or data bases, so Gene Smith, who was giving instructions in word processing captured more of the students. Earl demonstrated many of the features of the TI computer, which attracted a good audience, as well as several students for hands on operations.

Erwin Metz had difficulty finding someone interested in Multi-Plan, but because he has some knowledge of IBM computers, was able to help some who had IBM clones to use. These classes were not just for the TI but were to help all that we could help. Lou Palush of a local Commodore club helped those with

Commodores. These classes engendered a mutual appreciation between the students and the teachers. To be expected of course, the teachers learned a lot.

We commend Newt for his foresight in establishing these classes.

Join us next month on our Member Ship cruise.

AUTO COMPUTER MUSIC  
By Earl Raguse

About 15 years ago there was some music the was supposed to have been composed by a computer. It was pretty good I thought, but I doubted the word composed. Generated may have been a more accurate word. Although music is a mathematical subject, I will never believe that some genius' formula will do a truly creative task. However, after listening to the "music" played by the following little program, written by a 12-year old almost makes me a believer, a non-disbeliever at the least. It is short, type it in and run it, its worth the effort. Press any key to stop it.

```

100 ! SAVE DSK1.AUTOMUSIC
105 REM from ENTER magazine
    (by a 12-year old), reprinted
    in MENJUG North newsletter
    April 85, author not named.
110 REM echo
120 DIM A(6)
130 RANDOMIZE
140 DATA 247,262,294,330,349
    ,392,440
150 FOR B=0 TO 6
160 READ A(B)
170 NEXT B
180 B=INT(RND*7)
190 C=B
200 B=B
210 GOTO 250
220 D=C
230 C=B
240 B=INT(RND*7)
250 CALL SOUND(-200,A(B),0,A
    (C),9,A(B),19)
260 CALL KEY(0,E,F)
270 IF F=0 THEN 220
    
```

**FORTH IN REAL TIME CONTROL**

By Earl Raguse

The following article was copied verbatim from a sidebar to an article on real time HVAC control in the SATURN plant in Tenn, which appeared the SENSORS April 91 magazine, that is written generally for control system engineers. I thought it interesting, even though I have stopped writing about Forth because I was getting lonely, and felt like I was beating a dead horse. in the II world anyway. Not so, in other worlds, it seems. The author worked for Forth Inc, the firm that sponsored the "Starting Forth" book. The last part of the side bar was trimmed off because it was mostly a commercial for PolyForth.

**Forth For Industrial Applications**

Forth may be the only one of today's popular computer languages designed specifically for real-time control applications. Originally developed at the National Radio Astronomy Observatory about 1970, it was first used to control an 11 meter radio telescope while concurrently recording and analyzing data. Forth is widely used in industries ranging from aerospace companies such as Boeing, TRW, and McDonnell Douglas to more conventional industries such as Saturn (as described in this article) and Federal Express (whose Super Tracker system, programmed in Forth, won a Malcom Baldrige award in 1990). Three out of four astrophysics experiments on the recent Columbia Space Shuttle flight were programmed in Forth, a fact that enabled the scientists to recover rapidly from the numerous hardware failures that threatened their projects.

Forth is unusual in that it integrates all of the tools used for programming and debugging with a run-time environment suitable for real time applications. Top-of-the-line versions of Forth typically provide full multitasking and multiuser operating system support as well as high speed interrupt handling and other features needed for control applications.

As a programming environment, Forth

provides an interactive means of writing and testing programs. With its high level language interpreter and compiler and an assembler for embedded code, all memory resident, along with a simple but effective editor, Forth allows a programmer to test new routines and see the results of changes in seconds, without the delays normally required for compiling and linking conventional programs.

Forth is structured and highly modular. These characteristics along with Forth's intrinsic interactivity, enable programmers to produce reliable, tested programs in an extremely short time. At the same time, Forth programs are quite fast: benchmarks show Forth to be significantly faster than BASIC, for example. Time-critical functions can be coded with Forth's embedded assembler to run at full machine speed.

On the down side, Forth is not derived from any other languages, and therefore looks unfamiliar to novices. Also a side effect of its highly integrated nature is that it doesn't interface well to modules written in other languages; its designed to solve the entire problem.

