

TANDY

The CoCo Column

by Dan Robins

In the April 1988 issue of *Computer Shopper*, we prompted you to respond to a series of questions. Referred to as The CoCo Poll, questions about your system setup and favorite software were asked, and quite a few of you responded. We'll take a look at the results in this month's column. Keep in mind that this is not a scientific poll. Rather, an opportunity to hear what folks are thinking.

System Setups

The first question we asked was "What is your system setup?" A pret-

ty simple question with some interesting results. Not everyone owns a CoCo 3 at the moment, as 45% of those who responded own either a CoCo 1 or 2. According to responses, 10% own a CoCo 1, 35% own a CoCo 2, 25% own a CoCo 3 with 128k memory, and a surprising 30% own a CoCo 3 with 512k memory.

The usage of disk drives is much more than I had anticipated, as 75% of those who wrote to *Computer Shopper* had at least one disk drive with their system. Of the other 25%, 10% had cassette only systems, and 15% had neither disk or cassette. 20% of those responding had both cassette and disk drives in-

cluded with their setup. Interestingly enough, 86% of those with disk drive systems use RSDOS as their DOS operating system. To my surprise, 10% of the systems have a hard drive now in use. Seems they're getting popular!

For compatibility with new releases of OS9 Level 2 Multi-View type software, 30% have joysticks with their system, and 15% use a mouse. A popular item, the X-Pad, reported 15% usage by the respondents of the poll.

Printers seem to be in the hands of many, as 55% have at least one in use. 50% of those who responded also have a modem, and 20% owned Tandy's Speech/Sound pack.

The Color Computer 3 has gained in popularity, as 55% of our respondents report owning one. The CoCo 3's graphics, and ability to upgrade to 512K, and the power of OS9 Level 2, all combine for a pretty sleek machine. The lower costs of disk drives aid in allowing many new comers the chance to own a disk-based system.

Programs And OS's

The question read "What is your favorite program, and which operating system does it run under?" The responses not only included their favorite program, but in many cases their favorite operating system, and all reported which ones they used.

Although OS9's popularity has grown in the past several years, our poll shows that 50% still use RSDOS only! 30% said that they use a mixture of RSDOS and OS9, and 20% said they only used

the OS9 operating system. Of those who use OS9, 55% said they use Level 2 only, 40% reported they use both Level 1 and 2, and 5% were exclusive OS9 Level 1 users.

The most popular pieces of software seem to be TeleWriter (64 and 128), a word processor that has been popular throughout the CoCo's history, and a public domain terminal written by Greg Miller, Greg-E-Term. XCOM9 and MikeyTerm are also deemed as favorable terminal packages. 15% of the users say they use a product of the VIP series. CoCo Max 3 seems to be the favorite graphics program around today, according to our poll.

Other programs receiving honorable mention are Dynastar, Orchestra-90, Deskmate, KDSK-3, Word Power 3.1, and F-16 Assault.

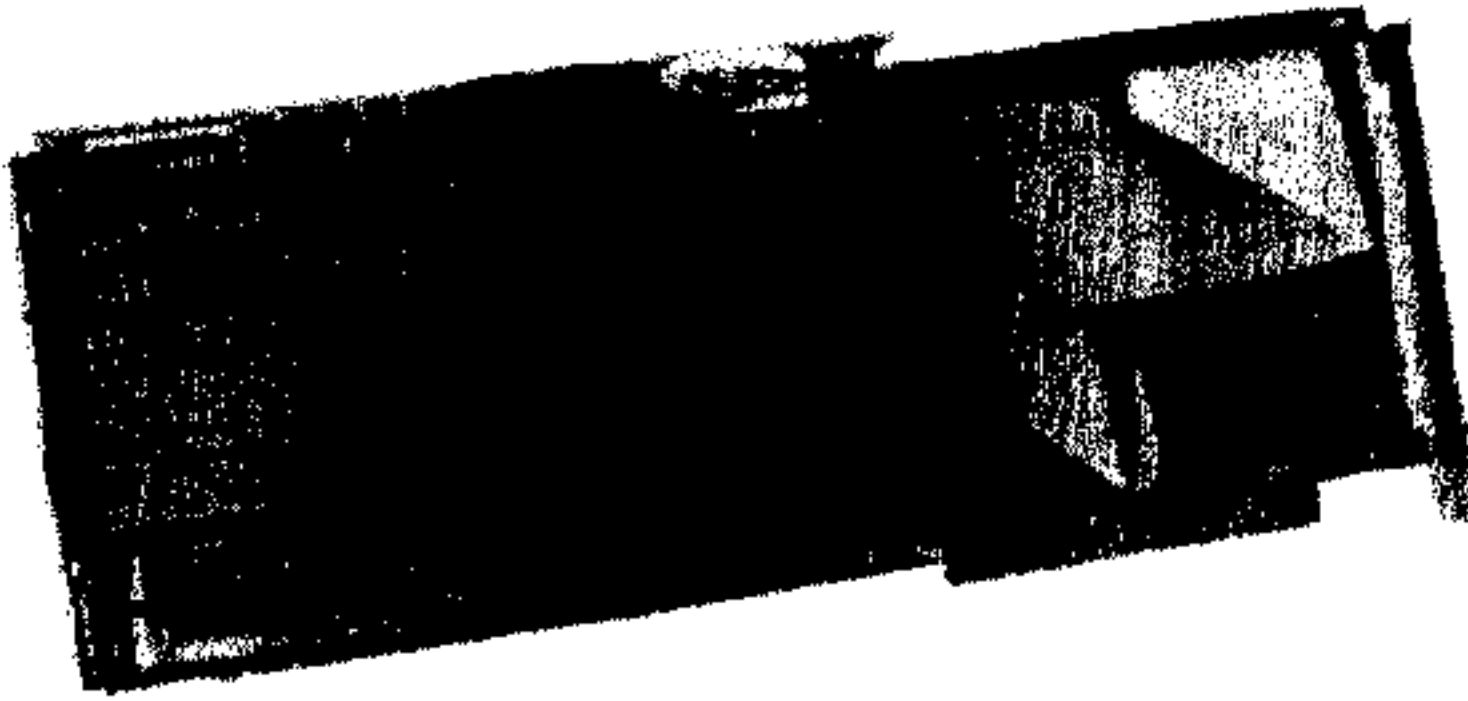
According to responses in this poll, word processing and terminal programs were mentioned the most. An indicator that the computer is not only used for fun and games, but also on a more serious side, too. Level 2 OS9 software seems to have a good market, but many users are frustrated that no real series of "whiz-bang" programs have come out. One thing for certain, the CoCo user is always looking for something better!

