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### THE HUGgers HOOSIER USERS GROUP People Helping People

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November 1991

1 f The HUGgers Newsletter

Volume 10, Number 17

# MINUTES OF THE OCTOBER MEETING.

The meeting was called to order by Bryant Pedigo, at 3:00 FM. with approximately sixteen Huggers in attendance.

Items discussed included the Chicago Fair. Information was given on were the fair would be held this year, vendors the would be present and reservation information. A short discussion on what items the group would have for sale at the fair, then proceeded. Items included - Tech Drive by Monty Schmidt, a group of articles called the Funnelweb papers, documentation for Funnelweb 4.0 and TI-IBM parrallel adapters (not all of these items where ready in time for the fair).

A questions was raised as to how the pro-rating was being done on the new membership rates. Since three of the top four officers where missing this question was not fully answered.

The meeting was adjourned at 3:30 PM.

Respectully Submitted, Dan Eicher

HUG OFFICERS				
Secretary Treasurer	Gary McQuade Bryant Pedigo Jeff Overton Walter Farmer	888-5654 255-7381 299-2333 539-2679		
Librarian	Bryant Pedigo	255-7381		

# OFFICER'S CORNER

As in previous years the Hoosier User's group was represented at the Chicago TI International World Faire and at the Milwaukee TI-Faire. all, nine members of our group were present at Chicage. This faire appeared to be successful. although attendance did not appear to be as high as in previous years.

time our table MAG seperate room adjacent to the main exhibit room. In spite of being in a less visable location, managed a respectable profit.

There were approximately 16 dealers set աթ including Larry Conner, Asgard. Texaments, Bud Mills Services, RAVE 99. OPA. MICRO-Genial Computerware pendium, 9640 News. Other users groups present included the Fox Valley U. from Carpentersville, Il: Milwaukee U.G.: and the Will Co. U.G. from Romeoville, Il.

Most of the new products shown were software rather than hardware. items nearly ready for release are a composite converter for OPA's (TI Image Maker - 80 column analog devise) and the previously announced Accelerator Board. Also announced were a device call POP-cart from a and a FPM Card from Tony Lewis of Raleigh, NC.

The POP-cart is custom cartridge that can hold up to 2 megs worth of

programs burned into ROM by OPA. These can include code from modules. based programs. nna advantage of this is that cartridge programs can be modified before installing in the POP-cart. This cartridge takes advantage of "REVIEW MODULE LIBRARY" routine built into the console roms, or an optional custom menu is available. The base module has 256k and will be available in sizes up to 2 megs.

The FFM card is a "floating point math" card for the P-Box. It uses a Motorola 68881 floating point math co-processor and will be able to greatly speed up math intensive programs that access the card thru use of call link's from basic, or assembly routines; and will provide double precision and extended precision accuracy. The FPM card should be available in 1992.

Software wise, there were a number of new 4/a programs. These included more music disks and a game called SCUDBUSTERS from Bruce Harrison of Harrison Software, several programs from Texaments, Asgard, and Ken Gilliland of Notung Software. For the GENEVE, Beery Miller had several items of interest including functional versions of MYARC's GEME operating system, the Pascal Runtime software, a very impressive new DOS shell menu program from LGMA Products, and J.P. Software's GEN-TRI program, along with many of J.P.'s other programs that have been very hard to find for the last 2 ywars.

Of the new programs shown, one of the most interesting was Sound F/X by Barry Boone. This program allows the playing of and manipulation of digitized sound - including speech with impressive clarity. Barry also released 6 new games for the GENEVE that run under MDOS. Asgard had a number of new programs including LinEditor for working with files too large to fit into memory. an interesting mail list program called Mail Room - that supports 80 column devices, a charat character

set editor called SGW. and for the GENEVE only a program called Thumbnails for cataloging and converting MacPaint pictures. At Notung Software had an impressive new game called TI-Casino v.3 and more clip art and music disks.

