

536

# TIMES

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EXCHANGE CLUB



## TI 99/4A NEWSLETTER

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### TI-99/4A HOME COMPUTER

The most advanced, most versatile Home Computer on the market today.  
 All the power and capability you'll need, from the finest colour graphics anywhere to the wonder of synthesized speech. And it is simple to use right from the start.



**TI>MES**

WELCOME TO OUR CLUB!

**You could be  
on our pages**

It's taken some weeks and a bit of head scratching to get our first edition of 'TI.MES' to press but I hope you will agree that it was all worth while and that you will find many things of interest to yourself and your family.

We are an independent club and as such rely on our members to contribute something towards this newsletter. Even a beginner to computing will have made discoveries by trial and error so please share your ideas, opinions and mistakes with others so we may all learn.

Reviews of software would be welcomed as it is difficult to judge a cassette by its cover. Isn't it annoying to find you've wasted your £5+ on a glamorous sounding game only to discover a simple game that becomes tedious after a few runs. YOUR opinion would be appreciated by us all.

I'm pleased to say we have already had a couple of interesting articles from members, one of whom is 16 years old, and they are included this month.

The newsletter is entirely non-profit making so we are unable to give you anything except a smile and a thank you.

Our next edition is due in October so that should brighten up those foggy Autumn days for you.

Should you ever find you have computing problems please call us and if we dont know the answer then we will find out. That's a promise.

#### HAPPY COMPUTING

**We welcome programs articles and tips from our readers.**

**PROGRAMS** should, if possible, be computer printed to a width of 48 characters (use a new ribbon) and or sent on cassette. Check carefully that they are bug-free. Include details of what your program does, how it works, variables you have used and hints on conversion.

**TIPS** are short articles and brief programming routines which we can put together with others. Your hints can aid other computer users.

**Keep a copy of your submissions and include an SAE if you want them returned. Label everything clearly and give a daytime and home phone number if you can.**

**ARTICLES on using home computers should be no longer than 2.000 words**

Although the Texas Instrument's Home Computer, the TI-99/4A, has been around for quite some time, it's only recently attracted the attention it properly deserves. There does not seem to have been the pressure advertising that one would have expected for such a machine and the software and accessories at present available for it.

The TI has been subject to a pretty massive price reduction in the past year and at its present cost of around £100, it would appear to be well worth considering. Another point in its favour is that it is also widely available in the High Street — at outlets such as Rumbelows, Currys, Greens, Comet and Argos — and through mail order. There is no doubt which sector of the market that the TI-99/4A is being aimed at — the all-in-one computer for the home environment. It has facilities for the accessories that we have come to expect with this sort of machine (joystick controls, plug-in modules, etc) and is intended for use with your colour television.

### Overview

The TI-99/4A is a compact unit measuring only 15" by 10" by 1½" which comes complete with a separate UHF modulator pretuned to channel 36 and a separate power supply unit, measuring 8" by 3¾" by 2¾". The power supply unit and modulator have acceptably long leads to enable you to sit at a comfortable distance from the TV — rather different from some set-ups requiring you to crouch uncomfortably close to the screen. The modulator has a very short lead for the UHF output, sensible from an electronic point of view but could pose problems with free-standing television sets. For instance, how do you balance this not particularly light box near the set? Certainly, you must not let it hang in mid-air . . . must you?

Until recently, my main criticism of the Texas system was the way in which it consisted of lots of separate items. The proud owner of the TI-99/4A and its associated printer and disc drive (they call it disk . . . you'd think the Americans would have learnt to speak English by now!) would have been faced by six separate units (eight, if you include the Speech Synthesiser and the television). Now all that has changed and if you opt to buy TI's purpose-designed expansion box (see below) you'll be able to keep up to seven peripherals — including memory expansion card and interface unit — all together.

Now, let us look at what we have got and see what we can do with it. The keyboard unit is neat and straightforward with a standard QWERTY layout, the numerals positioned on the top row of keys. I prefer a separate numeric keypad but this is purely a matter of personal preference and one quickly becomes familiar with whatever system is provided. Just a few hours of key-bashing and size, position and dual function keys soon slot into your subconscious. The keyboard is a little smaller than some but perfectly easy to use, even by someone with fingers as clumsy as mine. On the review model, two or three keys were a little sticky and although they had fully returned to their rest position before I got to pressing the next key, it did leave a nagging worry as to whether one day they would stay down!

Good quality sockets are used to connect to the power supply, modulator, tape recorder and remote controls (joysticks, etc). The sockets for tape recorder and remote controls are the same type and size and, although I'm sure Texas will have protected the appropriate circuits, it surely would have been more sensible to use a different type. Neither are the sockets labelled in any way and, bearing in mind that this is aimed at family use, I think some form of unique connectors should be the rule.

## Hardware

The case is made from metal covered plastic and as it does not seem to have any brittle areas, it should be safe for children to use — an important consideration for a home computer which all the family are likely to want to use. Another point on which it cannot be faulted is the keyboard mounting — it's well supported and so will stand up well to the treatment its likely to receive. Are you wondering what I have in mind: well, imagine playing an exciting game of zap the alien — you don't exactly stroke the keys with kid gloves.