Software Desires

Our third question of the CoCo poll was "If you could have any program made especially for you, what would it be?" We received an earfull!

continued on page 236

Call our Professionals Our 11th Year in the Tandy Market Place



Mega Haus specializes in hard drive upgrades for MS/DOS computers. Below you will find our most asked for products. We will be more than happy to quote you prices on faster, external, primary and secondary drive systems. For example, 120 & 206 Megabyte systems.

INTERNAL HARD DRIVES

For Tandy 1000, 1000A, 1000SX, 1000TX, 3000HL

(Includes 8 bit controller, and cables)

20 Meg Formatted	\$289.
32 Meg Formatted	\$329.
40 Meg Formatted	\$399.
48 Meg Formatted	\$449.
64 Meg Formatted	\$559.
96 Meg Formatted	\$1059.

For Tandy 1200, or IBM PC/XT.

(Includes 16 bit controller, and cables)

20 Meg Formatted	\$269.
30 Meg Formatted	\$299.
40 Meg Formatted	\$369.
48 Meg Formatted	\$429.
64 Meg Formatted	\$529.
96 Meg Formatted	\$999.

For Tandy 3000HL, 3000, 4000, or IBM AT Compatible

(Includes 16 bit controller and cables)

32 Meg Formatted	\$429.
48 Meg Formatted	\$549.
64 Meg Formatted	\$649.
96 Meg Formatted	\$1159.

FLOPPY DISK DRIVES

3 1/2" 720K	\$119.
5 1/4" 360K	\$99.

HARD CARDS

For Tandy 1000, 1000A, 1000SX, 1000TX, or 3000HL

32 Meg Formatted	\$390.
48 Meg Formatted	\$669.
64 Meg Formatted	\$749.

For IBM PC/XT Compatibles and Tandy 1200

32 Meg Formatted	\$325.
48 Meg Formatted	\$499.
64 Meg Formatted	\$729.

For Tandy 3000HL, 3000, 4000, or IBM AT Compatible

(16 bit Hard Card)

32 Meg Formatted	\$699.
48 Meg Formatted	\$849.
64 Meg Formatted	\$999.

EXTERNAL HARD DRIVES FOR TANDY 1000EX and 1000HX

(Includes hard drive controller. Tandy memory card required)

21 Meg Formatted	\$479.
32 Meg Formatted	\$589.
40 Meg Formatted	\$669.
48 Meg Formatted	\$749.
64 Meg Formatted	\$849.
96 Meg Formatted	\$1349.

External Floppy Disk Drives

For Tandy 1000EX, or 1000HX

3 1/2" 720K	\$159.
5 1/4" 360K	\$159.

MegaHaus**1-800-426-0560**

Order Information: Call us to place your order via VISA, MASTERCARD, DISCOVER, AMERICAN EXPRESS, WIRE TRANSFER, or C.O.D. Purchase orders are accepted from government agencies. Orders placed with personal checks are held for check clearance. All packages are shipped via UPS. Tandy/Radio Shack are trademarks of Tandy Corporation, IBM is a trademark of International Business Machines Corporation. Please send all mail to MegaHaus, P.O. Box 517, Kemah, Texas 77565-0517. **Warranty:** One year minimum warranty on all products sold, ask for details. **Refund policy:** If you're not happy with our products for any reason, return it to us insured within 30 days from our ship date for a 100% refund less shipping cost.

TEXAS INSTRUMENTS

TI Forum

by Ron Albright and Jonathan Zittrain

Ron Leads Off

Finally!

Well, it has finally happened. The TI software industry has joined the world of the "big-time" databases. With the release of "TI-Base" from Texaments (53 Center Street, Patchogue, New York 11772; (516) 475-3480), TI users now have a full-featured dBase act-alike.

TI-Base requires Extended Basic, Editor/Assembler, or Mini-Memory, 32K memory expansion, and at least one disk drive. The package comes as two disks—a program disk, and a tutorial disk, a 36 page manual and a convenient keyboard overlay strip to label active keys. The software is not protected.

If you have ever run dBase II at work, you will be astounded at how close the author of TI-Base has come to that database's functions and interface. It is a tribute to the ingenuity of the designer/programmer that he was able to get this close to dBII with the memory constraints imposed by the TI. While those programming for machines with huge expanses of RAM to work with have fallen prey to inefficient, meandering code, the TI programmers still know how to tweak out every possible byte. This is a prime (and amaz-

ing) example of such tight programming.

Once loaded, TI-Base gives you the classic "dot" prompt of dBII. Creating a database is a snap. Just type "CREATE DSKx.DATABASE," where "x" is the drive number that you want to use for the database, and "DATABASE" is the name you choose. Once that is entered, you are presented with a display to define your database structure. Each database may have up to 17 fields, up to 255 characters/field, and 16129 records per database (if disk space permits). Fields may be specified as character, numeric, or date field types. Once the structure of the database is defined, hit "Execute" (Function 8), and the data is stored and you are asked if you would like to enter data at this time. You may then enter data. If you have previously created a database, you would simply enter "USE DSKx.DATABASE" at the dot prompt. Once a database is opened, you can "APPEND" (add records), "EDIT" an existing record, or "DELETE" individual records. When a record is deleted, it is marked. It is not really "gone," it just is not an active record. If you wish, you can "RECALL" that record, or completely remove it (forever) with the

continued on page 241

TEXAS INSTRUMENTS

TI Forum continued from page 230

"PACK" command. "PACK" erases all marked records and re-indexes the database. The database can be sorted on any field in a descending order format.