As to the Milwaukee TI-Faire, it was a more relaxed affair, attendance was better then previous years, in part due to being opened up to other Apple computers such 25 Commodore systems. The majority of the venders and groups there were TI oriented and having a few "other" computers represented there did not detract. Both faires were well worth attending.

- BCP

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Now with a Hard Drive on an experimental basis courtesy of Gary McGuade

MONTHLY MEETING LOCATION
LITTLE HOUSE NEXT TO THE
ST. ANN'S SCHOOL
2839 S. McCLLRE
INDIANAFOLIS, IN
MEETING STARTS
AT 2:00 P.M.
NOVEMBER 17 1991

This news letter is brought to you by the efforts of the officers + members of the Hoosier Users Group.

THE OPPINIONS EXPRESSED HEREIN ARE THE AUTHORS', and DO NOT NECESSARILY REFLECT THOSE OF THE PUBLISHERS.

MEMBERS ARE ENCOURAGED TO SUBMIT ARTICLES FOR PUBLICATION.-PLEASE!

REMEMBER
This is YOUR user group too!

# WHY SHOULD YOU LEARN TO PROGRAM?

### by Jim Peterson

Why should you learn to program? To make money? No way! If you could write a program to guarantee world peace, eliminate hunger and cure AIDS, you couldn't make money selling it to the TI world!

.Why should you learn to program? To contribute something to the TI world? OK, but don't expect any thanks! Contributing a program to the TI public soldering iron, those who can plug in bottomless dry well - you will never hear a splash, not even a thud.

Why should you learn to program? Because no one has written the program you need? Well, now you have a good reason! Since there is neither money nor recognition in programming, the programmers tend to write what they feel like writing, not what you want them to write.

Why should you learn to program? For one reason, because I know that you would like to make some changes in the the keys (two right fingers and a left programs that you use frequently. I know that, because the only feedback I and routines which have given me a ever get is from people who wish that Igreat deal of satisfaction. would change this or that! You really wouldn't have to learn very much to change colors, add or silence a beep orsometime. a burp, output to disk instead of printer, etc., etc.

Beyond that, unraveling someone else's code can be tricky and frustrating (and I pity anyone who tries to unravel my code!) Often I find it easier to just rewrite the basic idea in my own way.

If you do modify someone's program, please put a note on the title screen, or at least in a REM, that you did so and unless you are very sure that you have not introduced a bug, don't distribute your version! Programmers do not like to be blamed for other people's mistakes, and the sales of good programs have been ruined by the bad reputation resulting from pirated,

modified and bugged copies.

But, the real reason for learning to program - it's fun, it's challenging, it's creative! There is something very satisfying about getting an idea to make the computer do something it has never done (as far as you know!) and then succeeding in making it do what you want. There is a thrill in pushing the limits of that obsolete tiny TI pea brain just a little bit farther.

There are those who prefer to exercise their creativity with the domain is like dropping a pebble into achips and soup up a Model T computer to run like a Ferrari. I regard them with awe and wonderment, and I'm glad they are around. Without them, I wouldn't have my RamDisk, and my equipment wouldn't get repaired.

> Personally, I am the ultimate klutz. If I approach my car with a screwdriver, all four tires go flat. My one feeble attempt to repair my P-Box resulted in failure, expense and embarrassment. But, without having more than a faint idea what goes on beneath that keyboard, I have learned to punch thumb) and create hundreds of programs

It's been fun! You should try it



I still have a P-Box with 2nd power supply and two Qume142 360K disk drives for sale....yours for \$100!!!

I also have a black and silver console TI99/4A for \$25 with no modules.

I have assorted TI Modules....all for \$20 with documentation.

Call Bill Lucid ...317-291-3995.

# MIDI-Master 99

# A musical masterpiece

# By BRUCE HARRISON and DOLORES P. WERTHS

First, some clarification: Although many readers will recognize the authors of this review as the creators of Assembly music for the TI, we are not in any way in competition with Crystal Software's MIDI-Master. We are, however, in the unique position of having a team consisting of both a programmer and a musician, so we feel eminently qualified to evaluate this product from both a technical and musical perspective. Also, we have a Casio MIDI Keyboard with which to use the program.