**WARNING, WARNING, WARNING**

By Earl Raguse

I have gotten notice from the Southern California Gas Company. It seems that Proposition 65 recently voted in by our knowledgeable public, requires that they notify us of the cancerous dangers lurking in some their products and facilities. They in fact, use such noxious substances as paint, welding rods and gasoline. As a matter of fact, in some localities, there is danger of encountering second hand tobacco smoke, and a gas leak may release detectable quantities of benzene. We are warned to avoid these things by leaving the area immediately.

Now all this brings to mind how negligent we have been at UGOC. We have yet not published a warning relative to the dangers that might be incurred from reading the ROM. There is some vague possibility of carbon vapors emanating from the printing, and God knows what is

in the paper. Having shredded ROM cereal for breakfast for more than 200 days out of the year is seriously illadvised, according to our editor.

Those of us who must work with the ROM in the process of getting it to you, have been well trained for our own safety, I myself wear a gas mask, rubber gloves, and a full pressure suit when I sort the ROMs for mailing, and print the labels for the exchange groups. I have no idea as to the precautions taken by Stan Corbin, but I know he tries not to touch them with his bare hands. I am not sure what awful chemical is used in the stickum used on the mailing labels. I am certain he doesn't lick the stamps. What's more, the ROM has been handled by POST OFFICE machinery before you get it.

This Editor therefore deposes that you have been adequately warned, and will not honor any law suits for wrongful death, attributed to reading the ROM. You are now on your OWN!

**PROGRAMMER'S DILEMMA**

by Don Lester, Vancouver, BC

(Taken from the NOCCC Orange Bytes newsletter, Your Editor thought this was worth repeating, after suitable modifications, of course.)

I sit before my 4A  
The screen is cold and black.  
I push the keys I think will work  
But nothing's coming back.

I know its not the RAM or ROM  
Since they were both just tested.  
Maybe it's hung up  
In some deep loop I'd nested?

The floppy drives sit silently  
Their little lights are out.  
I search the screen for any clue  
To what it's all about.

Could it be a vicious virus  
Deep down in the root?  
All else fails, I push the button  
To go for a reboot.

But nothing works!! Is there no cure?  
I must seek out this bug.  
That's when I look down and see  
That someone's pulled the plug!



SAILBOAT



RACER



JET

EXBASIC MISCELLANY #4  
By Earl Raguse

ON ERROR

Last month I talked about ON ERROR, but did not tell you how to use it, or show you the program I wrote to demonstrate its use. Following is that program. You could make use of the error handling (lines 230 to 300) in your own programs. You might of course wish to change the error messages a little to suit yourself. I have seriously considered making a subprogram out of it for use in my programs where I access files. The overall program actually is a very good little file reader, and you might want to consider using it for that. I would change the name, of course.

```

100 ! SAVE DSK1.ERRORTEST
105 ! By Earl Raguse 12/90
110 ON ERROR 230
120 DISPLAY AT(12,1)ERASE AL
L:"Input a file name to read
": " DSK"
130 DISPLAY AT(14,10)SIZE(-1
21):FIL$
140 ACCEPT AT(14,10)SIZE(-12
):FIL$
150 OPEN #1:"DSK"FIL$,INPUT

160 IF EOF(1)THEN 200
170 INPUT #1:A$ :: DISPLAY A
$
180 CALL KEY(3,K,S):: IF S<>
0 THEN 180
190 GOTO 160
200 CLOSE #1::DISPLAY AT(22,
4):" The end of the file"
210 CALL PAK :: END
220 ! error handling
230 ERRCNT=ERRCNT+1
240 ON ERRCNT GOSUB 260,270,
280,290
250 CALL PAK :: ON ERROR 230
:: RETURN 120
260 DISPLAY AT(12,1)ERASE AL
L:"Please check your spellin
g I can find no such fi
le on drive ";VAL(SEG$(FIL$
,1,1)):: RETURN
270 DISPLAY AT(12,1)ERASE AL
L:" Please check everything
I can find no such
file" :: RETURN
280 DISPLAY AT(12,1)ERASE AL
L:" Please try harder, I'm I