TI-Base supports a full range of mathematical operators. From simple math (add, subtract, multiply, divide), to algebraic (LOG, SQR, SIN, COS, TAN), to Boolean (less than, greater than, "not," "and," "or," etc.). Equations may contain variables and these variables can be manipulated and replaced at any time.

If you are impressed so far, hang onto your hats. TI-Base comes with a complete command language which allows you to write your own database functions and procedures. They mimic those of dBase quite closely. TI-Base even comes with its own editor to allow you to write these command files from within TI-Base, or you can use the editor available with the Editor/Assembler module to write your program files. Each program may be up to 150 lines or so. That is not really limiting as you can "nest" (one program can call another) to compose complex database programs. The 45 commands available are those familiar to dBase fans. "WHILE," "DO," "CASE," "IF," "FIND," etc. Some are different. For example, TI-Base uses WRITE 5,5,

"First Name" to display the phrase "First Name" at screen line 5, row 5. dBase would use "@ 5,5 SAY "First Name." You can write some truly complex database functions with the commands available. To execute these command files, just enter "DO filename," at the dot prompt where "filename" is the name of your program. According to the flyer that came from Texas Instruments, there will be "a public domain library of database applications and routines written using the TI-Base command language."

Oh, one last thing. Up to 5 separate databases can be opened at once. Data can be exchanged and manipulated between current records of any of the databases open at one time. While not truly "relational," (and I am not sure I even know what that is anymore) TI-Base comes close. As close as most applications will ever need.

This package looks super. There are some limitations. The 17 fields per record may be limiting to some applications. The print output is somewhat limited (for example, I could not decipher how to output data to tabbed printer positions). The manual is a bit skimpy for a program this powerful. And the sort functions is limited to one form (ascending). A personal peeve is that there is no way that I could find

to import data into TI-Base. With the current trend toward exchanging information between various formats and computers, it would have been truly a major breakthrough for TI-Base to be able to accept a standard comma delimited or other ASCII data file into a formed database. But this is not so much a requirement as it is a personal desire.

The price of this beauty is a remarkable \$24.95 (plus \$2.50 shipping). I have to believe this is one of the greatest bargains of recent TI memory. This database is one of a kind for the TI market and provides many of the qualities sought for so long by the 99/4A user. I commend Texas Instruments for producing such a superb and reasonably priced product.

User Of The Year

I have to tell you about this lady. Her name is Eunice Spooner. She sent me a newspaper clipping about her efforts in the Oakland, Maine TI Computer Club. She was recently acknowledged by the Technology in Maine Schools Committee for her work with the Atwood-Tapley Computer Club with a special award. Ms. Spooner directs the club which teaches computer literacy to children in the kindergarten to 6th grade age groups. Currently, the club has 30 members and meets every Monday night at the Atwood School. The club is remarkable in that it uses strictly the TI 99/4A as its teaching tools. Eunice has gathered the computers from across the state and has used the machines to demonstrate telecom-

munications as well as programs written by the club members. I wish I could reproduce the picture that was included with the article. It shows attentive youngsters huddled about TI computers learning and entirely engrossed with the 99/4A. It is an amazing project for sure. While she didn't ask, if you have a duplicate educational module or program that this age group might be interested in, send it along. Ms. Spooner, strangely enough, is also the winner of the giveaway this month. She will receive a copy of the *Orphan's Survival Handbook*, a stack of newsletters and anything else I can dig up. An amazing woman, let's give her some support in her efforts to bring up an entire generation of new TI fans. Ms. Spooner's address is RFD 1, Box 3720 Webb Road, Waterville, Maine 04901.

Tooting My Own

I have to mention my new book. *The Communicating Computer (The Beginner, Novice, Non-Expert—You can do it too!—Guide to Telecommunications)* is a 120 page, soft-bound introduction to using computers as communication and information-retrieval tools. It is not a hackers guide or for the experienced modem user. It is written entirely for the computer user who has read and wondered about using a computer and a modem but has shied away from what might appear at first glance to be a complicated technology. While not written specifically for the TI user (it is a "generic" book in every sense of the

continued on page 372

TIMEX/SINCLAIR

Sinclair Survival continued from page 240

writing and saving. The power of the computer is to take information from a user, do certain operations upon that data, and give the user the results of those operations. Now we will have a look at some of the commands which would accomplish a task.

While you are learning to write programs, it is a good idea to include messages or notes to yourself within the program so that you will later know what you have done and why. In order to do this, you have to let the computer know that the information in this line is for the programmer and not for the computer. The keyword we will use for this is REMARK. When this command is placed right after the line identifier, the computer will ignore the line entirely. When we write some sample programs in this series, we will make use of the REMARK command.

The following small program will demonstrate how the computer can be told to ask for information, take that information and operate on it, and present the user with the results of those operations.

10 REMARK—In order to produce a REMARK—line, all that is necessary is to type REM. The computer will provide the rest.

20 REMARK—This program will ask for two numbers and add them.

30 REMARK—First we will ask the user for a number which we will call "a"

```
40 INPUT "Enter a number":a
50 REMARK—Now we will ask for
another number which we will call "b"
60 INPUT "Enter another
number":b
```

```
70 REMARK—Now we will add
these numbers together and call the
result "c"
```

```
80 c = a + b
```

```
90 REMARK—Now we will print
the result on the screen
```

```
100 Print c
```

First of all you will notice that each line is numbered. This tells the computer in what order you want the instructions executed. The numbers we have selected are arbitrary, and could be 1,2,3,4,5,6,7,8,9,10 just as easily. We use these numbers so that if we edit the program and want to insert lines in between existing lines, we do not have to start renumbering our program. (More on line numbering in the next part of this series.)

Try running this program and see the results. Why did what happen take place? Which lines caused each step to happen? Try altering this program to see what you can do. Change the prompts and have the computer ask for numbers using different phrases. Don't forget to SAVE this program and any other variations you may create.

Next month we will continue on our exploration of SuperBASIC. ●

More Timex Sinclair on page 472

FREE CATALOG!!!

