OUR 4/A UNIVERSITY

by Jack Sughrue
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#1 Corpus

Historical Perspective

The corpus calosum is that wonderful band of billions of nerve fibers connecting the hemispheres of the brain. Forty years ago that band was surgically severed to contain *grand mal* seizures in epileptic patients.

That was the beginning of a profound revolution in education that is quietly (though, at times, quite noisily) continuing through today.

Through the massive research done since that fateful slice, we, as a society, have learned more in the past quarter century about <u>how</u> people learn than we knew about the subject in all the tens of centuries humans have considered the process.

This educational revolution was not without its prophets. John Dewey was one. Today there are many great teachers out there operating under the umbrellas of "Process Learning," "Open Methodologies," "Whole-brain Teaching," "Open Classrooms," "Science/Logic Approach," and piles of other names, including "Whole Language." The last is probably having the most profound influence on the real education in the English-speaking World as any philosophical approach since Horace Mann "Manndated" public education in America so long ago. (So long ago that we take free, public education for all as a given, as an inalienable right.)

But there is a problem.

(Isn't there always?)

When the Germans first devised an efficient way of organizing a mass education in the 19th Century, they decided to make a step-by-step system of completing a given body of work at a given chronological year of a child's life. Thus, 6-year-olds go through a first grade (and an artificially-created, adult-generated curriculum). After completing this predetermined set of tasks, the child turns seven and, if lucky, moves into the second grade where another set of artificial goals awaits HIM (no girls, of course).

And so on.

The fact that 7-year-olds are not developmentally on the exact step at any time (any more than all the 47-year-olds are) made no difference to the people operating this 19th Century system. In order to protect the system, an achievement hierarchy was developed, which has come down to us, unfortunately, even to today in too many schools. It is a system that never worked because it created an invisible - though profound - class system. The system created a society of elitists, of average Dicks and Janes, of losers. The basal reader system (unfortunately still in place in most American schools) requires that the classroom be divided into three groups: the good readers, the average readers, the poor readers (sometimes called Bluebirds, Robins, and Snowy Egrets - or whatever). But you know and I know that those groups, begun in kindergarten and carried all through elementary school, created what are perceived as the smart snobs, the struggling middle class, and the dumb (and bad) kids. By the time official tracking takes place in junior

high (middle school) the system is firmly in place. You'll never guess which group has the greatest number of dropouts or which group has the greatest number of kids who go on to advanced degrees (followed by the best jobs). These determinations for the most part are made in the primary grades in elementary school.

The same 19th-Century system also created a hierarchy of adults. Prior to the institutionalization of education the teacher was the most important adult in the learning process. After the system overtook the world, administrators became the most important part of the system. This is usually followed by the operational staff. (Go into ANY school and see if that institution operates around the things that secretaries and custodians require before all else or whether the teachers get top priority. Surprise!)

In this topsy-turvy setup, highly-paid administrators make the decisions. These decisions (from administrators operating in an entirely separate building from a school, believe it or not) are then handed down to other adminstrators who have offices and secretaries. The decisions are then handed down to administrators who are in schools (principals, which means, by the way "first or highest in rank and importance"). In secondary schools these decisions are usually then handed down to department heads. Then - possibly - the teachers are told. These are the same teachers who adminstrators love to hold "accountable," even though they have been excluded from the decision making. Doesn't this "accountability without authority" have a bit of the ring of "taxation without representation" about it?

Generally speaking, administrators - who have the most opportunity and time to learn about all the masses of reseach on how children learn - know the least. They are divorced from the youngsters and from the realities of day-to-day education. They don't realize, for example, that the clientele has changed. That the students today are not made the same way, intellectually and emotionally and socially, that youngsters 25 years ago were. That the horrors of nuclear war, AIDS, street violence, fanatic consumerism, drugs, and so on were not part of our growing up, of our everyday consciousness and reality. That when I was growing up the attention span of youngsters in ELEMENTARY SCHOOL was estimated to be a little over an hour; that seven years ago for students in K-12 it was 22 minutes; that last year for that same group it was 10.8 minutes!

And education is a big - a humongous! - business. Publishers determine the curriculum in America and sell their goods to administrators who foist these materials upon the trained classroom professionals. This is a multi-billion dollar business and one that stomps out any attempt at teacher input for better ways of doing things in the classroom. Such changes may cause these influential profiteers to lose money; influential bureaucrats to lose power.

Millions of Americans sense (even if they don't have statistics at hand) that something is drastically wrong with schools that still use 19th-Century methods and materials to teach 21st-Century life skills and that still put profits and political power (inside and outside the schools) ahead of the education of our children. These parents and other friends of pulic education are afraid for America, for the Earth. For all our children.