First impression: This is an excellent piece of programming by a very talented programmer. Mike Maksimik has delved into the depths of the TI's capabilities and made it do things we didn't think possible. The program takes "source" files written in a special musical-oriented notation and compiles these into the necessary commands for a MIDI interface. It can also save the compiled music to disk, and can load pre-compiled works into memory for play through the MIDI device.

The currently available version is V2.3+, with a recent upgrade having been made. The package consists of two items: a very nicely made MIDI connection cable, which plugs into the RS-232 connector, and a single disk (DS/SD) which contains all the software and documentation. (If the user has only SS/SD drives, a single sided edition will be supplied upon request.) The program is set up to autoload from Extended BASIC, and may also be run from Editor/Assembler. Hardware required is TI-99/4A or Geneve, with E/A or XB, 32K, RS-232, and disk drive.

Documentation is extensive and well written. The only gripe we had about the documentation was that it required either Funnelweb or TI-Writer to print it out. Given either of those, however, printing was simple enough. We used Funnelweb's formatter and had no trouble printing the does.

The program itself is menu-driven, and easy to use. Prompts and error reports are concise and clear, making this one of the more user-friendly programs we've seen.

# Review

### REPORT CARD

Performance	A
Ease of Use	A
Documentation	
Value	
Final Grade	A

Cost: \$45.00

Manufacturer: Crystal Software, 635 Mackinaw, Calumet City, IL

Requirements: TI-99/A or Geneve 9640 with Disk Drive, XB or E/A module, RS-232 interface

#### A MONUMENTAL WORK

From a programmer's perspective, this program represents a monumental work. Mike has crammed what must be a very complex program into Low Memory only, so that all 24K of high memory is available for the music itself. He has also constructed a very efficient language for MIDI music.

Creating music source files for MIDI-Master does require an editor of the kind supplied with the E/A module, or one could use Funnelweb's Program Editor for that purpose. Music source files are written in a compact and easily learned language of Mike's devising, called Symbolic Note Format. The documentation includes a full description of this format, and it doesn't take long to master.

MIDI devices themselves come in many shapes and forms, and have different commands for the "instrument" selections. MIDI-Master has provided for this variation among devices in a number of ways. First, and most important, is the ability to establish a "Patch Library" so that works prepared for a different keyboard or synthesizer may be translated on the fly to work on the make and model you own. For those who have MIDI devices with more advanced capabilities, special DATA messages may be included in the source files to activate auto-rhythms and such, and to

synchonize them with the music MIDI-Master is sending. (We haven't tried doing that with our Casio, but the capability is provided.)

For those, like us, who also have PC computers with MIDI interface and Twelve-Tone systems' Cakewalk software, the soon-to-be released version 3.0 of MIDI-Master will provide the capability to "port" MIDI files created by Cakewalk over to the TI and play them through MIDI-Master.

#### MUSICIAN'S POINT OF VIEW

MIDI-Master is very easy to use. The instructions are more than adequate. Best of all, at least for me, they are written in a musician's language rather than in "computerese". The computer-puke who is musically oriented would have little difficulty with the instructions, because most of the MIDI terminology is very clearly illustrated.

I did, however, find a discrepancy in the instruction regarding accidentals, that is, "sharps" and "flats" that occur throughout a composition. MIDI-Master's manual says to use a "#" for a sharped note, and " for a flatted note." This is not so. When I used the space in order to make a flat, it did not work. I had to use its equivalent sharp instead. For instance where my score indicated had given the flat sign for B when the key signature indicated natural, I had to write it as A#. That was a minor annoyance, which was easily overcome.

I can appreciate the facility with which MIDI-Master's instructions read, because I had to struggle with Cakewalk's 172-page "easy to read" manual, most of which was written in "Computerese". However, I'm with Bruce — you should NOT have to have TI-Writer or Funnelweb with which to print the documentation. A simple Extended BASIC program will do the trick.