1-800-843-5084



PEOPLE'S CHOICE

Distributors of Public Domain & Shareware Programs
For IBM PCs and Compatibles

Connecting the public to public-domain programs

All disk volumes sell for \$3.75/each to give you
"More Bytes For The Buck"

What makes PEOPLE'S CHOICE different from the other
distributors of Public-Domain software?

1. Lower price (\$5 is too much!)
2. Fuller disks (We strive for <30 KBytes of empty disk space on most disks)
3. Our catalog which lists and describes every program contained on each disk volume.

PEOPLE'S CHOICE offers numerous disk volumes of

1. Utilities—disk, printer, memory, batch, keyboard, screen, CPU, and more
2. Languages—C, Pascal, LISP, BASIC, and more
3. Games—arcade, adventure, board, card, and more
4. Business—Accounts Receivable, General Ledger, time billing, and more
Finance—investment analysis, IRA's, taxes, mortgages, and more

Call PEOPLE'S CHOICE Toll-Free order line at
1-800-843-5084 and ask for a free catalog!
1-912-922-9226 (technical support)

P.O. Box 7087 Warner Robins, Ga 31096

Payment may be made with check or credit card.

Shipping is paid by customer and can be via UPS, Federal Express, or COD.

TI Forum
continued from page 241

word; it is about the process of modem communications, not computers themselves), I think it will be useful to anyone who is interested in getting started with a modem. I am quite proud of it. It is available from me for \$10. Satisfaction guaranteed or your money back. To order send check or money order or write for a descriptive flyer to Ron Albright, P.O. Box 12288, Columbus, GA 31907. I hope you like it. End of commercial.

From JZ's Desk
PBBS Debuts For 99/4A

The Paradigm bulletin board system

(PBBS), under development for over two years by TI notables Mike Kimble and Travis Watford, is now available as "fairware" for the TI-99/4A. The board offers some impressive features for both Sysop and user.

The program is actually an almost complete overhaul and rewriting of Scott Darling's (systems operator of GENIE's TI Roundtable) TIK bulletin board program. Kimble wrote the Extended BASIC portions, with Watford developing the assembly routines.

The extra features of the board are many. Users may select any line length to which all text will be automatically word wrapped. The program scans for interrupt characters after every

character that it sends, allowing for instantaneous recognition of commands to halt or pause output.

On the Sysop end, there are two screens which may be toggled back and forth: a 40-column duplicate of the ongoing session, and a 28-column informational screen for the Sysop. The Sysop's keyboard can also act exactly like the user's, allowing for the "walking" of new users through the board.

The board requires only a special cable on top of the normal TI telecommunications setup to operate properly (a RAMdisk is especially helpful for fast operation, though). The cable, in conjunction with an assembly routine adjusting and reading the DTR pin, allows the board to immediately disconnect

users and also immediately detect hangups without the use of clumsy modem command strings.

Log-in bulletins are keyed to the user's last log-in date, and will not redisplay after the user has viewed them past the posting date.

If the board's present state is not impressive enough, it's planned future certainly is. Watford is completing new assembly routines that may find application outside of PBBS, while Kimble is scrambling to rewrite the board to utilize them.

One routine, which will probably be marketed commercially as a separate package, greatly reduces loading and

continued on page 373

ST Game
continued from page 369

which rotates 360 degrees around it and 90 degrees above it, so it can double as ship's forward cannons and anti-aircraft guns. It also has a killer cruise missile launcher at its stern, with missiles that locate their targets through the aid of a camera attached to a rocket you can launch overhead.

The "look-and-feel" of Carrier Command, although original, somewhat resembles commanding the invasion of Grenada from a remote Casio pocket calculator. Commands are entered by pressing simulated gold plastic keys with the mouse pointer. Your main viewer displays one of the best-orchestrated three-dimensional perspectives in computer games. Your carrier has cameras all over it: at the bridge looking ahead, atop the laser turret looking in any direction, at the bow looking back, at the stern also looking back, at the starboard toward the plane launching pad, and at the port toward the hangar bay at stern. Whenever you launch a plane or amphibian, or whenever one returns home, the starboard and port cameras follow its movement, adding a graceful as well as dramatic touch to a game whose sound effects—full of static and "ping" noises—are no embellishment. Your vessel, from a plane or amphi-

bian looking back, looks less like an aircraft carrier than it does Jacques Cousteau's Calypso; more than once while orbiting it, I swore I could hear Rod Serling narration in the distance. Although the islands have a tendency to look like Bruce Artwick's childhood playroom, the scenery does give the game enough of a feeling of vastness that it doesn't feel like playing on a checkerboard. Surreal though it may be, there's just enough scenery in this game to suggest the presence of a world.

People who just like to watch games being played may find Carrier Command at times to be a real drag. During those times when the carrier is headed on autopilot to a far-off island, it doesn't appear to the observer that anything is really happening. Even the player may find herself suffering from the symptoms of D.F. Screen-flipping Syndrome: madly poking buttons, switching camera-views repeatedly, resetting the planes' autopilot trajectory by a fourth of a degree, during the "lull" periods of the game where relatively nothing's happening.

These lull periods are important to the strategic realism of the game. Unlike a "shoot-'em-up" like Starglider in which the level of outside threat adapts itself continually to your increasing skill level, Carrier Command makes effective use of dead silence, for a dramatic

effect that movie directors call "build up." There's plenty of build up when the enemy carrier is miles away from you, and especially when your stockpile transfer ships haven't arrived at the designated island. Lulls provide a necessary contrast to those periods of high activity when the maps and radar screens resemble Chicago O'Hare Airport on a Friday afternoon, and there are more projectiles in the air than were ever stockpiled on Grenada.

