



TI 99/4A

USER GROUP

NEWSLETTER

\$1

December/January, 1991/92

LISTEN

by Justin Dowling

Among the articles inside is a 1990 rallying piece by Barry Traver that I urge you to inspect if you use your TI or Geneve and wonder about what it will be like when the end comes and you must abandon all the hardware and software you have accumulated. (I'll tell you part of Barry's response to THE END: perhaps you needn't abandon your system if you follow his advice.) Barry offers wise advice on many things. Take a look!

I must pass along my joy at using Y.A.P.P. (Yet Another Paint Program by Alexander Hulpke). During the past fall, I have been getting acquainted with TINY TLM, the 80 column upgrade I bought from OPA (another product I recently bought and with which I am also joyous). Y.A.P.P. has been extensively reviewed by Harry Brashear in the December 1990 "MICROpendium". Lutz Winkler made some comments about it in the January 1991 "MICROpendium", and Charles Good reviewed it in "Bits, Bytes & Pixels", which I read in the September 1991 BCS issue "COMPUTERS". It is a draw program, like TI Artist, for an 80 column screen.

Y.A.P.P. is designed to take advantage of the upgrade to 80 columns that the 9958 or 9956 video chip gives us. It has 4 different drawing modes: 256x212 dots with 256 colors, 256x424 with 256 colors, 512x212 with 16 colors, and 512x424 with 16 colors. Each dot can be a different color. I use a trackball as a drawing device instead of a mouse or a joystick.

I haven't reached the bottom of all the functions in Y.A.P.P. but I use it a lot to view GIF pictures. (GIF stands for Graphics Interface File. The format was created by CompuServe; it is a standard format that most computers can view and print if they have viewer and printing programs written for them. The TI has several such programs.) I don't have a Superspace II cartridge, but I use the Mini Memory Module, which works fine to

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give me sufficient memory at the cartridge slot memory address to load a GIF pic (Which is a very large file; you need the extra memory of an advanced video chip and the memory usually reserved to cartridges in the port). Y.A.P.P. loads a GIF pic into the drawing screen where you can draw on it with as many as 255 colors. You can also use T1 Artist fonts to type on the GIF picture. Now, if I can get the GIF picture I've just edited near my Epson printer, I can get a hardcopy in multiple shades of grey.

You see, one of the drawbacks of T1 programs is the lack of print drivers to let you print whatever you have in your computer onto any brand of printer. (There is some standardization in the printer world. So T1 programs, written by people with a printer which is Epson compatible, print on most printers.) Most printers support the Epson printing features except the Panasonic next to the 80 column console I use. Alexander Hulpke furnishes utilities in Y.A.P.P. that let you create a driver for your printer. I tried (using the Panasonic User Manual) but I failed. And Y.A.P.P. doesn't let you print to disk so you can carry the disk to a T1 next to an Epson printer.

Charles Good has written that you can run the print routine (in Y.A.P.P. it's called HARDCOPY) in a T1 that only supports 40 columns. I tried to run HARDCOPY in a 40 column T1 but I failed in that also. I guess I have a problem to solve. Printing these edited GIF pictures is certainly worth it to me.

(Y.A.P.P. is available from Asgard software for \$29.95 + S&H. Asgard Software, PO Box 10306, Rockville, MD 20850. Tel. (703)255-3085.)

Barry's corner

by Barry Traver, 1990

A number of years ago, I wrote the opening article for a book called the ORPHAN SURVIVAL HANDBOOK (a follow-up to Ron Albright's book THE ORPHAN CHRONICLES). In that article, I expressed optimism that our orphan T1-22/4A community could continue to survive and even thrive after being "abandoned" by Texas Instruments, and I believe the events of recent years have shown that my optimism was not misplaced.

Now that it is 1990, it may be appropriate for us to do some new reflecting on our situation. True, we may have more quality hardware and quality software available than at any previous time in history, but there are some signs that our continued survival will not be automatic (for example, some user groups have reported a decline in membership). It is my opinion that we CAN still do it, but that we need as a community to work together to that end in a number of specific ways.

First, I still believe in the survival tactics I set forth in the form of a mnemonic in that article I wrote some years ago: we CAN do it if we take full advantage of

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(1) Cottageing, (2) Archiving, and (3) Networking.

