

# BITS, BYTES & PIXELS

LIMA 99/4A USERS GROUP



January 1991 (This should read "1992") Volume 8, #1

## THE P-GRAM PLUS WITH CLOCK

reviewed by Charles Good and Jack Wolhaupt  
Lima Ohio User Group

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Charlie's part:

### WHAT CAN YOU DO WITH A GRAM DEVICE?

The PGRAM and PGRAM+ are manufactured by Bud Mills Services. Like other battery backed GRAM devices such as the GramKracker and the Gramulator, this device allows you do three things:

--1. You can save any command module to disk and then load the module from disk back into the device. Once loaded, the module remains in memory even if the computer system is powered down because of the battery backup. Minor modifications to modules can be easily be made such as changing screen colors, default device names, and (for example in the case of extended basic) default save/load drive names. These modifications can be made to the module disk files using a sector editor, or directly into the PGRAM's memory with the PGRAM's built in memory editor.

--2. The PGRAM can be used as a supercart, giving running software such as Y.A.P.P. and some Infocom games needed access to 8K of CPU RAM normally accessed via the cartridge port.

--3. GRAM devices can provide some of the same functions as a RAMdisk. They can be used as ROM disks for storage in GRAM memory of EAS software such as DM1000. The stored software will boot very quickly from a powerup menu. Because loading a Gram device with code is rather cumbersome, and because you usually only have access to that software when you first turn on the computer, gram devices cannot be used to store text files or data files and are not as flexible as RAMdisks, which can store such files. Files created using any of the other GRAM devices, as well as files created by the Geneve's module save software can be loaded into the PGRAM's memory and will work. In addition, many of the various utilities written for other GRAM devices to add TI BASIC programs to the powerup menu and to add extra features to extended basic will work with the PGRAM. Using the now difficult to obtain JP Software program called GRAM PACKER, it is possible to store most (but not all) assembly PROGRAM image software that boots from option #5 of the EA module or loader 2 & 3 of Funnelweb in the PGRAM for instant access at the powerup menu. I had to borrow a copy of GRAM PACKER from a local user group member to do this. GRAM PACKER is a commercial product not available from Bud Mills.

### GENERAL DESCRIPTION OF THE PGRAM

Unlike other GRAM devices, the PGRAM resides in the PE

box and thus is not affected by what may be the TI system's weakest link, the cartridge (aka gram) port. The other GRAM devices mentioned above plug into the cartridge port.

The regular PGRAM has one bank of memory that simulates GROMs 3-7, plus two 8K banks of RAM to simulate the bank switched ROM that is in many TI cartridges. The "PLUS" version has three extra banks of GRAM (a total of four banks) which can be switched in and out with the PGRAM's memory editor and which can also all be accessed at system powerup using the 99/4A console's built in "Review Module Library" feature.

### ADVANTAGES OF PGRAM+ COMPARED TO OTHER GRAM DEVICES:

I have had extensive experience with a GramKracker and am familiar with the Gramulator, so I can make first hand comparisons between these devices and the PGRAM+. I sold my GramKracker and purchased a PGRAM+ because I wanted a real time clock for my TI system and the PGRAM+ seemed a good way to obtain such a clock.

----MULTIPLE MEMORY BANKS: You can store lots of software in the four memory banks of the PGRAM+, allowing the PGRAM+ to act somewhat like a "romdisk". Other battery backed gram devices have only one bank of memory. Using GRAM PACKER I have loaded up my 4 banks of memory so that the following menus are displayed with I "PRESS ANY KEY TO CONTINUE":