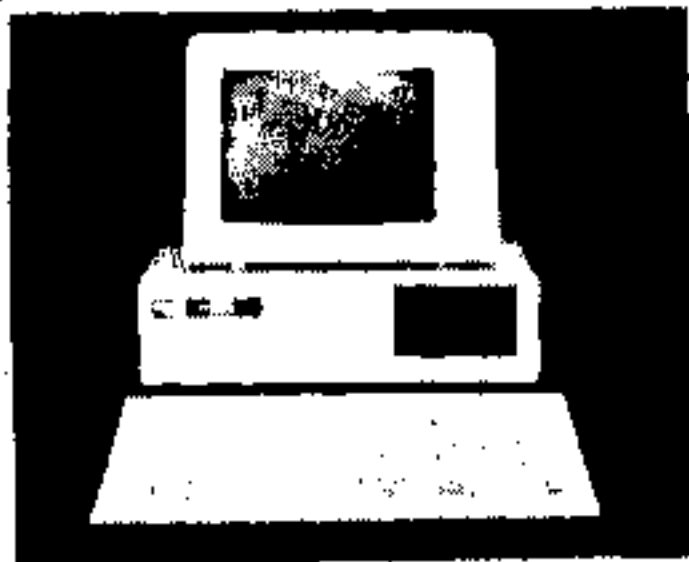
For those of you who aren't that fond of dead silence, Carrier Command makes a historic breakthrough: It is the first computer game with its own Dolby stereo soundtrack. I'm no music critic, so I won't pass judgement on the theme song; but those of you who prefer a playing environment more akin to the movie *Top Gun* will welcome this free cassette tape—as well as the opportunity to turn the tape over during the game's lull periods. You get the game, the tape, the Carrier Command window sticker, and a subscription form for *Computer Shopper* (no kidding!) all for the incredible low price mentioned at the end of this article.

Carrier Command can be won without ever confronting the enemy carrier face-to-face. If you can exhaust it by developing defense islands at strategic locations, and by leading it into traps where you can cut off his supply routes.

the Black Brick of the Flat Blue Seas can be stopped dead in its tracks. Until you (read: I) ever grow adept enough to achieve such a feat, the Brick will have a tendency to follow behind you, taking over the islands you just conquered. The Brick may have the best defenses since the Scopes monkey trial; yet it is extremely shy, and will probably never venture to an island where your carrier is located. It actually overestimates your capability to defeat it.

Be forewarned: Carrier Command is a frustrating, aggravating game, and is recommended only for those who enjoy or require frustration and aggravation in their lives. Players should be happily-married if at all, should not be air traffic controllers, and at movie-watching parties bring copies of such favorites as *Midway*, *Tora! Tora! Tora!*, and *Thirty Seconds Over Tokyo*. Carrier Command is for the strategic/tactical game player what *Dungeon-Master* is for the adventurer gamer—not an escape from real dangers but an indulgence in new ones.

Carrier Command, created by Clare Edgeley, Ricardo Pinto, Ian Oliver, Graeme Baird, et al., may be obtained from Realtime Games Software Limited, for Rainbird Software, 74 New Oxford St., London WC1A 1PS UK. The price is \$39.95.

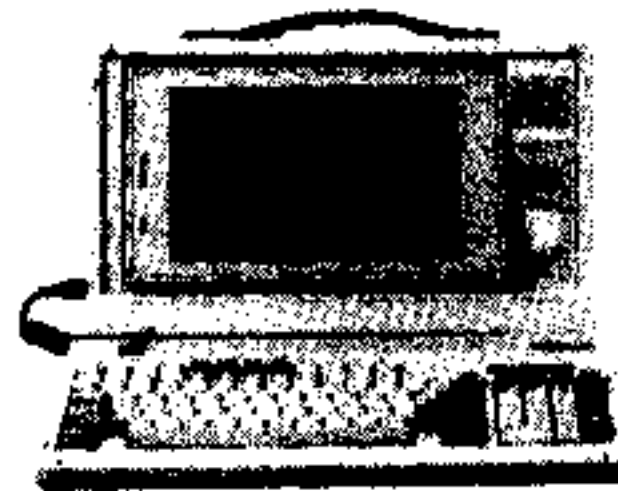


IMC 8088 TURBO SYSTEM

IMC-1000..... \$288
Turbo 10/4.77 MHZ, legal BIOS 256 K on board, 640 K Expandable. 150W power supply, 288 Alike case.

* Bare bone Assembled * FCC Class B Approval

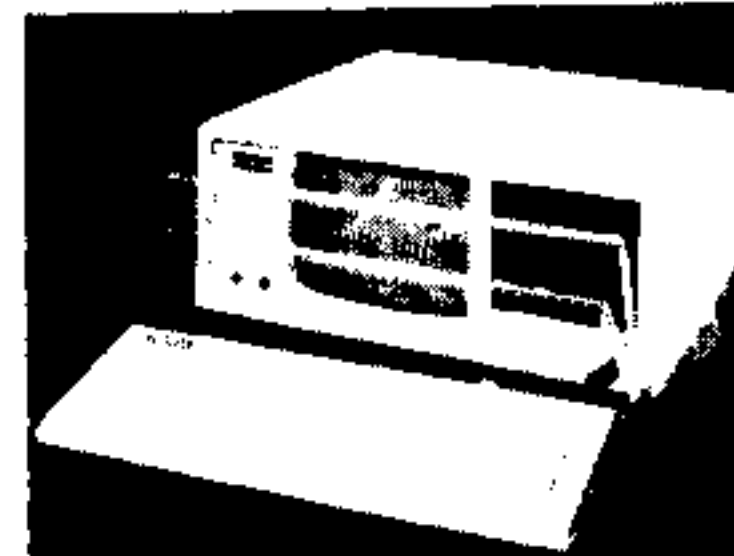
80386 16/20 MHZOK.....	\$1120
Mini 80386 16 MHZ 2MB.....	\$1650
Regular 286, 6/12 MHZ, OK.....	\$345
Regular 286, 6/10 MHZ, OK.....	\$320
Mini 286, 6/10 MHZ, OK.....	\$325
Turbo 10 MHZ OK.....	\$88
Turbo 8 MHZ OK.....	\$78
Color w/Printer.....	\$50



IMC TRAVELLER 88/286/386

IMC LCD Traveller..... \$CALL
LCD high contrast & wide viewing angle. Blue or Green. LCD and RGB controller, 110/220 V. Detachable key board. Five expansion slots.