Some parents (former Bluebirds) have the lucky financial fortune to put their children into expensive private schools. Others have sought to find some solace and protection from the outside world by placing their youngsters in religious schools where they hope their own values will be inculcated. Others, who have the trained academic and intellectual background (like Barry Traver) teach their children at

home. The vast majority of us parents are, however, just working class stiffs who want and expect public education to do its job by our kids.

But, wait a minute!
Aren't we the same society that put a man on the Moon just because Jack Kennedy set us that national goal? Didn't we (not England, not Chile, not Russia, not China, not Iraq) send those Voyager spacecraft out into the wilderness of our Solar System? Aren't we the country with the most Nobel winners?

But those achievements all stemmed from a society that prized education. Weren't these and most of the other masterful achievements of our nation developed during a high level of caring for our youngsters (our future), and of developing a liberal climate of risk-taking and experimentation?

What has happened since Nixon's Presidency to change all this? In spite of the lip service given to education by our recent Presidents, the State of the Union, educationally, has regressed catastrophically following the Kennedy/Johnson Era. And, because federal and state programs to assist and enhance the education of our nation's greatest resource - it's children - has virtually dried up and property taxes are the primary source of funding education, teacher bashing has become a national pastime. Blaming the teachers (the lower paid members of the staff who are not allowed to make important educational decisions nor even to give input in most cases) is like blaming the production line worker for the stupid concepts American car manufacturers have been promulgating. As a matter of fact, it is an interesting solution on the part of these rich conservatives to save American business (and, thus, America) by laying off the workers, as if they in some way were to blame for the decision-makers' gross and blatant stupidities.

That, of course, is another story.