PRESS

- 1 FOR TI BASIC
- 2 FOR TI EXTENDED BASIC
- 3 FOR FUNNELWEB
- 4 FOR PRINTER SETUP

5 FOR REVIEW MODULE LIBRARY (If I press 5 then I get the next menu for the second memory bank)

PRESS

- 1 FOR TI BASIC
- 2 FOR EDITOR/ASSEMBLER
- 3 FOR MAC FLIX
- 4 FOR DVBO WORK COUNT
- 5 FOR DISK MANAGER 1000

6 FOR REVIEW MODULE LIBRARY (If I press 6 then I get the next menu for the third memory bank)

PRESS

- 1 FOR TI BASIC
- 2 FOR AMBULANCE
- 3 FOR TENNIS

4 FOR REVIEW MODULE LIBRARY (If I press 4 then I get the following menu for the fourth memory bank)

PRESS

- 1 FOR SPACE AGRESSOR
- 2 FOR FIREBALL
- 3 FOR NITE BASH

## 4 FOR GHOST SPELL

6 FOR REVIEW MODULE LIBRARY (If I press 6 then I go back to the first menu above for the first memory bank)

The only actual cartridge software in this list is EXTENDED BASIC and EDITOR/ASSEMBLER. Everything else is either assembly PROGRAM memory image software or short TI BASIC programs. (AMBULANCE and TENNIS are available both as assembly PROGRAMs and as module software.) I don't actually have Funnelweb on my PGRAM since doing so would make Funnelweb hard to configure. The FUNNELWEB menu item is a short TI BASIC "CALL" which loads Funnelweb from my Horizon Randisk. PRINTER SETUP is a short TI BASIC program to set up my printer for particular fonts.

Bud Mills includes a public domain program called GMENU you can load into the PGRAM which will simultaneously display all the choices in all four memory banks on one screen. For those who can't get hold of GRAM PACKER, Bud includes some sample multiple item packs that can be loaded directly into the PGRAM. Bud also includes a version of John Johnson's BOOT designed for PGRAM use.

---ROCK STABLE EXTENDED BASIC: The Extended Basic module is notorious for locking up our computers if it doesn't make perfect contact with all the pins of the cartridge port. Other Gram devices that plug into the module port have gold plated contacts, so when loaded with Extended Basic, they don't lock up the computer AS FREQUENTLY as does the XB module. However, my experience with a GramCracker indicates that XB does lock up all too often with other gram devices because they plug into the cartridge port. Contacts of this port are easily worn and/or abused. Such a lockup requires the user to remove and reinsert the gram device.

Because the PGRAM+ is in the PE box it eliminates any problems caused by worn cartridge ports. I have never had an Extended Basic lockup using my PGRAM.

## LIMITATIONS OF THE PGRAM+:

---ONLY ONE PAIR OF RAM BANKS: Note this section well before purchasing the "plus" version of PGRAM, because what I am describing is potentially a major limitation.

There are four banks of GRAM that simulates cartridge GROM. But there is only one pair of RAM memory banks that simulates the two ROM banks that can be found in many modules. This means that only one module at a time that uses ROM can be loaded into the PGRAM+. If you wonder why much of my PGRAM+ memory is populated with games, this is because some of the modules I would like to use are not simultaneously compatible with each other in the PGRAM+.

Most GRAM device users like to keep Extended Basic in their Gram device most of the time. Other "important" TI modules are TERMINAL EMULATOR II (for unlimited speech), EDITOR/ASSEMBLER (some software will ONLY load using an EA module that resides starting at gram memory location >6000), MULTIPLAN, and perhaps PLATO and LOGO II. Of these only EDITOR/ASSEMBLER and MULTIPLAN do not use ROM and can thus reside in a PGRAM+ simultaneously with Extended Basic but in

a different PGRAM+ memory bank. To use any of the other "important" modules it is necessary to load them from disk into the PGRAM+ GRAM bank 1, erasing Extended Basic. Later, XB must be reloaded into the PGRAM+ GRAM bank 1 from disk.

I thought when I bought my PGRAM+ that it would be possible to keep Extended Basic and TEII both in the PGRAM+ and have access to unlimited speech from within Extended Basic. It can't be done. The XB and TEII modules compete for the same single pair of 8K RAM banks in the PGRAM+. Many of the better cartridge games manufactured by TI, including most of those with 1982 and 1983 copyrights, use ROM and cannot coexist in the PGRAM+ with Extended Basic. The only TI game I really like that CAN coexist with XB is CAR WARS.

---NO ACCESS TO GROMS 0, 1, AND 2 WITH A PGRAM+: Gram devices that plug into the console allow the user to modify or completely replace the three grom chips that are on the console motherboard. These comprise the console's operating system (Grom 0) and the TI BASIC interpreter (Grom 1 & 2). Usual modifications of Grom 0 include a custom title screen ("Charlie's TI computer") and a nice lower case character set with true descenders. Since TI BASIC isn't used very much, other software can be loaded into the Grom 1 & 2 memory space.

These Grom 0, 1, and 2 manipulations are not possible with a PGRAM. I do miss the nice lower case character set I had with my GramCracker, but other Grom 0, 1, and 2 modifications are not important.