Color Graphic Card.....	\$40
Mono Graphic Printer Card.....	\$50
Disk I/O (5 Port).....	\$52
RS-232 Card.....	\$22
Floppy Controller.....	\$22
101 Key Keyboard 88/286.....	\$54
84 Key Keyboard 88/286.....	\$42
360 FDD Fujitsu.....	\$74



IMC 88/286 PORTABLE

8088 bare bone (135W)..... \$359
80286 bare bone(200W)..... \$399
9" Dual Frequency Monitor Amber or Green,
286 Style key board.

360 FDD Toshiba.....	\$76
1.2 MB FDD Fujitsu.....	\$92
1.2 MB FDD Toshiba.....	\$98
20MB HDD w/WD ctrl.....	\$289
20MB HDD w/286 ctrl.....	\$375
30 MB HDD w/ctrl.....	\$305
Samsung Flat Amber.....	\$84
Samsung Flat Green.....	\$82



TOWER CASE..... Call
Space for any Regular 80386, 80286, or 8088 Main Board, 6-Half-High Drive, Up to 250W power supply.

286 REG Case.....	\$66
Mini 286 Case.....	\$54
8088 Slide Case.....	\$29
8088 Flip Top Case.....	\$35
Mouse w/Adapter.....	\$55
Parallel Switch Box.....	\$31
Serial Switch Box.....	\$31
Printer Cable.....	\$7



IMC COMPUTER, INC.
11100-H S. Wilcrest
Houston, Texas 77099
TEL: (713) 561-8857
FAX: (713) 561-9357

Manufacturer (Taiwan)
IMC COMPUTER, SYSTEM
TEL: 02-766-1991
TLX: 25907 JFYWU
FAX: 866-2-766-9812

TERMS & CONDITION

- * UPS Ground, COD, UPS BLUE/RED upon request.
- * All products carry full manufacture warranty.
- * 15% restocking fee on return merchandise within 10 days.
- * IMC, won't be held responsible for any change or modification.
- * Prices and availability subject to change without notice.

TI Forum
continued from page 372

running time of Extended BASIC programs. According to Watford, PBBS loads and runs from a RAMdisk in two minutes and ten seconds. With the new routines, the loading time is cut to an astonishing 2.8 seconds! Also available ("now working about 90% of the time," says Watford) is an ability to take a "snapshot" of a program's status (screen composition, variable states, etc.) and then return to it at a later time. Those features combine to make any large program able to be modularized without any significant reduction of performance. For Kimble, that means he can cut up PBBS into many chunks and expand each chunk as much as he wants. Without the routine, the program is too large to permit further enhancement.

In fact, Kimble plans to have several BBS's in one with the modules. By switching in the requested segment, several completely independent BBS versions can be juggled at once.

For file transfers, Paul Charlton's BBS Xmodem routines are used, with Watford planning a rewrite for more efficient transfers of more than one block read in from disk at a time.

The board may also be demonstrated without an RS232 or modem from a single double-sided diskette—making it a good piece to show off at user group meetings and TI fairs.

PBBS is available on all the major telecommunications networks as well as directly from Kimble, at 1000 Hyatt Avenue, Columbia, South Carolina, 29203. Kimble will send out the latest version for \$5, with fairware registration and additional documentation for \$30. Another incredible example of software worth hundreds of dollars available at a terrific price.

Kimble Sysops his own PBBS system, the Orphanage, at (803)754-4996. Other PBBS boards include "Nightline" in Denver, Colorado (303)277-1447 (Sysop is Keith Amann), the TI Depot in Springfield, Missouri (417)865-0810 (Sysop is Curtis Finney), and the Pittsburgh Users Group bulletin board in Pittsburgh, Pennsylvania (412)824-6779 (Sysop is Gene Kelly).

Kimble and Watford met through the South Carolina Midlands 99'ers. Kimble is currently president of the group, although he plans to soon step down so that he can concentrate his energies on improving PBBS and learning assembly. "BASIC is just getting old," he says.

For some, however, BASIC (and Extended BASIC) are fertile grounds for programming and experimentation. With that notion in mind, we continue Barry Traver's timely advice on "Extending Extended BASIC." Traver welcomes any comments or inquiries. Send them along to the TI Forum at *Computer Shopper*.

Extended Extended BASICs

Last month I argued that (perhaps contrary to some popular opinion) BASIC is an excellent, all-purpose computer language, entirely adequate for a multiplicity of uses. Some objections to BASIC really represent strengths rather than weaknesses of the language. For example, BASIC is easy to learn

(and indeed is known by more people than any other computer language), but in its present form is not just for "beginners." It is a flexible language that allows writing of complicated, orderly code, but does not outlaw "quick and dirty" code when such is appropriate (i.e., BASIC allows structured programming, but doesn't "force" it like some other languages). And code written in BASIC is ordinarily fairly simple to modify or customize (unlike, for example, assembly object code).

But what about those situations which demand more speed or power

than BASIC is capable of? One answer is found in the fact that BASIC can be extended. Texas Instruments extended TI BASIC when it released TI Extended BASIC, including "more than 40 new or expanded commands, statements, functions, and sub-programs." Because of the additional statements available (and other improvements), it is actually easier to write good programs in TI Extended BASIC (often called simply "XB") than in TI BASIC. The result has been that TI XB has become the standard form of the language.

The exciting news is that this stan-

dard can itself be (and has been) extended when needed! The possibilities are practically limitless, but let me make my point with mention of nine(!) significant "extended extended BASICs" that have already been made available.