Take it from me. MIDI-Master has a great set of instructions! Let's face it, if you can't understand the instructions, how the heck can you expect to learn to use the product? I learned to used it in one day. In my opinion it shouldn't take any longer (See Page 29)

# MIDI-MASTER 99—

(Continued from Page 28) than a day or two to use any piece of soft-

ware.

As yet, there is no provision for allowing a person to play the work into MIDI-Master. It must be programmed. I don't let

that bother me, since I don't play the clavier very well anyway.

It is easy to use. I recommend marking each measure carefully with a comment line even though it takes up file space, because once you need to make corrections, it will be chaos trying to locate a mistake if you don't. Comment lines do not use any memory in your music. The compiler skips over them.

### MANY CHANNELS AND VOICES

MIDI-Master can handle numerous channels and voices at once, but its capabilities are only as good as your clavier. You must remember that each instrument requires a separate channel. This is not unique to MIDI-Master, rather to the clavier you are using. If you have a MIDIcompatible Casio, then you are limited to 3 channels and a fourth channel which is supposed to be assigned to program changes for auto-rhythms. Casio's channel 1 handles 6 "voices", channel 2 handles 4 voices, and channel 3 handles 2 voices, so you must plan carefully before attempting to combine voices and instruments. Yamaha's new PSR-300 claims to be 28-note polyphonic, but I wouldn't know, since I don't own one.

Changing instruments and tempos on the fly is easy and fun to do with MIDI-Master. A simple "patch" or "tempo" directive placed ahead of where you want the change to occur in the data file and - Voila! It happens!

For instance, if you are playing an organ number which uses a regular pipe organ sound, then later requires you to draw the "flute" stops on the right hand, then you would tell the channel and track numbers representing the right hand to change from pipe organ to flute. The ones for the left hand might remain the same as before. The main drawback of all this is if you do chording. Each note requires a separate voice, unlike Cakewalk, and in order to keep each voice in sync, you must put in the required number of rests in the voice which may only have one or two notes be-

cause they are part of a chord. This is a real pain, and should be corrected in future updates. Each rest wastes two bytes.

MIDI-Master's biggest limitation appears to be that it has no way to make multiple files. Mike recommends TI-Writer's Formatter. Great. But, what if you don't have TI-Writer? You are then stuck with one very long file which takes for-bloodyever to load and may not all fit in memory once it finally does stop loading. Bruce cured that problem for me by making a tool that allows me to make as many separate files as I wished, then combined them all as a single file on the disk. It takes only a few minutes to combine 6 or 7 files.

However, Mike promises that this problem will be solved in Version 3.0. In the meantime, Bruce gave a copy of our "tool" to Mike pass along to his customers who don't have TI-Writer. (We're told this tool is available from the Chicago Users' Group's BBS.)

MIDI-Master does allow the user to interpret most signs in any musical score. Trills, turns, appogiaturas, staccatos, dotted notes, ties, and triplets are all easy to execute. Slurs and legatos are another matter. You must use a tempo change in order to create the illusion of phrasing which is normally done with slurs and legatos. Some of this is possible in the data section by playing mathematical games with the ties, rests, and durations, but it will cost bytes. All I can say is see what works for you, and stick with it.

Da Capos are not possible with Version 2.3+, because it has no provisions for looping. I programmed a 16-measure military march with 6 parts with MIDI-Master. Each 8-measure section required a repeat. I had to replicate the data in order to follow the composer's instructions. You multiply those 8 measures times 2 for the first da Capo times another 2 for the next 8 measures which also must repeat, times 6, and a lot of memory is used up. Don't plan on doing Beethoven's Ninth with Version 2.3+.

Don't let this factor discourage you! This is a neat product!

It does everything it promises to do, and does not require an expensive clavier. In fact, if you have a Clavinova with 7 octaves, you'll be out of luck, because Version 2.3+ handles only the 5 octaves found on the garden variety clavier you found at K-Mart, Consumers, etc. Most MIDIcompatible Casio and Yamaha claviers of this type are moderately priced at \$200 to \$300.