There is a revolution happening in American education, and it will prove to be the saving of our nation. This revolution has many names and takes many forms, but it has a commonality: holism. It's an idea whose time is long overdue, and your TI has its place in this scheme of things. We'll begin to look at those next time in TI-101.

~~~~~ TI-101 ~~~~~

OUR 4/A UNIVERSITY

by Jack Sughrue
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#2 Holism

Happy New Century

Last time, Class, in our TI-101 classroom we introduced the historical perspective of public education in a few strong words. We stated that some of the wrongs with our schools today is the profiteering by the big book industry who would like all our children to be into some kind of large-scale, lock-stepping curriculum as devised by them. [Close to 100% of all the schools in America have curriculums established by publishers and screwed into place by administrative bureaucrats. They are not created by the teachers, the trained professionals who work directly with the children. Once in a while - such as the school in which I presently teach 3rd graders - a school is blessed with an intelligent, child-oriented principal who is not afraid to empower her teachers. But this scenario is truly rare in our country.]

Which brings me back to THE REVOLUTION in education I discussed during our last class. This is the revolution of holism in education. It is an international grass roots approach to learning. Whole Language is the most prominent movement in the revolution. It is a philosophy that

asks how children ... and then ... provide ... ose opportunities for the child. It is, in short, a research-based philosophy and an intellectual attitude and a creative style. But what is it, specifically.

Well, let's look at product results first, although Whole Language Educators will be the first to say that process rather than product is the goal of W.L.:

In the standard achievement tests scores given world-wide the U.S. ranks 47th. On those same tests New Zealand is 1st. New Zealand has close to 100% of its teachers, K-12, using W.L. New Zealand has the highest rate of literacy of any country in the English-speaking world.

Now back to how W.L. works and what it is. In the U.S. we have had a long history of process methodology. Unfortunately, it has never been a part of mainstream education. Like jazz, as musically intricate as any form of music on the planet, has never become the mainstream of American culture. But there were many educators who understood how children think and how children learn. These people have taught and have written books and have done research. But, except for the unusual teacher or an extremely rare school staff, few people had access to these ideas and materials and methodologies. Such things as the Teacher-Writer Collaborative in New York, the Bay Area Project in California, and the Framingham Writing Project in Massachusetts. These were a few of the isolated programs and projects and groups that sought to integrate the curriculum by starting a Square One and helping the students learn from their own strengths in a positive "unending" environment which tied various aspects of learning into complex, relevant activities. Thinking on a large scale, understanding analogies, making connections, discovering solutions.

To explain another way, Class:

Most of us grew up learning little isolated skills. We learned to Captitalize on the 9th week of school, let's say, in the 8th Grade.

Following that week, during which we'd be forced to learn the 60-odd capitalization rules for Friday's test, we'd leap into a couple days of hyphens and dashes, before going on to colons and semi-colons, and so on.

Isolated. Irrelevant. Boring. And not a good learning environment.

A publisher's dream and an administrator's idea of Heaven. Because the kids can be tested on each of these isolated pieces, numbers can be attached to their names. These numbers can then be sorted into descending order and grades issued based on this garbage.

This has nothing to do with learning, with life-long skills, with internalizing and ownership. This has to do with outside forces trying to jam 19th Century methods down the throats of the people who will be running the 21st Century.

Bad stuff.

Take almost any English book you can get your hands on, and you will not find any writing activities (or few except in the most recent books and then as a way to thwart the movement away from texts). The books tell, tell, tell, tell how YOU are supposed to know this rule and that. The books test, test, test. They introduce the English materials in the most inane ways. For the most part, traditional English text books are sappy, to say the least, and anti-education to be really honest. And, except in a splashy, surface way haven't really changed since McGuffey's Readers of a century ago.

At the time of the Industrial Revolution the sum of human knowledge doubled about every 150 years; at the turn of this century it doubled about every 75 years; after World War II every 25 years; in 1990 every 9 months!

We still need to teach our kids skills, but we need to teach them DIFFERENT skills, better skills, more relevant skills, as "coverage" is impossible. [By the time a science book is researched and written and edited and printed and sold and distributed and finally used in a

classroom it is already quite a few years out of date. And this is not just for info about our Solar System, for example, since the Voyager trips; it is about dinosaurs, which we know more about today than we did last year.   Information progresses at a quantum rate, and this is true in every area of our real as well as academic lives.] Coverage is impossible, Class. Remember that. It's going to be on your next test.

   We need to teach our kids HOW to think. Informational regurgation is no longer relevant as we swing into the 21st Century. We need to teach our kids HOW to think, so they can be prepared for the future. And no matter how much we may long for the good ol' simple days of yore, they just ain't a'comin' back.   We are - for better or worse - in the Electronic Age. And our kids, if they are going to compete with the rest of the world or if they are just simply going to keep America great, have got to become thinkers. They've got to become thinkers who can use the tools of the future NOW.

   Einstein (Albert) was asked for his phone number by a reporter. He looked it up in the phone book, astounding the reporter. Einstein explained that it would be foolish to clutter up his brain with anything that could be looked up.

   If Einstein felt he should not be cluttering up his brain with useless information, maybe we could all take heed.

   Let's give our kids and everyone else's kids a headstart for the next century by supporting our overworked teachers (instead of bashing them) and joining forces with them to provide a new environment in schools and

in our homes. Let's advocate FOR our kids and their teachers.   On 60-MINUTES, recently, Andy Rooney said the real problem with education today is not the teachers and not the schools but that "there are too many dumb kids," and, worse, too many dumb parents who don't prize education, who don't value learning (thus, too many dumb kids).   I believe, truly, that we can get rid of this dumbness (which Steve Allen calls "DUMBTH" in a wonderful book by that name about the state of American thinking) by turning off the electronic babysitters (TVs and Nintendos) and get the kids into electronic tutors (computers) and maybe even (gasp!) books!

   And here we are at the point of these articles: our TIs and what they can do to reverse this terrible dumbing trend in our country.

   We'll take this up in our next class by introducing you to some of our brave TI-World educational experts and what they have offered and how we can use their gifts.

   Your homework is to dust off all your your educational cartridges (which includes TI-WRITER, of course, as well as TERMINAL EMULATOR and MINI-MEMORY (think about it), as well as DRAGON MIX, READING RALLY, SCHOLASTIC SPELLING, and BEGINNING GRAMMAR). You don't have to pass in any papers next session, but you must be prepared to present a 10-minute talk on at least two of your selected cartridges, being prepared to defend its educational relevance to the child of the future.

   Be early for TI-101 next time and get a good seat up front. Adios.

LETTER WRITING
by Allan Cox

Since I write a lot of letters using my TI-WRITER, written by Funnelweb Farm, and because I like my printing to be dark, I have modified this program, adding the following:

```
201 OPEN #1:"PIO"
202 PRINT #1:CHR$(27)&CHR$(71)
203 CLOSE #1
```

This produces double-strike printing from the parallel port and line 201 can be modified for serial printing. Also, when this program is booted up it will not finish loading until the printer is ON, which waves a flag at you to put the printer on line. When it is on line the program set the printing commands without having to set the commands from another disk.

Also, on the file disk in use, I have a program named "FORM" which I call when the TI-WRITER is booted up. On this file I have set my standard margins and tabs that I use all of the time.

Since I am lazy, and always seek to find the easy way of doing things, I use the above combination of programming to begin a letter. Since I am also older and sometimes forgetful, it keeps me from having to go back and correct something I might have missed. When I save the file I give it a new name.

I also use my TI-WRITER disk to program other printing projects. On some of my programs I also enter the printing commands into the program to avoid using another disk to set the printer. Instead of the double-strike command, you may want to use the emphasized command (69), or whatever you may desire.

Speech (Part 1)
HARNESSING THE POWER OF SPEECH
by Craig Dunn

(reprinted from the HOCUS 99 newsletter Nov 1991, via the Central Texas 99/4A Users Group)

The TI Speech Synthesizer is an amazing little device. It was a breakthrough for the lower end (priced) computers. Unfortunately, many 99/4A owners still don't know how to access speech along with all its little features. Sure, a lot of games use speech to add interest and excitement, but the applications of speech goes far beyond games.

One of the major features of the speech synthesizer is its ability to let you add speech to your programs. There are several ways to do this, including TI's Terminal Emulator II, XBasic, and through the use of assembly language routines. XBasic provides a rather limited vocabulary (unless you are using one of several recent utilities that give you unlimited speech in XB, but that's another story). TE2 allows for unlimited speech directly from BASIC. This built-in *text-to-speech capability of TE2 will* be the focus of this article.

First, plug in the TE2 command module, turn on the computer, and select TI Basic. Now type and run the following program:

```
100 OPEN #1: "SPEECH",OUTPUT
110 INPUT A$
120 PRINT #1:A$
130 GOTO 110
```

If you get an error, make sure you have the speech synthesizer connected properly to the side port. Now we have a very simple text-to-speech editor. Line 100 contains the OPEN command needed to access TE2 speech capabilities. Line 120 sends the text strings that you type in to the text-to-speech interpreter, which then sends the info to the synthesizer. Experiment with this for awhile by typing in phrases, followed by an <ENTER>.

In the above example, you were in the default speech mode. This means that no commands have been sent to alter the voice. We can change the voice easily using the "//" command. The proper format is:

// PITCH SLOPE

ex. //34 118

The pitch is a number between 0 and 63. A zero causes the speech synthesizer to whisper phrases. Pitches from 1 to 63 *range from the highest pitched (1) to* the lowest pitched (63). For the best sound, figure the SLOPE using the following formula:

SLOPE = 32 X (PITCH/10)

Round this result to the nearest whole number. Now, when you enter the command along with these two numbers, it will appear that nothing has happened. But type in a simple phrase and press <ENTER>. You'll notice the change in voice. For example, at the prompt in our simple little speech editor, type "//55 176" and press <ENTER>. (Be sure to include a (space) between the numbers). Nothing happened, right? Well, now type something in and press <ENTER>. See how the voice changed? It becomes deeper. Now try "//0 0" and press <ENTER>. Again, type in a short phrase. Another voice tone! Experiment with these and other PITCH/SLOPE combinations to get the feel of working with these.

Before we wrap up this tutorial, we'll take a look at the INFLECTION symbols. The symbols are " " (carat), "_" (underline), and ">" (greater than). The " ", when placed in front of a word, indicates a primary stress point to the text-to-speech interpreter. Only ONE " " may be per string. The "_" is used to indicate a secondary stress point and may be used without limit throughout the string. The ">" will shift the stress points within the word. Experiment with all of these to make words sound better and more human like. Remember, all inflection symbols must precede the word they are to affect.

One final note, remember that the text-to-speech interpreter is not perfect. Sometimes you might have to alter a word's spelling drastically to make it sound right.

No. 68

Tigercub Software
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‡‡‡‡‡‡‡‡‡

My three Nuts & Bolts disks, each containing 100 or more subprograms, have been reduced to $5.00 each. I am out of printed documentation so it will be supplied on disk.

My TI-PD library now has almost 600 disks of fairware (by author's permission only) and public domain, all arranged by category and as full as possible, provided with loaders by full program name rather than filename, Basic programs converted to XBasic, etc. The price is just $1.50 per disk(!), post paid if at least eight are ordered. TI-PD catalog #5 and the latest supplement is available for $1 which is deductible from the first order.

When I have finished reading Barry Traver's column in Computer Monthly, I like to take a look at whatever Dr. Michael Ecker is up to in his "Recreational Computing" column, although much of his math is beyond me and I can't always translate his GW Basic into TI Basic.

In the February issue, he had a routine to play Fibonacci modular music. This is the TI version; it is not very musical, but the notes are in the chromatic scale.

```
100 A=0 :: B=1 :: M=51
110 C=A+B :: C=C-M*INT(C/M):
: CALL SOUND(-100,110*2^(C/1
2),5):: A=B :: B=C :: GOTO 1
10
```

Dr. Ecker also had a challenge to swap two numbers without using a third vari-

which TI Basic doesn't have anyway. The practical way, of course, is to use the 3rd variable, T=A :: A=B :: B=T, but just for the fun of it, if we are dealing with one-digit numbers -

```
100 A=1 :: B=2 :: A=A+B/10 :
: B=INT(A):: A=(A-INT(A))*10
:: PRINT A;B
```

But suppose we are dealing with numbers of any length - we can still do it with a one-liner, or a two-liner if we want to input the numbers from the keyboard -

```
100 INPUT A :: INPUT B
110 B=B/10^(LEN(STR$(B)))::
A=A+B :: B=INT(A):: A=A-INT(
A):: A=A*10^(LEN(STR$(A))-1)
:: PRINT A;B :: GOTO 110
```

So you got smart and tried a negative number or a decimal? OK, how about this -