As already mentioned, in general, the connectors on the TI-99/4A are of a high quality. It is especially worth commenting, however, that the program module plug-in slot is very well engineered and that I had no problem inserting or removing program modules.

Inside the case there are two PCBs. The smaller is the power supply which appears to be switched mode. In any case, it runs cold and is well made which is the point to note. The larger of the two boards constitutes the computer itself and one of its important features was apparent the moment I took the lid off — it's actually shielded by a metal casing. What a wonderfully simple way of reducing radio interference and thereby improving picture quality. Full marks to TI for a good idea. But won't it run awfully hot? Well, TI have taken the steps necessary to cope with the problems as I discovered once I lifted the tin lid off — two of the chips had been coated with a sticky white substance which I guessed served to make a thermal contact with the metal in order to transmit excess heat through it.

Only after removing this screen do you get to the main board itself. The board is dominated by the huge TMS9900 16-bit microprocessor which in itself is rather a puzzle. Why, when TI has had a 16-bit microprocessor — yes, the type we're now getting excited about — available all this time hasn't it beaten allcomers to producing the super micros which are only now appearing on the scene?

To return to our examination, although there were a number of long jumper wires on the review model, this did not seem to indicate last minute modifications and overall, I was impressed by the layout of the board. The 16K of RAM is provided by eight 4116 chips and there are two 128 byte RAMs for use as temporary storage. There are also two ROMs containing the BASIC.

## Software

After connecting up and switching on, I must admit to being quite impressed with the display. The initial display consisted of a number of coloured rectangles, together with the Texas Instruments' Trademark (logo) and the words: HOME COMPUTER READY, PRESS ANY KEY TO BEGIN. The colours were stable with a small amount of colour fringing and, unlike some experiences with other computers, gave the impression of a steady business-like display. On pressing 'ANY KEY' you are presented with a menu:

```
PRESS
1 FOR TI BASIC
```

Should you have any of the TI software plugged in, the menu will, of course, be extended to include the options available. The 'plug-ins' are called 'command modules' and are plugged in by sliding the cartridge machine into the recessed tray at the right of the keyboard. Command modules should only be inserted or removed when the machine is in its initial quiescent/waiting mode of 'PRESS ANY KEY TO BEGIN' (known as the 'master computer title screen'). You may return to this mode at any time by pressing the FCTN and '=' keys simultaneously or by entering BYE. The latter is recommended as it first CLOSEs all OPEN files then erases all programs and variables in the memory, finally resetting the computer ready to return it to BASIC when required. The 'FCTN =' (QUIT) command does not CLOSE any files but is used when you have a command module in operation and no opportunity to type BYE (most of the keyboard is disabled for many of the games).

The full display area of 32 characters across by 24 high may only be used by graphic symbols, and an area of 28 x 23 can be used for PRINT statements or LISTings. Any program line may be up to four screen lines in length (112 characters including the line number). The computer is fairly user friendly although it does demand spaces in the right places. For example:

```
20PRINTA
20 PRINTA
LIST30
EDIT40
```

are all unacceptable, whereas:

```
20 PRINT A
LIST 30
EDIT 40
```

are acceptable statements. It will display a number of ERROR messages should you ask it to do something unacceptable.

Certain errors are detected on entering a command in a program line; entering LIST100 gives the message INCORRECT STATEMENT as there is no space between LIST and 100, and entering an EDITed line which exceeds the memory capacity, gives the message MEMORY FULL.

The computer will accept program lines which are incorrectly written and ENTERed, but when you RUN the program, it will come to a dramatic halt (crash) on reaching the line. These errors may be detected in two ways. First, on RUNning the program but before the program lines are actioned, the computer scans the program in order to establish a 'symbol table'. This is an area of memory where the variables, arrays, functions, etc, are stored. If the computer detects an error during this 'scan', it will display an ERROR message, eg FOR-NEXT ERROR, telling you that the program has a mismatched number of FOR-NEXT statements. While displaying this message, the screen remains in its 'programming mode' colour of light blue.

Should this 'memory scan' prove acceptable, the program is then RUN and the scan becomes a light green colour

while the program is RUNning. During the program RUN, PRINT statements, etc, are displayed as black letters on the same green screen, unless programmed for a different combination. At this point, the computer has accepted the scan but, in the process of RUNning the program, further errors can still cause a crash. The screen then reverts to light blue and an ERROR MESSAGE along with the line number at which the crash occurred will be displayed for example:

```
BAD LINE NUMBER IN LINE 320
```

indicates that a jump was made to a non-existent line in the program.