By "Cottageing," I mean that we need to keep in mind that we don't need the support of big companies like Texas Instruments to survive. A huge factory isn't needed for what we require; a "cottage" operation may in fact produce superior results. OPA (Gary Bowser), LGMA (Al Beard), Asgard (Chris Bobbitt), and many other small-scale operations are continuing to offer us new exciting hardware and software. What we need to do as an orphan community is to support these "cottage" industries by purchasing those products. (Needless to say, any user group that tolerates software piracy is following a policy that is not only morally wrong but also in our circumstances clearly self-destructive.)

By "Archiving," I mean something more than the use of an ARCHIVER program to combine disk files! I have in mind the gathering and collecting of useful information and software (again avoiding piracy, however). One good example of the kind of thing I have in view is Jim Peterson's 400-disk TI-PD library that he has been making available by mail to all interested Tiers at the minimal charge of \$1.50 a disk. I would like to see other people involved in similar efforts. (For example, why not have more collections of newsletter articles similar to the original ORPHAN SURVIVAL HANDBOOK or to the collection of hardware articles put together by the Chicago Users Group?)

By "Networking," I mean nothing more complicated than an organized effort to work together and share. Telecommunication networks - like CompuServe, GENIE, and Delphi - are natural places where this can take place, but local TI BESSs can play their part as well. User groups are also important here, and I would like to see more and more working together of user groups (e.g., in sharing software libraries?).

In a way, magazines that support the TI (MICROPENDIUM, REFLECTIONS, VULCAN'S COMPUTER MONTHLY) are themselves important aids to our "Networking," so I hope that readers of this column will subscribe to as many such publications as they can.

Yes, the first thing to remember is that we CAN do it, if we continue to implement the principles of Cottageing, Archiving, and Networking (and do so in increasingly fuller measure).

Second, to be kept in view (particularly by user groups) is that we need to replenish those members that any kind of group loses by attrition. This phenomenon is not unique to our situation. My son is a "paper boy," and he may from time to time lose customers, for example, as a result of their moving away. What he needs to remember is that for every family that moves away, another moves in. Likewise, for a family that may decide to discontinue getting the paper, there may be another family who had not been getting the paper that may decide

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they want to start delivery. A newspaper carrier who does nothing to go after new customers will usually find that he has fewer and fewer customers on his route, but the new customers are there if you go after them! (He's doing very well on his route, by the way.)

Likewise, new members for our user groups do not usually come along without some definite effort on our part, but they are out there if we look for them. Here's an important fact that may provide some encouragement to you: for every person who sells his T1, there is another person who buys one. (Think about it: it's true by definition!) We need to go out there and find new members or (equally useful) let them find us by making sure that we are visible (e.g., by demo tables at shopping malls, ads in local papers, notices posted on supermarket bulletin boards, user group "business cards" placed in computer stores, etc.).

Third (and this also applies especially to user groups, but it has implications as well for network SIGs, BBSS, etc.), we need to make sure that we're remembering to support the novices, beginners, whatever you want to call them, and to support the people who may not be new T1ers but who may have fairly minimal configurations (maybe even cassette storage systems!). Many of us older-T1ers have upgraded our disk controllers, disk drives, whatever, to create what may be fairly sophisticated systems; quite a few have moved to a Myarc 9640 Geneve; in both situations, it may be easy for us to forget those who have not yet "progressed" to the same state of development.

Novices do progress to more sophistication (all of us were novices at one point, remember), and even if that were not true, they are important human beings in themselves. Thus we need to make sure that we're doing two things: (1) helping them where they are, and (2) helping them progress when they're ready. As far as I know, everyone who presently owns a Geneve started out on a T1, which means that Geneve owners who help T1-9640 owners may be helping future Geneve owners (and thus the Geneve community itself to survive). Similarly, many of us who now have expanded disk systems started out with cassette storage (including myself).

In my mind, the important thing, anyway, is having fun with our computers, and I've had that from the beginning days. Here's a challenge to user groups: what is your user group doing at the present time to support cassette users? My own conviction is that such support is important to the survival of the T1 community in general, and that is why I am glad to see individuals like Jack Sughrue and user groups like MANNERS of the Washington, D.C. area giving some attention to making available software on cassette for cassette users. I hope that their example will encourage others in the same direction.

Fourth, I know few things more encouraging or more

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beneficial than the "Faire Phenomenon." I hope that such events will continue to be supported by user groups, vendors, attendees, because I believe that, as much as any other factor, such occasions have kept our machine alive and well. I know, some Faires have reported a recent decline in attendance, but I don't think that such a decline is necessary; the Lima MUG (Multi-User Group) convention disproves it, in fact. For here we have a small user group that has shown its ability to get speakers, vendors, and visitors motivated to attend with enthusiasm. If you can attend such an event (check out the schedule in MICROpendium), I urge you to do so.