---GMENU LIMITATIONS AND HOW TO SOLVE THEM: If you use the GMENU utility to simultaneously display all software options available from all GRAM banks, and you have Extended Basic in bank 1 (the usual place for XB in a PGRAM), there are some circumstances in which Funnelweb will fail to recognize the presence of Extended Basic. From Funnelweb's Disk Review, if you move the cursor next to an XB PROGRAM file and press "R" to run the program, Disk Review may respond with "XB MODULE NOT FOUND" even though it is there where it belongs in GRAM bank 1. The solution is to load GMENU into whatever GRAM module or park you intend to keep in GRAM bank 2. With GMENU in bank 2, both GMENU and Funnelweb seem to work properly.

I don't like GMENU's white on light blue default colors. I prefer white on dark blue. To make this change use a sector editor and search both of GMENU's disk files in hex for >F5. Change this to F4. There are two F5's that should be changed, one for the screen border and the other for the central text bearing part of the screen.

---THE PGRAM MEMORY EDITOR: This has the look and feel of the GramCracker memory editor, but it isn't quite as easy to use. It is, however, in the PGRAM's operating system and thus always available, unlike the Gramulator's memory editor which must be loaded in from disk.

The PGRAM documentation has all the necessary information needed to "turn on" the editor, but this information is scattered over several pages. To properly EXAMINE grom

memory, even if you don't intend to do any editing, it is necessary to turn on the editor. Otherwise the screen display of gram memory will be incorrect. Here is what you do. Select MEMORY EDITOR from the menu you get when you type CALL PGRAM from BASIC. Type FCTN/1 to enable you to set the "CRU bits". Type the PGRAM's CRU address, usually 1700. Then in the next field type "12" to change the CRU bits so that memory editing can proceed. THEN TYPE FCTN/1 AGAIN to exit the CRU bit edit mode. This is the confusing part. If you type FCTN/9 (back) you will also exit the CRU bit edit mode but the CRU bits will not be changed and you will not be able to examine or edit memory.

#### ----- THE PGRAM CLOCK

This battery backed clock shows the day of the week, month, year, hour (only in 24 hour format), minutes and seconds. There is no provision in any of the various 99/4A disk controllers for automatic time/date stamping files, but there are some specific applications that can use the PGRAM clock.

From either BASIC you can get an on screen display of the time by typing CALL PTIME to set the clock or CALL PGRAM to access the PGRAM's loader/editor. Neither of these gives a clean exit back to BASIC. You can also, from within either BASIC (either in command mode or from within a running BASIC program), display the clock information or set the clock in the same way you would with a CorComp clock or the MPB clock. In these cases you remain in the BASIC environment. Everything is explained in the PGRAM user guide.

The following software will make direct use of the PGRAM clock to display the correct time and/or date. This software is all public domain except for BOOT (which is fairware) and is all available in the Lima User Group library.

--REMIND ME will, upon booting with a PGRAM clock in the computer, correctly show the correct time, month, and date, and place the cursor on the correct day of the displayed month. To have all this happen, it is necessary for the user to use a sector editor, search the single REMIND-ME file in ASCII for the text "CLOCK", and use the space bar to cover over the word CLOCK with blanks.

--BOOT will display the correct time and date on screen if a PGRAM clock is in the computer. It may be necessary to space over CLOCK in BOOT as described above for this to happen.

--Mel Nomina's CHECKBOOK WRITER will automatically put the correct date on your checks if you remove some REM statements.

--Harold Hoyt has written a program that will display the current date and time, catalog a disk, and optionally time/date stamp any DVBO text file on the disk.

--Harold Hoyt has also written an extended basic program that will put a time/date display at the top of the screen and then erase itself, leaving the time/date display. This will remain on display through the running of any extended basic program and even if NEW is typed.

#### CONCLUSIONS:

There are advantages and disadvantages to using a PGRAM as opposed to a GramCracker or Gramulator. For me, the most important advantage is the stability of extended basic and the fact that I may never have to use my console's cartridge port again. I appreciate never having extended basic crash. Since I have a specially modified 99/4A console (modified for use with an AVPC card and with internal speech) I would hate to have to switch to a different console because of an increasingly unreliable cartridge port.

/////////  
Jack's part

I just received the December newsletter, and noted that you went home with a P-Gram+. Well, I also got one from Bud at Chicago. Three of us came together to Chicago, and two of us went home with a P-Gram+, so I am looking forward to your comments in a future newsletter.