One of the improvements of TI Extended BASIC is the ability to add assembly language subroutines by the use of CALL LINKs. The following make use of this feature: SXB (Super eXtended BASIC by Jim Hollender of J & K H Software), DEP (Display

continued on page 374

IBM
HP
SONY

Q

BOARDS/OPTIONS

AST • GENOA
JETWARE • MODEMS
ORCHID-Designer VGA . . . \$285
PACIFIC DATA-1MB RAM
FOR HP LASERJET II . . . \$299
PARADISE TALLTREE— J Laser
WESTERN DIGITAL

CHIPS

INTEL • RAM • WEITEK

COMPUTERS

AST
286 Models 80, 90, 120, 140,
170, 386
COMPAQ 286-Model 1
386-20 Models 60, 130, 300
Portable 386-40MB or 100MB
EVEREX 386
IBM PS/2 Models 30, 50, 60, 80
NEC Multispeed EL/HD
QUALITY Premium Grade Clones
286-10/0, 640K, keyboard \$985
386-20, 2MB, keyboard \$2700
SHARP
TOSHIBA Models T1000, T1200,
T3200, T5100
ZENITH Models 181, 183

FAX

BROTHER • CANON • NEC
PANASONIC • SHARP • TOSHIBA

D

HARD DISKS

FUJI • MAXTOR • MINISCRIBE
PLUS • SEAGATE

KEYBOARDS

HONEYWELL 84 Key, 101 Key

MICE

LOGITECH • MICROSOFT

MONITORS

NEC • SONY • THOMSON • ZENITH

G

SPECIALS

<p>QD XT</p> <ul style="list-style-type: none"> • 20 MB HD • 640KB • 360 KB Floppy • Mono Card/Par Port • Amber Monitor <p style="text-align: right; font-weight: bold;">\$899</p>	<p>QD 286</p> <ul style="list-style-type: none"> • 10 MHz • Honeywell Keyboard • 1.2 Floppy Drive • 640KB RAM • Mono Card • Amber Monitor <p style="text-align: right; font-weight: bold;">\$1099</p>
---	---

Genoa Super EGA \$189

PLOTTERS DIGITIZERS

HITACHI • HEWLETT PACKARD
HOUSTON INSTRUMENTS
KURTA • NUMONICS
ROLAND • SUMMA

SCANNERS

HEWLETT PACKARD
MICROTEK LABS
PRINCETON GRAPHICS

PRINTERS

CITIZEN
EPSON-Models FX 86E, FX286E,
LQ500, LQ850, LQ1050, LQ2500
HEWLETT PACKARD
Deskjet, Laserjet II
IBM-Proprietary
OKIDATA
TOSHIBA-Models 321SL, 341SL,
351C, 351SX

SOFTWARE

ALDUS Pagemaker
dBASE III +
IBM PC DOS 3.3/MS DOS 3.3
Lotus 1-2-3/Symphony/HAL
PC MOS/386 Single/Multi
Ventura Publisher
Wordperfect 5.0

TAPE DRIVES

ARCHIVE	IRWIN
MOUNTAIN	SYSGEN
WANGTECH	

QUALITY DISTRIBUTION GROUP

(213) 478-9811

1-800-MICRO 86 (642-7686)
11651 W. Pico Blvd., Los Angeles, CA 90064
For Technical Services Call (213) 478-8819
QUANTITY PRICES AVAILABLE
FAX (213) 312-5065

IRWIN
ARCHIVE
MINISCRIBE
KURTA

TOSHIBA • MINISCRIBE • ZENITH • LOTUS • SEAGATE

COMPAQ • NEC • AST • INTEL • EPSON • TEAC



**The ADAM Forum
continued from page 232**

expanders, and numerous other items. TriSyd Video Games offers a 1200 baud internal Hayes compatible modem and the MegaCopy Interface. The software you need to operate these peripherals is included.

Once ADAM was a closed machine, with little hope for expansion, today, thanks to companies like those listed above, ADAM can grow to meet your current and future needs.

Software

If you think ADAM's hardware options have grown, you just won't believe the dramatic change in software quality. It must be seen to be believed. Say goodbye to poorly written, poorly documented SmartBASIC programs. Today's ADAM program is all or partially written in machine language for greater sophistication and speed. Most modern programs feature excellent graphics and sound, are menu driven, and well documented.

Programs are available for almost any application you can think of, including business packages, word pro-

cessing, graphic design, desk top publishing, entertainment, programming aids, and many more.

Much of the credit for this dramatic improvement goes to Digital Express—PO Box 37, Oak Hill, WV 25901. In the past year Digital Express has released software at a breakneck pace. Remarkably, quality continued to improve with each new release. The culmination of this work is the eminent release of a new modern operating system called GO-DOS. GO-DOS will thrust ADAM into today's world of icons and windows. GO-DOS is well documented and makes it possible to produce programs of a sophistication most ADAM owners never dreamed possible.

Digital Express is certainly not the only developer of quality software. Other software producers of note are Reedy Software—10085 60th St., Alto, MI 49302; Strategic Software—PO Box 8185, Turnersville, NJ 08012 and Walters Software—Rt 4, Box 289-A, Titusville, PA 16354.

If we have left anyone out, please

continued on page 376

**TI Forum
continued from page 374**

complete user's manual, or \$50 for all the preceding plus a hard copy print-out of fully documented source code. (Both STAR and EDP, by the way, include substantial documentation and demo programs on the original disk.)

Some of EDP's routines are new; others are significant extensions of already-existing statements in TI XB. The original purpose of the package was to rewrite the various screen commands so that they could be used in either standard graphics mode (32-column) or text mode (40-column). (And, yes, Virginia, EDP does do windows!)

EDP includes 33 routines in these categories: colors, input, output, patterns, time, windows, and miscellaneous. As EDP's name suggests, most of these are screen-oriented. Whereas STAR is more a miscellaneous collection of various types of routines, EDP is an integrated package of screen display enhancements.