Fifth, we need to be creative in discovering new ways to survive. Let me use the Lima Group as an example. They have more than anyone I know developed the "computer/VCR connection." and to very good effect. It's good to see user groups developing libraries - disk, cassette, newsletter - for the benefit of their members, in- and -out-of-area, but TI-oriented videotapes (at a time when, according to one survey, as much as 90% of American homes may contain VCRs) is a new idea whose time has certainly come. I expect that other good ideas will come as we are open to them. Do some brainstorming, and share the results with others!

Yes, I continue to be optimistic about the survival of our TI orphan community, if we put into practice the "five points" of survival strategy I have mentioned here. If we have "the will to survive" and back it up with our actions and activities, I believe that we will indeed survive and thrive!

("Barry's Corner" is reprinted from Asgard's REFLECTIONS, Vol 2, No 4.)

Programming tips

(Here are some more programming tips from Jim Peterson, the Tigercub of Tigercub Software. These are reprinted from the September, 1991 issue of The Spirit of 99, the newsletter of the Central Ohio Ninety Niners.--ed.)

Here are a few tips on the TI-994A for the beginners and experienced programmers alike:

1. If you have the speech synthesizer and the TE-111 cartridge, here is a trick for debugging programs: All you have to do is enter your program, type LIST "SPEECH" and press ENTER. The computer will read your listing back to you as you check it with the original. YOU GOTTA BE FAST.

2. If you want to disable the QUIT key (FCTN +), type in CALL INIT::CALL LOAD(-31806.16) and press ENTER. (You must have Extended BASIC).

3. If you are going to save a program to tape and accidentally type OLD CS1 instead of SAVE CS1, don't panic! Press FCTN E and press ENTER. This will take you out of the tape loop.

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4. You don't have to enter each line number separately in either TI BASIC or Extended BASIC. Before you start, enter NUM. The computer will enter the line numbers for you automatically, starting with 100 and going up by tens. If you wish to start at ten, type NUM 10. If you wish to start at 550, type NUM 550. Starting at line 45 and counting by fives requires this command: NUM 45,5.
5. In both TI BASIC and Extended BASIC you can edit a line by entering the line number and pressing the FCTN X key. After editing that line, you may edit the previous line by pressing FCTN E or press FCTN X to proceed to the next line down.
6. You can list a specific line by typing LIST (line no.); e.g., LIST 140, and a block of lines by typing LIST 1st line-last line) e.g., LIST 20-80. If you wish to list only the first n lines, type LIST -n, e.g., LIST -100. To list all lines above n, type LIST n-, e.g., LIST 2000-.
7. If you need to renumber the lines in a program, either to make it neater or create room for more lines, enter RES followed by the first line number and the interval between the lines (RES means resequence), e.g., RES 10,10 resequences the line numbers of the programming beginning with the tenth line and counts by 10 thereafter.
8. If you have several lines that are the same in Extended BASIC, you can save time by typing in the first line and pressing ENTER. Then press FCTN 6 (REDO); change the line number and make the appropriate changes before pressing ENTER.
9. Have you ever pressed REASE by mistake and lost the whole line? Don't panic and DON'T hit ENTER. Instead, press FCTN 6 and ENTER. Your line will reappear.
10. In Extended BASIC, you can use ! instead of REM to put documentation (a remark) in a program.
11. In Extended BASIC, type RUN CS1 to load the program and run it all in one operation.
12. To stop a listing on the screen in Extended BASIC, just press FCTN 4 (break). To restart, press any key.

From the teacher's desk

by Dave Howell

(Reprinted from the Mid-South Newsletter Tidbits.)

WHAT'S AROUND THE CORNER IN OUR SCHOOLS?

Technology, that's what! Videodisks are beginning to replace books in at least one state. The Texas State textbook adoption system recently approved a science curriculum on videodisk. This decision means that each school district in Texas can choose to spend state funds on science textbooks or this science videodisk program. This event is the first of its kind in this country.

Turning to cable, telephone and satellite communications, educators are waiting to see how the FCC,

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Congress and the courts reshape the regulations. These changes, if drastic, could affect distance learning and data transmission, especially with fiber-optic systems.

If the cable industry wins out over the phone industry, there may be considerably different outcomes in terms of who has the right to do what with information, in education and other fields, and at what cost.