After getting my P-Gram+ up and running, I installed the GUNS system (the GMENU system mentioned in Charlie's part above). This is a super program, although it partly duplicates the multiple BOOT system I have set up on my Hard Drive. I do not have a RAM disk (yet), so having Extended Basic, Editor/Assembler, Super Extended Basic, Debugger, BN1000, DM-3, Boot, and who knows how many others I will find possible to put on the P-Gram+. All these available at RAM-disk speed. Fantastic.

I just finished a letter to Bud, telling him how pleased I am with thr P-Gram+. I think he should promote the saving of wear on the GROM port. Mine hardly gets used at all any more. No trouble with compatability with my HFDC, so this combination rates an A+.

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PGRAM kit \$150. PGRAM+ kit \$200. Clock \$20.  
Manufacturer assembly \$30. Available from Bud Mills  
Services, 166 Dartmouth Dr., Toledo OH 43614. Voice phone  
419-385-5946.

\*\*\*DONE\*\*

#### GRAM DEVICES FOR SALE

Gramulator ... \$140  
Gram Cracker.. \$120

Contact Eunice Spooner evenings at 207-465-3247

\*\*\*DONE\*\*



On the other hand, you can have your XBasic program POKE your code directly into memory with CALL LOAD statements. While this method is no easier to read as a program, you do have the advantage of being able to EDIT the program at will, adding more program structure as needed. The CHECK program, used with CHECKSUM by just about everybody is written this way.

CALL LOAD POKEing is fast, up to about 12 sectors worth of program. For larger programs, Imbedded code runs noticeably faster, since imbedded code doesn't have to be handled by the XBasic interpreter.

If you are using the K7 clock utility as a stand alone routine, you may want to erase it after it has done it's job of LOADING and LINKing the routine. Then you can type and run other XBasic programs with the clock continuously running, without having to type NEW. Any XBasic program may be made self erasing by activating line 32767 by typing 32767, <fct>X and <fctn>1 (DElete) to erase the !REMark. With 32767 an active program line, SAVE the program before running, because after the program is run, it will be gone!

The XBasic program resulting may be called LOAD to DISPLAY a clock line at the top of the screen upon entry to XBasic. You could configure funnelweb to RUN the program on EXIT from FW to XBasic. With the erase option active, you start out with an empty program area and a continuous clock display.

If you choose not to erase the program, MERGE it with the simplest disk directory program and have the directory program append the current time and date to all or selected DV files. The program DT/STAMP is included on this disk to accomplish this end. In the future, This might be better accomplished at the assembly level. How about parsing the BSKU file comments and optionally write the time/date to them?

\*\*\*DONE\*\*\*

"LF <enter>, 0 1 1 CLOCK"  
a TI Writer hint by Charles Good  
Lima Ohio User Group

3,11/06/91,18:59:52

I think I read about this sort of thing in a newsletter somewhere, but I forgot the reference and had to rediscover this trick from scratch.

From the Funnelweb or TIW editor you can time/date stamp the first line of any new or existing text file with this command if you have a PGRAM card with clock or a triple tech clock. This time/date information will produce a display like that at the beginning of the text of this article. What you do is load a file called CLOCK without specifying a drive number by typing LF <enter>, and then typing "0 1 1 CLOCK" complete with spaces after the "0" and after each "1". This

will put the time/date information in the first line of any text file in the text buffer. If you want to put this information after a particular line other than before the first line of an existing text file type LF <enter> and then "X 1 1 CLOCK" where X is the line number after which you want the time/date information displayed.

If you just type LF <ENTER> and then the file name CLOCK without the "0 1 1", the computer will appear to lock up until the entire text buffer fills with time/date statements.

The time/date numbers at the beginning of this article have the following meanings:

- 3= Wednesday, the fourth day of the week (0 = Sunday).
- 11/06/91 = the date, November 6, 1991.
- 18:59:52 = the time in 24 hours, minutes, and seconds.

You can then save your text file to disk for later printing or modification complete with a built in record of the last time the text file was modified. If you put a period immediately in front of the time/date numbers before saving to disk, then you can print your text through the FORMATTER and the time/date information will not be part of the hardcopy. You can also load your text file back into the EDITOR's text buffer, delete the line with the time/date stamp, and PF directly from the EDITOR without printing the time/date information.