```

```

out I can not find your
file" :: RETURN
290 DISPLAY AT(12,1)ERASE AL
L:"You must be a slow learne
r I gave you three chan
ces to clean up your act,
now I'm gonna CRASH!"
300 END
310 !
320 ! SUBPROGRAM AREA
330 !
6100 SUB PAK
6110 DISPLAY AT(24,1)SIZE(30
):"Press Any Key to Proceed"
6120 CALL KEY(0,K,S):: IF S<
1 THEN 6110
6130 SUBEND

```

The above program illustrates the use of ON ERROR. I begin with ON ERROR 230. The default for ON ERROR is to stop, but if followed by a line number it will go to that line for further instructions. This line and subsequent related lines should be considered a sub-routine, it should end with RETURN, and if so, it will return to the line causing the error. This is fine provided you were able to correct the error in the sub-routine, but as in the above program, I could not, and did not want to, so on line 250, I told it to RETURN 120, were the proper information could be entered. Once an ON ERROR has been executed, it subsequently goes to default action, STOP. If you want something else, you must tell it so, as I did in line 250, where I put ON ERROR 230. Now this could result in an endless loop, so I put in an ERROR COUNTER, and when ERRCNT exceeds 3 the program crashes as hopeless.

There are other options for the RETURN statement, if followed by NEXT, it will act like a normal sub-routine, and return to the line after the caller, ie. the error causer. You can however follow RETURN with a line number, eg. RETURN 120, and I could have done that for a simple one shot error fix, but I wanted to provide something a little more exotic, so I used the loop and the counting device. You may do anything your imagination can think up.

By the way, if you decide to make a file

reader out of the above program, I would change line 210 to read

```
210 CALL AGAIN :: GOTO 110.
```

You would then, of course, have to MERGE in my subprogram AGAIN, that was published a couple of months ago. That way you could read several files without re-running the program.

Until next time, may all your ERRORS be small ones.

WHO OWNS THE ZEBRA  
Earl Raguse &  
Newt Armstrong

The following puzzle was put on the UGOC bulletin board by Newt. He didn't provide the answer, can you figure it out. Its simply a matter of logic, a subject computer owner's should be good at, are you? The answer will appear next month. If you can't wait call one of us.

The Problem :

There are 5 men, natives of different countries, living in a row of houses each painted a unique color. They drink different beverages, own different types of pets, and drive different makes of cars.

Use the following information to determine who drinks WATER and who owns the ZEBRA. Answer to be supplied later.

- ENGLISHMAN has a RED house.
- SPANIARD owns a DOG.
- COFFEE is the GREEN house drink.
- UKRANIAN drinks only TEA.
- GREEN house is next right to IVORY house.
- MS driver owns SNAILS.
- HONDA driver lives in a YELLOW house.
- MILK is the beverage in MIDDLE house.
- NORWEGIAN lives in 1st house on the left.
- VW driver lives next to pet FOX owner.
- HONDA parks at house next to HORSE owner's house.
- TOYOTA owner drinks ORANGE JUICE.
- JAPANESE drives a DATSUN.
- NORWEGIAN lives next to BLUE house.

FIBONACCI NUMBERS  
By Earl Raguse

Fibonacci Numbers, were invented by an Italian mathematician, Leonardo Fibonacci, circa (1180-1250). They have been used to solve some pretty exotic scientific problems, but I personally have never found anything of a practical nature I could do with them. That doesn't cool my interest in them even a little bit. They make a number series in which every number is the sum of the two previous numbers. The first two are an exception of course, the first is one, and the one before that was, of course, zero, thus the second is also one. The following program will generate a Fibonacci series of any length you desire.

I once tried to become famous by inventing Raguse Numbers. Each number was the sum of the three previous numbers. Nobody ever found a use for them, so I didn't get famous.