I have pointed out MIDI-Master's draw-backs, but I have looked at it from a classical musician's viewpoint, and for me there is still a wealth of music out there which MIDI-Master can handle. Popular songs are easy to program, as are country-western, sacred music, and folk songs. There seems to be no end to the arrangements that are possible in these fields. It's all up to your imagination.

Mike Maksimik is one of those rare people who is both a talented musician as well as a programming genius. It is for this reason that MIDI-Master was possible.

Drawbacks exist on any program, and MIDI-Master is no exception. The principal ones have already been mentioned. One that hasn't been, although it's a minor annoyance, is the business of Barry Boone's loader. Maksimik chose to use that loader so the program could run from Extended BASIC. The gripe is that the does suggest that the user should send a fairware contribution to Barry Boone. Perhaps I don't understand the fairware concept, but the user did not choose the Boone loader, and therefore should not be asked to contribute. When one has paid his \$45 for MIDI-Master, that should be enough.

### FREE UPGRADE TO V3.0

Potential users should know that for those who purchase Version 2.3, Crystal Software will throw in a free upgrade to Version 3.0 as soon as it's finished. As we understand what Mike is doing in Version 3, all of our gripes should go away.

In summary, MIDI-Master 99 is a truly fine program, with a few flaws, most of which should go away with the introduction of Version 3.0. If you have a TI or Geneve and a MIDI keyboard, this program is a must have.

MIDI-Master is the single most affordable MIDI anywhere at \$45! It compares favorably to programs for PCs which cost more than three times that price. (Adding MIDI to our Tandy PC cost \$250 for hardware and software.)

### Software Shootout!

# Business Graphing and Charting Programs

### Bill Gaskill

We've all heard that a picture is worth 1000 words and that expression holds no more truth anywhere than it does in the area of presentation graphics. In the business world we have discovered the need to effectively communicate the relationship between numbers, whether they are sales figures versus profit margins or the current rate of crime versus the number of arrests made by a police department. The ability to produce presentation graphics is fast becoming a necessary part of doing business.

In the 99/4A community there are several business graphics programs to choose from, none of which can compete with the applications out there in the business world, but all of which have a place in someone's library of software tools. Most if not all of these applications that are written for the 99/4A are certainly adequate for home use and even small business applications where a great deal of sophistication may not be required. Unfortunately, presentation graphics require a great deal of memory to produce, which is something that the 99/4A just doesn't have. But that does not mean that the programs cannot be put to good use.

# GENERAL INFORMATION:

There are four main business graphics programs that have been produced for the TI that I am aware of and that I have used; Business Graphs 99 from McCann Software. Chart Maker II from Quality 99 Software, Extended Business Graphs II from Great Lakes Software and Von Graph from Utilitee Software. Business Graphs 99 is written in Forth, Chart Maker II in XB and assembly, Extended Business Graphs II in XB and assembly and Von Graph totally in assembly language. All but Business Graphs 99 employ the TI-99's 32 column Graphics mode to generate screen displays. BG99 uses a 64 column Forth screen.

Business Graphs 99 comes with a 27 page manual that is the best of the lot. Chart Maker II and Von Graph come with one 8 1/2" X 11" sheet of paper and Extended Business Graphs II comes with seven 8 1/2" X 11" sheets of paper. From a content point of view, only Chart Maker II really suffers from a lack of information. Von Graph is so simple to use that the one page it does have is pretty much unnecessary. Chart Maker II could use some more information to help out the first time user.

### TERMINOLOGY:

Variables, as used in this article pertain to the names of the months. Values describe the numeric amount that is attached to each variable (each month), meaning the dollar amounts.

X/Y describe coordinates on a graph. X is always the horizontal coordinate and Y the vertical.