\*\*\*DONE\*\*\*

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**AN UNDOCUMENTED "PHONE LIST" FEATURE OF REMIND-ME**  
 discovered by Charles Good  
 Lima Ohio User Group

I reviewed this superb appointment calendar program in the Nov. 1991 issue of the Lima newsletter. In that review I mentioned the notepad feature, which according to the REMIND-ME doc is for use only within a single session of REMIND-ME. The doc states that the contents of the notepad (a text screen 12 lines by 38 columns) are NOT saved when you save a month's data, and that you lose the notepad's contents when you exit REMIND-ME.

**NOT TRUE!** The contents of the notepad ARE SAVED AS DAY ZERO when a month of data is saved. The previously saved notepad contents become immediately available at a press of the space bar each time you boot the current month at REMIND-ME's power up.

I use my REMIND-ME notepad to store commonly used phone numbers. For example, one of my children is in a Campfire Club. I mark my REMIND-ME calendar with the dates of each regular meeting. But the phone number of the home where the meetings occur is always the same, as is the phone number of the other parent who takes turns with me driving kids from my neighborhood to these meetings. I keep these phone numbers on my REMIND-ME notepad and the meeting dates on my REMIND-ME calendars so I can quickly switch back and forth between these data. Yes, I have a name/address/phone database, but it is slow to load all its data into memory. The neat thing about REMIND-ME is that it boots FAST from a cold start off of a hardisk. It takes me 15 seconds from a cold start to turn on my 99/4A and bring up my REMIND-ME notepad full of phone numbers.

**\*\*\*DONE\*\*\***

**DOCUMENTATION ADDENDUM**

In addition to the books, magazines, user guides, etc. listed in the Dec. 1991 issue of BB&P, the following are available for examination by members of the Lima Ohio User Group:

- BASIC TIPS by Amlist. 1983 book claims to be "comprehensive programming instructions for the TI99/4A".
- THE TEXAS INSTRUMENTS USER'S ENCYCLOPEDIA (TI/2,4,4A). 1983 book by Gary Phillips and David Reese.
- OKIDATA MICROLINE 83A PRINTER USER GUIDE.
- THE TEXAS INSTRUMENTS TMS9900, TMS 9980, AND TMS9940 PRODUCTS. Chapter 18 of a book by Adam Osborne & Associates that gives lots of detailed technical information about these chips and their assembly instruction sets.
- C'99 \$4.0 USER'S MANUAL. 01/01/88 by Clint Pulley.
- LUG NEWSLETTER vol 2 #4 July 10 1982.
- TEXAS INSTRUMENTS TERMINAL EMULATOR PROTOCOL MANUAL. Nov 18 1981.

**A DAY AT THE RACE TRACK WITH A CC40**

On page 111 of the Jan. 1990 catalog of ADVANCED COMPUTER PRODUCTS INC. of 1310 E. Edinger, Santa Ana California 92705 is a picture of a CC40. But the computer is labeled "PDS SPORTS" above the usual "Texas Instruments Compact Computer 40" that is also shown engraved on the computer. The display on the computer's LED says "THE SPORTS JUDGE". Apparently users were supposed to take the PDS SPORTS computer to the racetrack or to a sporting event and enter data for up to the minute handicapping and statistics. Software for the PDS SPORTS computer is apparently offered on cartridges, and most interesting of all "Data disks" of past seasons or current season-to-date are advertised. Does the PDS SPORTS system include a CC40 AND a Mechatronic Quickdisk disk drive, or are the disks in PC format containing data that has to be manually entered into the PDS SPORTS computer? The text of the catalog does not make this clear. ADVANCED COMPUTER PRODUCTS INC is a surplus reseller. I phoned ACP in late November 1991 and was told they no longer had this product available. The person I talked to could give me no information. Here is the text of the 1/90 ACP catalog:

**"Thoroughbred Handicapping System**

"Handicap the entire day's card in less than one hour using the software system designed and used by the Pro's. approved and verified by the American association of documented Sports Services. As past performances and the day's relevant information are entered the system automatically applies proven formulas for Class, Pace, Speed, Distance, Recency, Track Category, Trainer, Jockey, or harness Driver. ACP of course makes no guarantee on these programs. All Horse Racing packages include (3) programs: Horse program + Trainer & Jockey.