```
100 INPUT A$ :: INPUT B$
110 A$=A$&" "&B$ :: B$=SEG$(
A$,1,POS(A$," ",1)-1):: A$=S
EG$(A$,POS(A$," ",1)+1,255):
: PRINT A$;" ";B$ :: GOTO 11
0
```

And another challenge was to alternately assign X the value of A and B, without using IF...THEN or any outside help. That seems to require a two-liner -

```
100 A,X=77 :: B=132
110 X=ABS(X=A)*B+ABS(X=B)*A
:: PRINT X :: GOTO 110
```

The only honest way to compute interest on a loan is on the unpaid balance, although the banks and finance companies have devised more complicated and profitable ways. If you want to make an honest loan, here is how to do it -

```
100 DISPLAY AT(3,1)ERASE ALL
:"SIMPLE INTEREST CALCULATOR
":"":"For interest to be cal
```

d balance."
```
110 DISPLAY AT(9,1):"Printer
? PIO" :: ACCEPT AT(9,10)SIZ
E(-20):P$
120 DISPLAY AT(11,1):"Amount
loaned? $" :: ACCEPT AT(11,
17)VALIDATE(NUMERIC):A
130 DISPLAY AT(13,1):"Intere
st rate?     %" :: ACCEPT AT
(13,16)SIZE(4)VALIDATE(NUMER
IC):X
140 IF X<1 THEN DISPLAY AT(1
2,1):"Enter as a percentage"
:: GOTO 130
150 DISPLAY AT(15,1):"Monthl
y payments of $" :: ACCEPT A
T(15,22)VALIDATE(NUMERIC):P
160 DISPLAY AT(17,1):"Beginn
ing in month (1-12)  of yea
r"
170 ACCEPT AT(17,27)VALIDATE
(DIGIT):M :: ACCEPT AT(18,9)
VALIDATE(DIGIT):Y
180 DATA JAN,FEB,MAR,APR,MAY
,JUN,JUL,AUG,SEP,OCT,NOV,DEC
190 X=X/100 :: DIM M$(12)::
FOR J=1 TO 12 :: READ M$(J):
: NEXT J
200 OPEN #1:P$,VARIABLE 254
:: PRINT #1:CHR$(27)&"E"&CHR
$(27)&"G"&CHR$(27)&"N"&CHR$(
6)&CHR$(27)&"M";
210 PRINT #1:"$";STR$(A);" F
INANCED AT ";STR$(X*100);"%
WITH MONTHLY PAYMENTS OF $";
STR$(P);" BEGINNING ";M$(M);
Y;""
220 I=A*X/12 :: TI=TI+I :: A
=A+I-P
230 PRINT #1:M$(M);Y;" PAYME
NT $";STR$(P);" OF ";
240 PRINT #1,USING "$###.##"
:I;:: PRINT #1:" INTEREST AN
D ";
250 PRINT #1,USING "$###.##
":P-I;:: PRINT #1:" PRINCIPA
L - BALANCE OF ";
260 PRINT #1,USING "$####.##
":A
270 M=M+1 :: IF M=13 THEN M=
1 :: Y=Y+1
280 IF A>=P THEN 220
290 PRINT #1,USING "FINAL PA
YMENT $###.##":A :: PRINT #1
,USING "TOTAL INTEREST PAYED
$####.##":TI
```

Thanks to Bruce Harrison, here is a neat subprogram to

sort strings into sequence as they are entered -

```
100 CALL CLEAR :: DIM W$(100
)
110 FOR J=1 TO N :: W$(J)=""
:: NEXT J :: INPUT "N=? ":N
120 INPUT I$ :: IF I$="" THE
N 130 ELSE CALL INSORT(W$(),
I$,N):: GOTO 120
130 FOR J=1 TO N :: PRINT W$
(J):: NEXT J :: GOTO 110
30020 SUB INSORT(W$(),I$,N):
: FOR T=1 TO N :: IF I$>W$(T
)THEN 30030 ELSE 30040
30030 NEXT T :: GOTO 30050
30040 FOR J=N TO T STEP -1 :
: W$(J+1)=W$(J):: NEXT J
30050 W$(T)=I$ :: N=N+1 :: S
UBEND
```

In the test routine in lines 100-130, give N the value of 0, input some words and then just press enter.

To start a new array, use FOR J=1 TO N :: W$(J)="" :: NEXT J, then reset N to 0. If you want to sort in reverse sequence, change the > to <. If you need to sort numbers, delete all the $, change the "" in line 120 to 0, and input a 0 when you are when finished inputting.

Someone sent me a program to figure days between dates but it would not count leap dates, so I decided to write one that would.