Newt Armstrong used Fibonacci Numbers to solve a puzzle challenge that he had put in the Jan 88 ROM. Either Fibonacci numbers were just made for solving Newt's puzzle, or just, just possibly, Newt designed the puzzle just to show off Fibonacci Numbers. What do you think? Anyway, try them.

```
100 ! SAVE DSK1.FIBONACCI
110 DISPLAY AT(4,6)ERASE ALL
:"FIBONACCI NUMBERS"
115 DISPLAY AT(6,1):"A Fibon
acci number is equal to the
sum of its two predecessors."
120 DISPLAY AT(18,1):"
PRESS SPACE BAR TO
PAUSE OR CONTINUE,
  Q TO QUIT"
130 INPUT "  Enter a LIMIT
? ":LIMIT
135 CALL CLEAR :: PRINT "
COUNT": " FIBONACCI": "
VALUE": :
140 A=0 :: B=1 :: C=1 :: PRI
NT TAB(6);1;TAB(14);C
150 FOR X=2 TO LIMIT
```

```
170 C=A+B :: IF C>LIMIT THEN
270
180 A=B
190 B=C
200 PRINT TAB(6);X;TAB(14);C
210 CALL KEY(3,K,S):: IF S<1
THEN 260
230 IF K=ASC("Q")THEN 320 EL
SE GOSUB 280
260 NEXT X
270 PRINT : : : : CALL AGAI
N :: GOTO 110
280 CALL KEY(3,K,S):: IF S<1
THEN 280
290 IF K<>32 THEN 280 :: RET
URN
320 RUN "DSK1.DIR"
330 !
430 ! SUBPROGRAM AREA
440 !
5500 SUB AGAIN :: DISPLAY AT
(24,1):"Again? Press A, Else
Any Key"
5510 CALL KEY(3,K,S):: IF S<
1 THEN 5510 ELSE IF K>ASC("
A")THEN RUN "DSK1.DIR"
5520 SUBEND
```

If you don't have a program named DIR, then replace RUN "DSK1.DIR" with STOP.

Of some interest, to some of you, may be the way that I have executed the PAUSE I promised in line 120. Notice that line 210 is

```
210 CALL KEY(3,K,S)::IF S<1 THEN 260
```

Meaning if no key press, go to line

```
260 NEXT X
```

But if there had been a key pressed on line 120, we would examine it on line 230 to see if it was a "Q", in which case we should go to 320 and return to DIR. But if the key was not "Q" then we should GOSUB 280, where another CALL KEY awaits. Here if any key is pressed, which is NOT Space (32), it will be ignored by returning to 280. But if Space (32) is pressed we RETURN to 260 NEXT X. Which is first after the calling line 230. The sequence then resumes until the next PAUSE or LIMIT is reached.



COMPUTER MUSIC  
By Earl Raguse

The following was written by Australian Robert Davy, one of the TISMUG Younger Set. He was 14 when it was done. The TISMUG is a User Group with whom we exchange newsletters. I like it, so of course, I diddled with it a little. I did not change the basic premise however. It makes chords with the previous two notes. (Remember, the Fibonacci numbers?). I have seen this idea before in Jim Peterson's Wild Flower. It is not musically correct, as far as chords go, and it does not sound right used on the wrong music. I know I have tried it.

```
100 ! SAVE DSK1.CHURCHBELL
110 DISPLAY AT(10,1)ERASE AL
L:" CHURCH BELLS
by Robert Dav
y (aged 14)"
120 DISPLAY AT(14,1):" TI.
S.H.U.E. Younger Set"
130 B,C=262 :: Z=1 :: RESTOR
E
140 READ A :: IF A=0 THEN RE
STORE 180 :: A=262 :: Z=Z+1
160 FOR J=2 TO 7 STEP 1.3 ::
CALL SOUND(-999,A,J,B,11,C,
15):: NEXT J :: C=B :: B
=A :: IF Z>2 THEN 200 ELSE 6
OTO 140
165 CALL AGAIN :: GOTO 110
170 DATA 262
180 DATA 523,494,440,392,349
,330,294,262,523,494,440,392
,349,330,294,262
190 DATA 523,440,349,294,494
,392,330,262,523,440,349,294
,494,392,330,262,0
200 CALL SOUND(1,110,30):: R
UN "DSK1.DIR"
5500 SUB AGAIN :: DISPLAY AT
(24,1):"Again? Press A, Else
Any Key"
5510 CALL KEY(3,K,S):: IF S<
1 THEN 5510 ELSE IF K>ASC("
A")THEN RUN "DSK1.DIR"
5520 SUBEND
```

If you do not have a program named DIR just replace RUN "DSK1.DIR" with STOP.