### DATA IMPORT/EXPORT FEATURES:

None of the the four applications examined provide built in import/export routines to read data from Multiplan, TI-Writer or any other program, or to send completed graphs to another program. In the business world it is the norm for presentation graphics programs to possess both of these capabilities. However, only Business Graphs 99 even considers them. It tells you how Multiplan files can be converted for use in a BG99 graph (with some limitations) and it provides some help on how a BG99 graph can be converted for inclusion into a TI-Writer file. Since no import/export facilities exist, all four programs require that data be hand-keyed.

# LOADING/SAVING FEATURES:

One of the most convenient features a presentation graphics program can offer is the ability to save the data used to produce a graph and also to save the actual screen that was displayed by the graph generation process. Von Graph does not provide any load/save facility, nor does it save graphs from the screen. You must key in the data each time. Business Graphs 99 allows variables and values to be saved, but not Titles or Sub-Titles. It too does not save actual screens. They must be re-generated from saved data. Chartmaker II allows everything to be saved and you can even edit a graph in Draw 'n Plot that was produced by Chart Maker II. Extended Business Graphs II allows everything to be saved also, but saved screens cannot be edited. Instead, you must generate a new one.

# PRINTING CAPABILITIES:

Another fairly common feature of presentation graphics applications is the ability to "size" the graph for output purposes. In our comparison, Chart Maker II and Extended Business Graphs II both allow large or small printed output. Von Graph supports only one type, which is large. Business Graphs 99 provides an X/Y relationship option that allows the width of a graph to be altered (done mostly to allow pie charts to be printed as circular as possible), and a "density" option that allows spacing between variables to be controlled. But the output of a Business Graphs 99 graph is always done on the same plane, regardless of spacing. By that, I mean that it will not fill an entire page with a graph or chart by printing it in double size, sideways.

### TYPES OF CHARTS/GRAPHS:

Von Graph provides a one-dimensional vertical bar chart with from 2-12 variables allowed and a one-dimensional pie chart that also allows from 2-12 variables. Business Graphs 99 provides one-dimensional vertical bar charts that can be single, double or stacked, with up to 20 variables. It also offers a one-dimensional X/V graph that can show Hi-Low plot, Line plot or Area plot, with as many as 100 variables. The pie chart is one-dimensional also, allowing up to six variables, but with exploded view capabilities. something none of the others offer. Extended Business Graphs provides one-dimensional vertical bar charts with from 2-12 variables and unique pie charts that include a 3-D block graph in the same printout as the pie chart. From 2-12 variables are allowed. Chart Maker II provides a 12-month histogram, which forces you to use the months of the year as the variables whether you want to or not, and a 10-item graph that could be used to compare

five months of data from two different years, or 10 items using any variables. Either option supports 3-D horizontal and vertical graphs and one-dimensional pie charts.

#### SCALING/DATA ACCURACY:

Scaling is the process of making equal relationships between values based upon the low and high values that exist in the data being charted. For example, in the graphs that I have included for illustration, the low value is \$40 for utilities in July and August and the high is \$250 in February. The process of Scaling sets the other nine values at equal increments somewhere in between 40 and 250. The result of that process determines the accuracy of the values that are ultimately printed on the chart or graph. In most business world presentation graphics programs you have a choice of manual or automatic scaling.

Von Graph provides only limited scaling of values, but it does determine the size of the bars in its bar chart based upon a maximum value that you key in after all of the values have been entered for each variable name. Although the manual entry of an upper limit might seem unnecessary, it does allow you some control over the height of the bars. In the 1988 Utilities illustrations, using the \$250 max would put the bar for the month of February right at the top of the chart. To lower it and make the appearance of the chart more appealing. you could simply enter \$300 as the max value and Von Graph would bring the highest bar back into the chart's grid. Once the max value has been entered. Von. Graph then produces a chart or graph that contains actual values as you keyed them in. Extended Business Graphs II uses the data you key in to determine chart or graph element sizes and relationships, but does not provide actual values in any of the output. Although the charts and graphs are quite attractive, you never know what the actual values are. You get only an average and a total. Business Graphs 99 does the same type of thing. Your data is used to determine the relationships between values, but the actual values for each variable don't show up in the end product. Chart Maker II seems to be the best in this area, providing actuals in most graphs. The pie chart though shows only percentage of total for each value and the total itself.