```
100 DISPLAY AT(2,5)ERASE ALL
:"DAYS BETWEEN DATES":"":"
including leap year days" ::
M$(1)="From" :: M$(2)="To
" :: R=13
110 DATA 31,28,31,30,31,30,3
1,31,30,31,30,31
120 DIM L(12):: FOR J=1 TO 1
2 :: READ L(J):: NEXT J
130 FOR J=1 TO 2 :: DISPLAY
AT(R-1,1):M$(J):"year    m
onth   day " :: ACCEPT AT(
R,6)VALIDATE(DIGIT)SIZE(4):Y
(J)
140 ACCEPT AT(R,17)VALIDATE(
DIGIT)SIZE(2):M(J):: IF M(J)
<1 OR M(J)>12 THEN 140
150 ACCEPT AT(R,24)VALIDATE(
```

```
DIGIT)SIZE(2):D(J):: IF D(J)
(1 OR D(J))31 THEN 150
160 CALL LEAP(Y(J),X):: L(2)
=L(2)-X :: IF D(J)>L(M(J))TH
EN 150
170 L(2)=2B :: R=R+3 :: NEXT
 J :: R=13 :: IF Y(1))Y(2)TH
EN T=Y(1):: Y(1)=Y(2):: Y(2)
=T :: T=M(1):: M(1)=M(2):: M
(2)=T :: T=D(1):: D(1)=D(2):
: D(2)=T
180 IF Y(1)=Y(2)AND M(1)>M(2
)THEN T=M(1):: M(1)=M(2):: M
(2)=T :: T=D(1):: D(1)=D(2):
: D(2)=T
190 L(2)=2B :: IF Y(2))Y(1)T
HEN 220
200 IF M(1)=M(2)THEN B=ABS(D
(2)-D(1)):: GOTO 260
210 CALL LEAP(Y(1),X):: FOR
J=M(1)+1 TO M(2)-1 :: B=B+L(
J)+X#(M(1)=2):: NEXT J :: B=
B+L(M(1))+X#(M(1)=2)-D(1)+D(
2):: GOTO 260
220 CALL LEAP(Y(1),X):: B=L(
M(1))-D(1)+X#(M(1)=2)
230 FOR J=M(1)+1 TO 12 :: B=
B+L(J)+X#(J=2):: NEXT J
240 FOR J=Y(1)+1 TO Y(2)-1 :
: CALL LEAP(J,X):: B=B+365-X
 :: NEXT J
250 FOR J=1 TO M(2)-1 :: CAL
L LEAP(Y(2),X):: B=B+L(J)+X#
(J=2):: NEXT J :: B=B+D(2)
260 DISPLAY AT(20,1):B;"days
 between" :: B=0 :: GOTO 130
270 SUB LEAP(Y,X):: X=(Y/400
=INT(Y/400)):: IF X=-1 THEN
SUBEXIT ELSE X=(Y/4=INT(Y/4)
):: IF X=0 THEN SUBEXIT ELSE
 X=(Y/100<)INT(Y/100))
2B0 SUBEND
```

A leap year is a year that is evenly divisible by 4 unless it is evenly divisible by 100 but not evenly divisible by 400. The subprogram in lines 270-280 will give X a value of -1 if Y is a leap year.

Gene Hitz of Arcade Action Software reports another undocumented feature of TI Extended Basic. The manual says that you can only enter a subprogram by a CALL and only leave it by a SUBEXIT or SUBEND, but the manual is

wrong. You can GOSUB to a subroutine within a subprogram, providing it does not contain a SUBEXIT, and return; and you can GOSUB from within a subprogram to a subroutine in the main program, and return. In this way, you can transfer variables in and out of a subprogram without putting them in a parameter list. See for yourself -

```
100 CALL CLEAR
110 INPUT M$ :: CALL SUB(M$)
 :: PRINT M$ :: GOSUB 140 ::
PRINT "M$ IS";X;"CHARACTERS
LONG" :: GOTO 110
120 M$="SEE WHAT I TOLD YOU?
" :: RETURN
130 SUB SUB(M$):: GOSUB 120
:: GOSUB 140 :: SUBEXIT
140 X=LEN(M$):: RETURN
150 SUBEND
```

If you are among the lonely few who have purchased my TI-PD disks, you will know that most of them load from a menu by full program name, not those abbreviated filenames. Those menus are prepared quickly and easily by my Catwriter program which was published in Tips #47 and in MICROpendium and is available on TI-PD 1105.2.

I was asked if there was a way to dump those full program names to the printer. There is, but it requires a big program - like this -