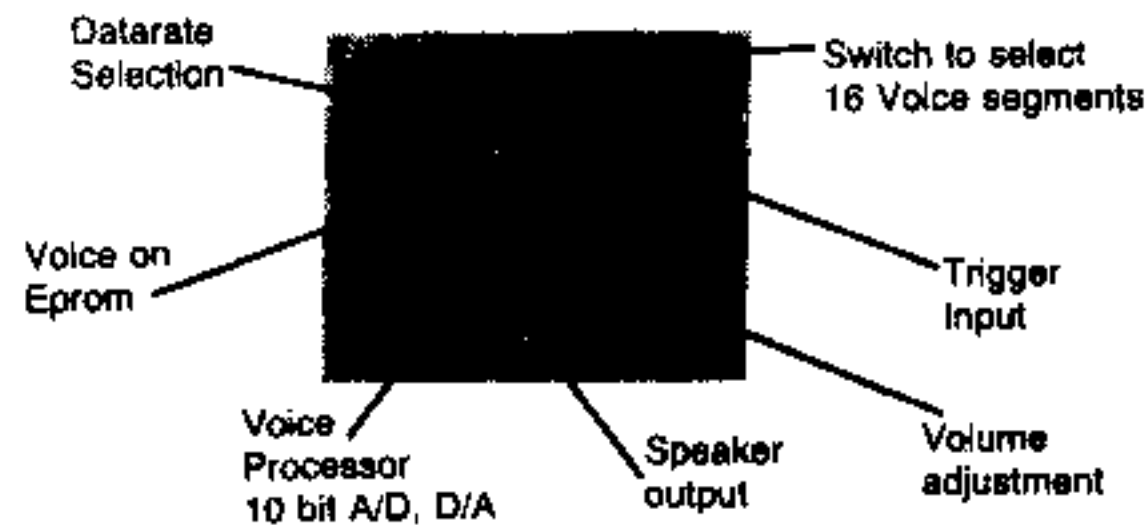
First, let's consider some changes from TI XB. CHAR now allows you to define characters 30 through 159 in graphics mode (compared to 32 to 143 in normal TI XB) or 30 through 139 in text mode. In addition, it lets you define 15 consecutive characters at a time (compared with TI XB's 4 characters), even as CHR PAT can now retrieve up to 15 character patterns in one string. CHRSET can now reset character sets 9 through 16 (not done by TI XB's CHARSET). COLOR now permits setting of foreground and background of any number of consecutive character sets as a group. SCREEN retains its effect, even when called in command mode. Input for ACCEPT is no longer limited to a single line, and up and down arrows may be used to edit your input. And if you don't specify a row and column for DISPLAY or ACCEPT, placement on the screen defaults to the space immediately after the last DISPLAY or ACCEPT.

Second, there are routines not found at all in TI XB. MODE lets you change between graphics and text mode, and WINDOW selects the borders of your window (for use with ACCEPT, DISPLAY, and SCROLL). SCROLL may move any number of lines of your window at once up or down, saving them in a screen BUFFER or discarding them. GTEXT lets you retrieve a string of characters from the screen (sort of an extension of TI XB's GCHAR). PEEKV, LOADV, and LOADR are similar to STAR's PEEKV, POKEV, and VDPREG. WRITE saves the entire screen to disk, including window pointers and ACCEPT and DISPLAY pointers; READ restores the screen from disk. FLASH is similar to, but more extensive than, STAR's FLASH; STEADY corresponds to STAR's NORMAL. (Again, for screen routines, EDP is superior to STAR.)

Third, I've never been that excited about interrupt-driven clocks, but EDP includes such routines: CLOCK (to set the clock), SHOW (to show it on the screen), TIME (to assign the time to variables), and ALARM (yep, you guessed it!). A special version of EDP is available for those whose current runs on the PAL (50 Hertz) standard used in Europe, Australia, and elsewhere.

There are additional routines in both STAR and EDP that I did not mention, but enough has been said to suggest their power. If you can't find STAR and EDP otherwise, send a check for \$3.00 to Barry Traver, 835 Green Valley Drive, Philadelphia, PA 19128, and I'll send you them on a "floppy" disk by first-class mail. Or you can contact the original authors directly. Here are the appropriate addresses: Michael Riccio, Com-Link Enterprises, 953 Fillmore Street, Philadelphia, PA 19124; Curtis Alan Provance, Paragon Computing, 17 Constance Street, Merrimack, NH 03054. Next month (D.V.) we'll survey briefly the other "extended extended BASICs."

VOICE IN A BOX!



\$80.00 each
OR AS LOW AS
\$30.00 in OEM
QUANTITY

VOICE ON AN EPROM CHIP

It is really an exciting product. Now you can put your voice or special sound effect in a box smaller than a cigarette package. Yes, it is Voice in a Box. More precisely, you store your voice on an Eprom or Rom chip, and plug in the chip on our Voice Playback Board (VPB). That is it! You can now instantly playback the high-quality digitized voice again and again.

Applications:
There are thousands of them in use now for promotional voice messages. It is ideal for voice announcement, advertisement, sound effects, voice instructions, and security. For us, we record our child's voice on a chip and have it ready anytime we like to hear the sweet "ma-ma." We call it a "Voice-Photo." Take a picture of your love one's voice and the sound memory is there for you to recall. We even have people talking about putting their will on the chip!

The Voice Playback Board (VPB) is for playback of the voice on a chip. To record and program the voice you need the following:

- Voice Development Software (VDS) **\$195.00**
- Digital Voice (DVC) **\$95.00**
- (see our May Advertisement for specifications)
- Microphone (600 ohm impedance) **\$12.00**
- Speaker (4 ohm, 1W with enclosure) **\$9.00**
- Optional:**
- Eprom Programmer for PC (EP-01) **\$395.00**
- or use your own Eprom Programmer

The VDS development software allows you to record, playback your digitized voice on a PC XT/AT, and compatible. It also allows you to merge up to 16 voice segments to a voice data file. The data file can then be programmed into an Eprom Chip using the EP-01 Eprom Programmer or other commercial available PC based Eprom Programmers.

To order from the U.S. Call Toll-Free:

1-800-263-7487

- SPECIFICATIONS:**
- Power Supply: 9 to 12V DC or 9V Battery
 - Power Consumption: 0 ma when inactive
50-200 ma Playback (Volume Adjustable)
 - Output: 4-8R, .5 to 1W Speaker
 - Playing Time: Selectable Datarate. Maximum 32 seconds with 27512 Eprom
 - Voice Segments: DIP Switch selectable, 16 segments.
 - Dimensions: 3.2" x 2.7" x .8"

COMPUTER AGE LTD.
P.O. BOX 730
NOBLETON, ONT. L0G 1N0
1-(416)-859-0370



\$8.95 → **CALL 1-800-442-SWIM**

- TWO 360K FLOPPIES**
- REQUIRES EGA & IBM COMPATIBILITY
- ALLOW TEN DAYS FOR DELIVERY
- SWIMWEAR ON-A-DISK • ATLANTA, GA.