- Package #1 (TB-JD-TR)
- Thoroughbred Horse Racing.....\$179
- Thoroughbred Handicapping System....\$125
- Package #2 (HA-DR-TR)
- Harness Horse Racing.....\$179
- Harness Horse handicapping System....\$125
- Package #3 (QH-JO-TR)
- Quarter Horse Racing.....\$179
- Quarter Horse Handicapping System....\$125

**"PDS TRAINER JOCKEY STATISTICS PROGRAMS**

- Trainer Statistics System.....\$39.95
- Jockey Statistics System.....\$39.95
- Harness Stastics System.....\$39.95

**"PDS FOOTBALL HANDICAPPING & STATISTICS**

- Football Handicapping & Statistics...\$69.95
- NFL data Disks.....\$19.95
- Past seasons or season to date

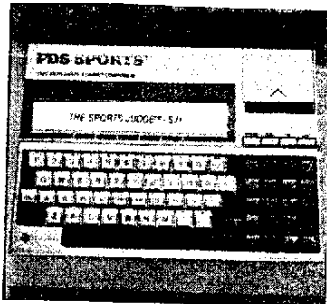
**"PDS BASEBALL/BASKETBALL HANDICAPPING & STATISTICS**

- Baseball Handicapping & Statistics...\$69.95

Baseball Data Disks.....\$19.95  
Past seasons or Season to date

Basketball Handicapping & Statistics.\$69.95  
Basketball Data Disks.....\$19.95  
Past seasons or season to date

\*PDS LOTTO PLAYER  
Computer LOTTO player.....Call



PDS Sports  
Thoroughbred Handicapping System

\*\*DONE\*\*

Review of "DISK O' PYRATES"  
By: Andy Frueh, Lisa OG

Ken Gilliland strikes again, or so it would seem, with *Avogard's* offering "Disk O' Pyrates." For the sake of common interest, no, that is not actually a mis-spelling. Nor is it meant to deter people from thinking it is a disk of pirated software. The reason for the spelling "PYRATES" is that the author chose to spell it as it would've been in old English times.

Some of you may remember "Disk of Dinosaurs" also by Gilliland. It is a two disk set full of dinosaur pictures and great animation sequences. There was also a "hunting licence", prehistoric backdrops and a dinosaur font. All in all, it was definately worth the \$9.95 price and was well advertised.

Not to say that "Pirates" is no good. Far from it. You get four disks for \$9.95 as well. However, I feel that the advertising may be a tad misleading. Definately if all you want is pictures, this is THE package for you, otherwise, I suggest actually looking at a copy before you buy it.

"OK Frueh, what's the problem THIS time?" Well, before I turn this into a negative review, let me state what I love about this package. First of all, the artwork is superb. All of it is claimed to be hand drawn. That surprised me. It's so good it LOOKS like it was digitized. Some of it may

be too dark or contain too much black to print into a small sized picture, so you may want to balloon the pictures up a tad. Included are several "Pirates in action" type scenes, different flags of different captains, a neat diagram of a Twenty gun ship (I assume that it was the standard pirate vessal), and also includes some neat borders and an old English font. There are also several smaller instances, and a converter program that takes the instances and turns them into a runnable Extended BASIC program.

How about the animation? Well there are two of them. One features a crewman who is left to die on an island, the other is just a typical wild rum drinking, gun shooting pirate. I think the man on the island is done up a little better, but both are incredible. There are more realistic than the cartoon style of "Dinosaurs", but again are very well done. The fact that these can be done on a machine first thought of in around 1978 and with 32K of memory is incredible!

Sore points? One of my biggest beefs is with the manual. Frankly, it was a little thin, but then again, extensive documentation isn't necessary. However, there is one page where the Zerox machine didn't reproduce the first column of letters. It is hard to follow a manual when you can't see the first character of every line.

Also, the advertising suggests I will be getting a "veritable cornucopia of...Pirate games, Pirate music..." Wrong. You get one game and one song. Hardly a cornucopia. The music is "Yo Ho (A Pirate's Life for Me)" by Xavier Atencio and George Burns. Authentic pirate music? But it IS GOOD music. I would've liked another song. The only sore point with the music itself is that I couldn't follow it very well to "sing along." Words are printed on the screen, but often not in rythm to the music.

The game is a rehash of an old BASIC (I think) game, "Treasure Island." The game as it was first released wasn't really great. Ken Gilliland did a good job at improving it, but it's still the same game. Again, one game is not a cornucopia. It's not even assembly.