DISTANCE LEARNING - WHAT IS IT?

What happens when two isolated communities - one in Wyoming and the other in Minnesota - need to bring students at local schools into closer contact with the cultural diversity of the rest of America? Plans call for distance-learning technology to help students at Cornelia Elementary School in Edina, Minnesota, get acquainted with students in an Arapaho school in Wyoming. Students on an Arapaho reservation had no contact with any one but other Native Americans. They needed to cope with the diversity of American culture as a whole. Travel by bus was expensive and inconvenient, so communications technology seems to be the school's best bet.

While the technology to link these schools is in place, the biggest chore these educators face is learning how to interact through computers and related distance-learning mechanisms. Actually, these activities will not focus on the technology itself, but on how educators can use the technology to better prepare today's youth for life in the 21st century.

SIMULATIONS FOR DECISION MAKING SKILLS

Computers are good at analyzing situations where complete information is available and only one correct answer is possible. But situations like that seldom exist in real life. However, computer simulations are being used to show how the political process works, through games that appeal to students' competitive nature and their desire to beat the system. Students get a feel for decision-making in a limited-information environment where answers are not always easy to reach, and information can be less than complete.

In criminal - justice simulations, each Player is assigned, at random, a status in life - perhaps wealthy and well connected, or perhaps low income and unable to afford bail or a good lawyer. The game illustrates the different outcomes possible to various players depending on the situations assigned at random to them.

(Dave Howell is a member of Erie 99er User Group in Erie Pa.)

Hardware tips

By Martin Smoley

(This article is reprinted from the April 1988 edition of the Northcoast 99er's newsletter TI Chips in the Ohio area. Marty Smoley, you might recall, is the resourceful

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User who wrote so many seminal tutorials on TI BASE, the Data Base Program from the Faherty's. This article represents the anecdote of one user who goes about repairing his Extended BASIC cartridge. With our equipment aging, we will have to deal with such things as equipment failure.--ed)

If you have an Extended BASIC cartridge that has gone bad for some reason, this info may help. I killed my Ex BASIC recently. While soldering some new parts on my console main board, I crossed some wires. "I'm always in a hurry." When I turned on the power, I already had the Ex BASIC in the Grom Port. Mistake!!! I fed some current directly back into the Cartridge and zapped it.

After a severe anxiety attack, and real depression, I thought, "hey, this is the beginning of another project." Well, the project has been about two months in the making and I'm ready to let you all know the results. Extended BASIC Cartridges are fixable and the parts may not cost a lot, depending on how bad you crashed it and if you can solder. One other consideration is this: if you have to replace all the chips in the cartridge it will cost around \$30. You can probably pick up a used cartridge for around \$20. Since I'm out to put some mileage on my new soldering iron, these things never bothered me. So let's go. NOTE: you're doing this at your own risk. If you have any problem arising from this article, I don't want to hear about it.

Try to open the cartridge as neatly as possible. You can glue it back together later, but it would be better if the original snaps worked. When you get the PC board out, you'll see eight chips. There are two piggyback chips at one end of the board you won't see unless you have to solder them. The next thing to do is check the PC board and every solder joint to make sure that all the connections are good. If you find a cracked line or a poorly soldered leg on one of the chips, repairing it may solve all your problems. If we haven't accidentally found the problem so far, we'll move on to the heavier stuff.

There should be a 74LS00 and a 74LS74 chip at one end of the board. If you are lucky, replacing these will put you back in business. Just de-solder them, pick up two new ones at your local electronics supply, (they should cost less than fifty cents each), and solder the new chips back in. Then, without bothering with the cartridge case, plug the board back into the console and see how lucky you are.

In my case this was no help at all. The next step in this project is to replace the two large chips on the board. These are ROM chips and appear to be quick to fail in any adverse situation (static charge, etc.). The chip closest to the 74LS74 is listed as ROM,EXT.BASIC part number 1041016-0006, and the one next to it is ROM,EXT.BASIC part number 1501392-0025. Their prices are \$6.00 and \$5.60 respectively. These parts and others can be ordered from TI by calling (805)741-2265 or (805)741-2266. These are not toll free numbers. Replacing these two chips fixed my problem, and after doing a small amount of investigation, plus analyzing my

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own situation, it is my uneducated guess that replacing these four chips will fix the cartridge in at least 80% of the cases.