```
1 OPEN #1:"DSK2.TI-PD/CAT",A
PPEND
2 DISPLAY AT(12,1)ERASE ALL:
"TI-PD# ?" :: ACCEPT AT(12,1
0):N
14 FOR J=1 TO X-1 :: READ X$
 :: PRINT #1:X$;TAB(30);N ::
NEXT J :: CLOSE #1 :: STOP
17 REM
```

Save that on an empty disk by SAVE DSK2.C,MERGE. Put your TI-PD disk in drive 1, boot its LOAD program, break it with FCTN 4 and enter MERGE DSK2.C, then RUN. Put

in the next TI-PD disk and do the same. You will have a D/V80 file of all the programs, followed by their TI-PD disk number. Run the file through Sort Experiment or TI-Sort or whatever, and you can print them out in alphabetical sequence.

If you have only one drive just change that DSK2. to DSK1. and swap disks after breaking the LOAD program.

Of course, this won't work with fairware disks which have the author's own loader or some other disks which do not have my Catwriter load for one reason or another. You'll have to type those into the file.

Another user asked me if there was anyway to key in the ASCII above 127 into TI-Writer's Editor. Many of those ASCII can be entered from the keyboard by using the CTRL and FCTN keys - try this -
```
100 INPUT N$ :: PRINT ASC(N$
):: GOTO 100
```
- but the Editor has been programmed to refuse them because so many of those FCTN and CTRL combinations are used as edit commands.

I had a bright idea - I thought. I wrote a little program to create 127 files, named 128 through 255, each containing just the ASCII of the same number. Now, I thought, when I want to put in such an ASCII I will just LF that file into the next line and CTR 2 to pop it into place. But the Editor refused to even load a file that began with an ASCII above 127!

I'll fool you, I thought. I created those files again, but with an asterisk before the high ASCII. Now they loaded alright - but each ASCII above 127 became an ASCII 128 numbers lower! It is too bad that the Editor does not have a command to

add 127 to an ASCII, just as CTRL U subtracts 64, but if you want those graphics characters in your text you will just have to transliterate them and print through the Formatter.

Folks take it for granted that my Nuts & Bolts disks are only useful for programmers, but they contain many routines so simple to use that anyone can use them to dress up their favorite program. For instance -