So does this reviewer think that this is worth the price? How can any four disk package of anything not be worth \$9.95? The artwork is purely wonderful. True, the other aspects of the package are a little skimpy, but worth the price you pay. Of course, hardcore Pirate afficianados will eat this up. From an entertainment standpoint, the value is shaky. I was disappointed with the "game" and "music". From an education standpoint, it has got to be the best (maybe the only) source of Pirate information I have ever seen on the TI, or any other computer. The 100% accurate, factual information makes good reading, and the inclusion of the "Pirates Code" is neat. "Disk O' Pyrates" is just one of those cases where the advertising isn't false, but a little misleading. If you know in advance what you are getting, this package really won't disappoint you.

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**A Second Opinion of DISK O' PYRATES**  
by Charles Good: Lima UG.

Andy Frueh's main complaints about DISK O' PYRATES relate to Asgard's promotional advertising and the documentation that comes with the disks. Since Andy wrote his review, Ken Billiland has been selling his software under the name **NOTUNG SOFTWARE**. Asgard is no longer in the picture, nor are Asgard's past advertising claims. I showed the latest documentation to Andy in November 1991 and he was really impressed.

I think DISK O' PYRATES is one of the best bargains in the TI software marketplace. Look what you get:

- 4 disks, FULL of stuff!
- 8 pirate pictures in TI Artist format.
- A couple of TIA fonts.
- A reasonably entertaining game.
- A pirate song.
- Some VERY imaginative animated graphic sequences containing additional TIA pictures.
- A REALLY USEFUL software utility: an instance converter that transforms any instance into a mergable XD subroutine that can display the instance on screen from within an XD program. Our user group's software library has lots of disks full of instances. However if you don't own TI ARTIST there is little you can do with all this free artwork, UNLESS you have the DISK O' PYRATES instance converter.

--A scholarly on screen textbook about pirates. That's right, I said "scholarly". The author has done a lot of searching in libraries to dig up the history of pirates in general and the specific pirates that are described in the text files that are part of DISK OF PYRATES. The extensive on screen text segments are interesting, informative, and sometimes gruesome. All library sources are cited in the documentation.

DISK OF PYRATES is a labor of love and a 100% TI99/4A product. It is a labor of love in the sense that Ken did a superb job researching his subject. I am an academic myself, and I recognize good scholarship. It is a 100% 99/4A product in the sense that there are no other computers involved anywhere in the creation of or production of the DISK OF PYRATES disks and documentation booklet. All the artwork is hand drawn by Ken, not digitized from other sources. Converting Ken's art into TI disk formats and the composition and printing of the documentation booklet (which is excellent) was all done with the TI software listed at the end of the documentation booklet.

Where else can you get so much for just \$10 + shipping?

Notung Software  
7647 McGroarty St.  
Tujunga, CA 91042

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**Game Review: SCUD Busters**  
By: Andy Frueh, Lima UG

This is a review of a game that will be released at the Chicago TI fair in 1991. It was produced by Harrison software, better known for their fantastic music and new word processor. I have mentioned before that their music programs are nothing but exceptional.

With the success of the Americans in the Persian Gulf, it isn't surprising that a game has come along to glorify our victory. Naturally, you expect this game to be full of flash. Unfortunately, this game fell a little short of my expectations.

The documentation is well written and makes the game very easy to understand and play. The music in the introduction is excellent. But that doesn't make for an engrossing game.

The scenario sounds fascinating. You are in the Saudi area. Saddam is hurling SCUD missiles at you. Your only defense are your Patriot missiles of which you have an unlimited supply. The catch is, you can only fire one round per SCUD attack.

My biggest complaint is the graphics. Frankly, they aren't great. The SCUDs are represented by a black lopsided rectangle. Your "sights" are a single white dot, which is hard to see against the stars in the background. The screen is composed of a blue field with white stars. That's it. When you hit a SCUD or it falls to the ground, you hear an explosion and see a little orange and yellow explosion.

For me to be really interested in a game, graphics are a must. They aren't really present here. My second big criteria is either exciting game play or a really original concept. Even a twist on an old theme is nice. But there isn't really anything new. No objects to protect. A SCUD falls and explodes if it hits the ground. You can't see or tell what is damaged. True, you're in a desert, but can't I at least get a few tents?

As far as the style of play, it is very similar to the Missile Command or Barrage. Except Barrage for the TI is, in this reviewer's opinion, the best of the games. This game seems to be more akin to the older Assembly games, not like what people are developing now (such as Karate and Rock Runner by Asgard). \$14.95 is probably too much for a game which has been done before, and better as well. This is unfortunate for Harrison Software, which has such an excellent reputation for quality music programs.

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