I put a substantial charge of current back through the cartridge and did not hurt the piggyback GROM chips at the other end of the board. So, replace the two large ROM chips and see if the cartridge works. I really hope it worked because we are now passing into the area where it would have been cheaper to pick up a good used Ex-BASIC for \$20. If it still doesn't work, it's time to replace the GROMs.

The GROMs are available from TI at the same phone number, and they sell for \$3.60 each. The way they are tied together, if one has been damaged, they are probably all damaged. Toward the ROM, the top GROM is 2115; this is TI GROM,EXT.BASIC 1015960-3115. And the chip it is piggybacking is 2122 (TI GROM,EXT.BASIC 1015960-1122). The top GROM next to it is 2114 (TI GROM,EXT.BASIC 1015960-1114), and the chip it is piggybacking is 2113 (TI GROM,EXT.BASIC 1015960-1113). If you are replacing the GROM chips, I recommend you do them all at once. If you try to add in one new chip at a time to isolate the problem, the soldering and desoldering could damage your new chips and you'll never find the problem. The resistor, and capacitors you see scattered around the printed circuit board will practically never fail, so don't worry about replacing that stuff.

Here are some tips for electronic work. Use a low power soldering iron (15 watt). Hold chips or a PC Board by the edge, like a photograph. Try to not put your fingerprints all over the circuits or chip legs. Do not wear clothing that has caused you to get a static shock from the refrigerator door in the past. There is a notch or mark at one end of a chip to designate pin one, or the chip direction. Be sure you do not put a chip in backwards. Whenever you remove chips from a PC board use a vacuum type desoldering tool to remove all the solder from around the chip legs. There have been times when I desolder a leg, resoldered it, and then desoldered it again, in order to get a clean desolder job.

Use long-nose pliers to wiggle and loosen every chip leg. If the legs are not all free and you pry the chip off the board, you will damage the board. The chip should be loose enough to almost pick it off with your fingers.

When soldering any electronic part, do not heat the part with your iron, and feed in the solder. This will over heat the chips. You should keep your iron clean. Hold the iron in one hand and the solder roll in the other, and with the item to be soldered on the table in front of you. Putting the end of the solder roll against the hot iron, accumulate a very small drop of molten solder on the end of the iron (don't do this directly over your project). Place the iron against the part to be soldered for one or two seconds or until you see the molten solder flow around the wires or parts to be soldered. Do not hold the iron against the parts you are soldering any longer than necessary, and do not reheat a

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chip leg over and over. If you must replace the piggyback GROM chips, squeeze the legs of the top chip together until they fit tightly over the bottom chip, and then solder the chips together first. At that point, solder the pair of chips to the board.

Have fun. Marty.

COMPARING HEALTH INSURANCE

by Jim Peterson

For many of us nowadays, our biggest worry is the outrageous cost of health care; our second biggest worry is the rapidly rising cost of health insurance, and the third worry may be the flood of health insurance advertisements in our mail.

I thought it would be useful to write a program that would compare the cost effectiveness of these policies, so I sent off for a number of their offers. I soon realized that such a program would be impossible. You can't compare apples and oranges. There is no common ground for comparison. Some policies offer a fixed amount per day, others offer a fixed percentage of expenses per day. Some pay high benefits for short periods, others pay lower benefits for longer periods. All have their own particular exceptions, deductibles, etc. In order to determine which policy might be best for you, you must make several blind guesses as to what your future might bring.