# TITLE, VARIABLE and VALUE LENGTHS:

Von Graph allows a graph title of up to 24 characters on the bar graph, but no title on the pie chart. Variable names are limited to four characters in length. Values can only be 3 digits long, with no decimals allowed. Business Graphs 99 allows 18 character titles and an 18 character Sub-title, 9 character variables and 6 digit values, with no decimals allowed. Extended Business Graphs II allows a 28 character title, 11 character variable names and 8 digit values, but no decimals. Chart Maker II allows 28 character titles, 8 character variable names and 4 digit values including a decimal point.

# ERROR HANDLING:

All programs trapped user created errors properly except Chart Maker II. Trying to print a graph without providing a printer or device name caused the screen to go berserk and the program to lock up. Aside from that, I/O operational errors were trapped quite well.

#### CONCLUSION:

As with almost any piece of software, each program examined has its good points and bad points. Von Graph 99 is perhaps the easiest of the lot to use, but it also has the fewest features. Business Graphs 99 produces the best output and also has the most flexibility, but it is by far the most complex and even perplexing program of the bunch. The Extended Business Graphs II program is fairly easy to use and quite comprehensive in the options it provides, but it won't provide actual values in printed output. Chart Maker II is easy to use, feature rich, including the ability to sort data in ascending or descending order, but it limits the scope of its utility by forcing variable names to always he based upon months of the year on one-hand, or allowing only 10 variables at one time on the other.

The bottom line may be that you will have to determine which program best fits your particular needs. If you only need visual trend analysis capability then Extended Business Graphs II may be your choice. If you need the most professional output available for a 99/4A application then Business Graphs 99 would likely be your pick. If simplicity and ease of use are your major concerns then Von Graph 99 is probably at the top of your list. If you are looking for a happy medium between the best and the worst of what all the others have or don't have, then Chart Maker II is probably going to be your choice.

\*\* Note: In the Report Card grading, I follow InfoWorld's standard of deducting 1 point or half of a grade for copy protection. Thus both Chart Maker II and Von Graph have lower final grades then they otherwise would have earned on their other merits. Note also, that the Final Grade is NOT an average of the other categories. Please consult the January 1988 MICROpendium, page 6, for review criteria.

### REPORT CARD:

	BG99	CMII	EPG2	VG99
PERFORMANCE	A	B+	A	B
EASE OF USE	C	<b>A</b> -	A	A+
DOCUMENTATION	Α	D	В	C
VALUE	A+	A	В	C
FINAL GRADE	<b>A</b> -	B+	B+	В-

Business Graphs 99 \$15.95 McCann Software Box 34160 Omaha, Ne. 68134

Chart Maker II \$9.95 Quality 99 Software 1884 Columbia Rd #1021 Washington, D.C. 20009 Extended Business Graphs II \$14.75 Great Lakes Software 804 E. Grand River Ave. Howell, Mi. 48843

Von Graph 99 \$10 L.L. Connor Enterprise 1521 Ferry St. Layfayette, In. 47904

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STATE	CITY	for each month from 1 May to Oct. New member!
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HOOSIER USERS GROUP Indianapolis, IN 46206-2222

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Below you will find an application for membership to the Hoosier Users Group. Active membership entitles you to the Newsletter, up and download on the HUCbbs, attendance and voting rights at regular club meetings, access to the HUGger Library of Programs, special club activities and special guest speakers for one year.

# ELECTION FOR MEMBERSHIP



HOOSIER USERS GROUP P.O. Box 2222 Indianapolis, IN 46206–2222





May 1992

Dan H. Eicher P.O.Box 605 Mooresville, IN 46158

TIME DATED

NOVember 17, 1991

NATERIAL