```
20083 SUB TITLE(S,T$):: CALL
 SCREEN(S):: L=LEN(T$):: CAL
L MAGNIFY(2)
2008I FOR J=1 TO L :: CALL S
PRITE(#J,ASC(SEG$(T$,J,1)),J
+1-(J+1=S)+(J+1=S+13)+(J)14)
#13,J#(170/L),10+J#(200/L)):
: NEXT J
20085 SUBEND
```

Key that in and save it by SAVE DSK1.TITLE,MERGE . Load your favorite program. Enter MERGE DSK1.TITLE . Make sure your program does not have a line 1 or 2 - if so, RES it. Type in -
```
1 CALL CLEAR :: CALL TITLE(5
,"MY PROGRAM")
2 FOR D=1 TO 1000 :: NEXT D
:: CALL DELSPRITE(ALL)
```

And try it. Instead of "MY PROGRAM", put the name of your program. Instead of 5, put the number of whatever screen color you would like, from 2 to 16 - check your Basic manual. Change 1000 to whatever delay you want - if you have selected a screen color that will leave text legible, use -
```
2 DISPLAY AT(24,1):"PRESS AN
Y KEY" :: DISPLAY AT(24,1):"
press any key" :: CALL KEY(0
,K,S):: IF S=0 THEN 2 ELSE C
ALL DELSPRITE(ALL)
```

You might also need a CALL SCREEN(8) to restore normal screen color.

Oops! Memory full! - Jim P END

MUNCH OFFICERS AND NUMBERS (all in 508 area unless noted)

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MAY MEETING. Lou was the star of this month's meeting; he put new resistors on to mother boards and he did the demo. He demoed the program Archie/PFC which is a program which packs, like archiving, EA 5 files. He did a very interesting demo. Dennis Lavoie won the rafle. There were fourteen members present.

JUNE MEETING. I am not sure what this month's demo will be. If you want Lou to relace a resistor, please call him to confirm that he will be doing this at this month's meeting. Hopefully Lou made it to Lima and he will have a first hand report for us. The copies of the Secret Guide to Computers should be in for this meeting. We will have some extra copies, they sell for $9.45.

RAFFLE. Every month we have a raffle to help defer the rental cost of our meeting hall. A typical raffle will have game and utility programs T-Shirts, books, bumper stickers, blank discs and all sorts of odds and ends for the T.I.

LIBRARY NOTICE. Please return any items borrowed from our library. If you can not come to a meeting or give these items to someone who will be at the meeting.

REPRINTS. Reprints are permitted as long as credit is given to M.U.N.C.H.

ARTICLES. I am always looking for articles for this newsletter, anything which interests you will probably interest other members of the TI community, so please share your ideas and opinions with all of us.

DISK LIBRARY. The disk library will be at the meetings from now on. We have copies of all disks in the library and they are available to members for just $1.50 each for single discs, $2.00 flippies, $3.00 double discs and $4.00 double flippie.
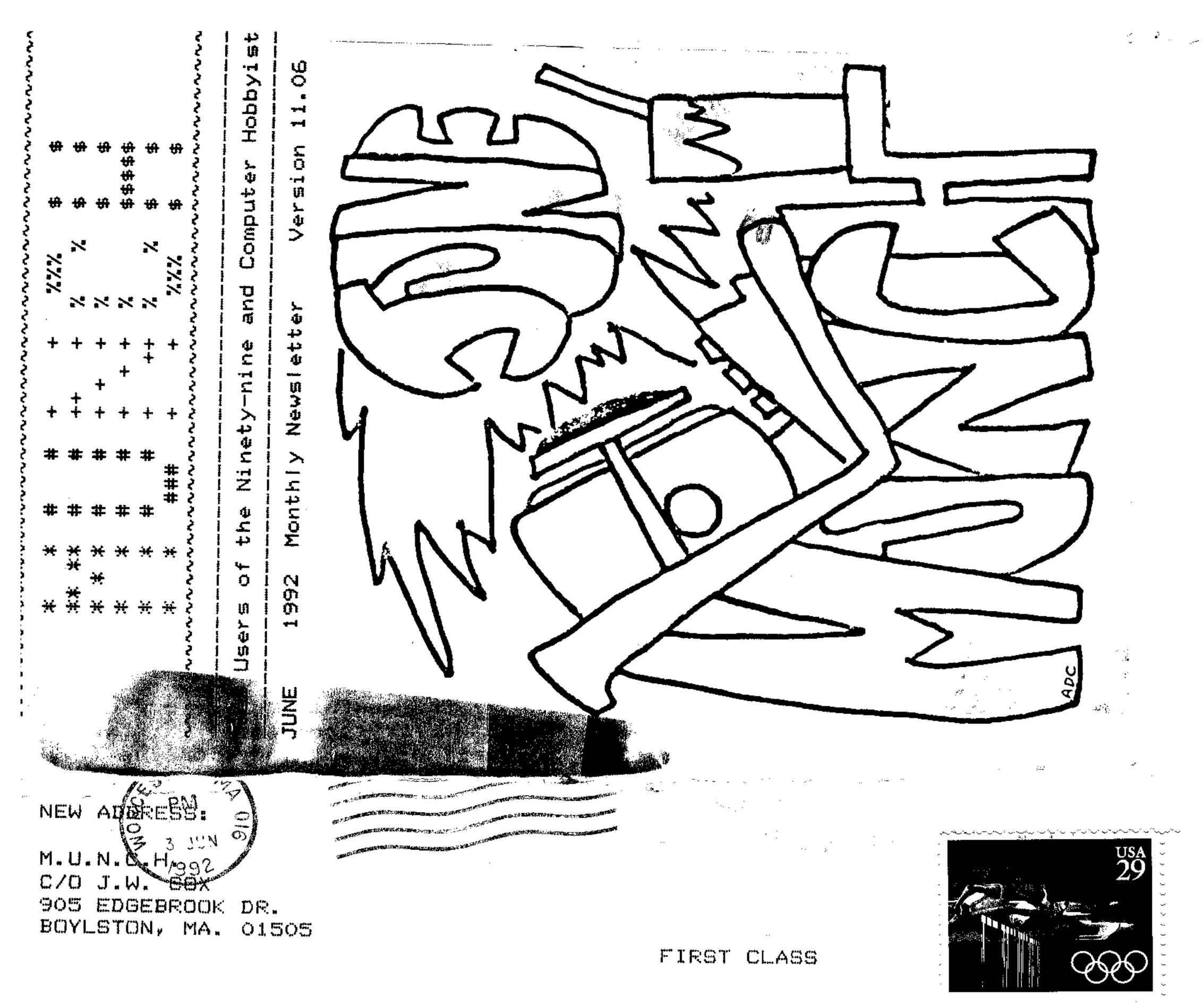
FOR SALE. The group has a TI Count Business Software package available for sale. If interested contact Jim Cox at the above numer or the club address. Bruce Willard has 3 computers, a P-Box with 3 drives and lots of modules for sale, call him for prices. Cecil Pittman Rt.2, ox 223; Picayune, Ms. 39466; 501-708-7286 has a complete T.I. system for sale. See Jim for a complete listing of what is available.

DISK OF THE MONTH. This month's disk is #107, a utilities disk with Diagnostics, Diskmanager 3, TE 1 and TE 2. This is GPL #10, T.I. Utility #4. Disk #106 is the Archie/PFC disk to pack EA 5 files.

THE MUNCH VIDEO is ready, members can purchase it for $5.00, plus $3.00 postage for mail orders.

WELCOME NEW MEMBER. Dennis Lavoie from Millbury, Dennis is looking for either a Cor-Comp or Myarc controller, see him at the meeting.

NEW ADDRESS:

M.U.N.C.H.
C/O J.W. COX
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Next Meeting JUNE   9th.

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