However, you should certainly do whatever you can to pick the best policy, because they obviously are not all equal. I found that when a company offers two levels of protection, the higher level tends to be a ripoff that pays little more in benefits in relation to its much higher premiums. I also found that some policies being endorsed, promoted and advertised through senior citizen organizations, veterans societies, etc., are ripoffs. Although I cannot offer you a general purpose program to make comparisons, you might be able to write your own quite simple program to make the comparisons you are interested in. The following is an example, which I wrote for my own use. It prints out a table showing what my out-of-pocket expenses would be, under each of five options, per each thousand dollars of medical bills between \$2000 and \$56000 in a year, for myself and wife.

```
100 CALL CLEAR
110 OPEN #1:"PIO",VARIABLE 1
60
120 PRINT #1:CHR$(15)
130 PRINT #1:"ANNUAL";TAB(20)
   ;"BLUE CROSS";TAB(40);"BLUE
   CROSS";TAB(60);"BLUE CROSS"
   ;TAB(80);"BLUE CROSS";TAB(10
   0);"MEDICARE B"
140 PRINT #1:"EXPENSE";TAB(2
   0);"HIGH OPTION";TAB(40);"ST
   ANDARD";TAB(60);"HIGH OPTION
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":TAB(80);"STANDARD";TAB(100
);"ONLY"
150 PRINT #1:TAB(20);"AND ME
DICARE B":TAB(40);"AND MEDIC
ARE B":TAB(60);"ONLY";TAB(80
);"ONLY"
160 PRINT #1:"":""
170 DRUGS=1000
180 MEDCOST=820
190 MEDDED=2000
200 BC1COST=925
210 BC1DED=500
220 BC2COST=5198
230 BC2DED=400
240 FOR ANNUAL=2000 TO 55000
STEP 1000
2500 PRINT #1:ANNUAL:
MEDDED)*.8
270 REMAIN=ANNUAL-MEDICARE
280 HIGH=(REMAIN-BC2DED)*.2
290 HIGH=MIN(HIGH+BC2DED,150
0)+MEDCOST+BC2COST
300 PRINT #1:TAB(20);HIGH;
310 STANDARD=(REMAIN-BC1DED)
*.25
320 STANDARD=MIN(STANDARD+BC
1DED,2500)+MEDCOST+BC1COST
330 PRINT #1:TAB(40);STANDAR
D;
340 HIGHCOST=(ANNUAL-BC2DED)
*.25
350 HIGHCOST=MIN(HIGHCOST+BC
2DED,1500)+BC2COST
360 PRINT #1:TAB(60);HIGHCOS
T;
370 STANCOST=(ANNUAL-BC1DED)
*.25
380 STANCOST=MIN(STANCOST+BC
1DED,2500)+BC1COST
390 PRINT #1:TAB(80);STANCOS
T;
400 MED=(ANNUAL-DRUGS-MEDDED
)*.2+DRUGS+MEDDED+MEDCOST
410 PRINT #1:TAB(100);MED
420 NEXT ANNUAL

```

In this case, as a retired federal employee I am entitled to Blue Cross insurance in either a high or low option. Being over 65, we are both entitled to Medicare Part B. Medicare does not pay for prescrip- tions, but Blue Cross does, so I must first make an estimate, in line 170, that these will cost us \$1000. Our cost for Medicare premiums, in line 190, is \$820 (there is a late penalty involved). In line 190, Medicare does not pay the first \$100 for each person and I can safely estimate that both of us will reach that limit.

In lines 200-210, Blue Cross standard option would cost \$925 in premiums, and does not pay the first \$250 per person. High option costs \$5198 in premiums (that's

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right!) and does not pay the first \$200 per person. Medicare is the primary payer; it pays first and any other policy picks up what is left over. So, in line 260 I calculate that Medicare will pay 80% of annual bills not including medicine and not including that \$200 deductible. **NOTE!** If you want to add or subtract figures before multiplying or dividing them, you **MUST** put them in parentheses!

In line 270, the remainder to be submitted to Blue Cross is the annual expense minus what Medicare pays. The high option pays 80% of expenses other than the \$400 deductible, so in line 280 my expense would be 20%. However, when my out-of-pocket expense, including the deductible, reach \$1500 it pays 100%. That MIN in line 290 picks whichever is lesser, \$1500 or my 20% of the bills plus the deductible. To this must be added the cost of the Medicare premiums and the cost of the high option premiums.

Lines 310-320 perform the same calculations for standard option, which pays 75% after the deductible, and 100% of everything over \$2500.

If I do not have Medicare, Blue Cross is stuck with the whole bill. Lines 340-350 and 360-370 calculate my share of the expense in the same way.

And if I have Medicare only, line 400 calculates that my expense will be 20% of the annual bills, not including medicine and the deductible, plus the cost of medicine and the deductible and the premiums.

This is not the whole picture, of course. Blue Cross also pays hospital expenses and so does Medicare Part A, neither of which are considered here.

However, if you want to key in that example and run it, you will see that if my total annual expenses are less than \$5000, my out-of-pocket expense would be the least if I carried Blue Cross standard option alone; if my expenses were between \$5000 and 21,000 it would pay me to have both Blue Cross standard option and Medicare; and if they were over \$21,000 it would again pay me to carry Blue Cross standard option alone. Under any circumstances, Blue Cross high option is a complete ripoff - yet many people, unable to analyze all these variables, are paying for that outrageously overpriced insurance.

(Jim Peterson runs TIGERCUB Software Company, and often contributes articles to TI newsletters around this country and others.)

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