One fact which you cannot help but notice if you've used many other micro-computers, is that the TI-99/4A is slower than a number of machines on the market today (see 7 *MicroChoice* results of the benchmark tests) but for the vast majority of uses it will be put to, I doubt that the users will mind too much. Nowadays, a lot of stress is put on the speed a computer will work at. Of course, this is important, but what are you going to use this computer for? As a dedicated scientific computer to work our formulae containing hundreds of steps... I doubt it. (However, if accuracy and precision are qualities you are looking for, you'll be glad to know that your calculations will be correct to 13 digits!)

### Commanding Respect?

TI BASIC has a number of commands/statements which some machines do not have, and one or two that are not in its vocabulary. I was pleased to find: RESEQUENCE rennumbers program lines; TRACE lists the program line number as it actions that line; NUMBER gives you automatic line numbers when writing a program as well as ON... GOTO and IF... THEN... ELSE which are not always present in micro BASICs.

The string handling capabilities seem to be quite reasonable and the arithmetic functions all that one normally expects. A slightly unusual array handling command is OPTION BASE allowing you to set the lower limit of an array to either 0 or 1. This

can be quite useful to those of us who get confused dealing with complicated array handling while trying to remember that the 15th element in an array is represented by A(14) and not A(15)! **OPTION BASE** is definitely the easy way out!

Missing from what is otherwise a pretty comprehensive line-up of commands/statements are **PEEK** and **POKE**. This is nowhere near as desperate as some people make out, because users of this machine would probably not be wanting to delve into memory locations. However, for those of you who may wish to interrogate the display screen, **TI BASIC** presents us with

**CALL HCHAR**, **CALL VCHAR** and **CALL GCHAR** of which more shortly.

To clear/erase the screen, whether in immediate or program mode, the **CALL CLEAR** command (**TI BASIC** calls it a sub-program) is used. **CALL** in **TI BASIC** can be followed by a number of keywords:

**CALL CHAR** Allows you to define your own special graphics characters. You may redefine the standard set of characters with codes 128-159. The characters are made up of up to 64 dots in an 8 by 8 grid allowing a varied set of special characters to be used . . . memory permitting.

**CALL HCHAR** Allows you to display on the screen a specified character at a specified location (defined by row and column) and will repeat that character horizontally for a specified number of times.

**CALL VCHAR** Similar to **HCHAR**, **VCHAR** repeats the character vertically rather than horizontally.

**CALL SCREEN** Defines the screen colour on which individually coloured cells are displayed (**CALL COLOR**) then defines the foreground and background colours of that cell).

**CALL KEY** Allows you to transfer one character from the keyboard directly into your program. It is similar to other **BASIC**'s **GET** or **INKEY** but is slightly more sophisticated as certain keys may be disabled if required.

**CALL GCHAR** Allows you to read a character from the screen, the location required being specified by row number and column number.

**CALL SOUND** Allows you to generate a tone between 100Hz and 44,000Hz. You may define the duration in milliseconds and the volume on a scale of 1 to 30. Further, you may generate up to three tones plus one noise to be played for the same duration at the same time (ie three note chords, etc) all with their own specified volume levels! You also have the option of various 'white noise' effects.

**CALL JOYST** Allows the input of information based on the position of joystick/lever on the Wired Remote Controllers which are an accessory for the **TI-99/4A**.

The **TI-99/4A** will allow assignment in both the now somewhat obsolete **LET A = n** or in the more common form of **A = n**. In which case, why bother to type in those extra letters? The **TI-99/4A** has 16K of user

**RAM** expandable by an additional 32K to 48K — or even to 52K by the addition of a 4K 'mini memory' plug-in module — however, this is only accessible to an appropriate command module or accessory.

### Expansion

**TI** suggest a domestic audio cassette recorder at the top of their list of accessories you might like to add to your **TI-99/4A**. They recommend two inexpensive, readily available tape recorders for this purpose. They are the **PYE 9110** and the **Sanyo Slimline**, both available for around £20.

If as well as saving programs you want to list them as 'hard copy', you'll be pleased to discover that there is the **TI Solid State Thermal Printer** which can be plugged in directly to the computer. This uses a narrower than usual paper which is heat sensitive and will accept 32 characters per line. Its useful features include 32 pre-defined graphics symbols and the ability to cope with plotting.

As previously mentioned, the latest development is the Peripheral Expansion System which is a unit measuring 20" by 15" by 14" and has eight slots for peripheral cards. one of these is used to connect the system to the computer console, which means you have seven left for use. The 32K RAM memory expansion card is one which could be slotted in. Another is the RS232 interface card which includes a parallel port suitable for driving a printer with a Centronics type interface. The RS232 card really opens up the world of other manufacturer's printers to the TI owner. There is also a P-code card containing the USCD P-code interpreter in ROM. This, used with the USCD Pascal software package, changes the machine into a Pascal development system without using up any additional RAM.

The expansion system provides space for installing one TI disc drive but another two disc drives can be added externally. The current disc controller is for 5¼" single sided single density units, although double sided double density units are to be catered for in the future.

The TI Solid State Speech Synthesiser plugs directly into the right-hand side of the computer itself. This contains a vocabulary of words and phrases, permanently stored on chips. It can be used in conjunction with a command module — see below for comments on Speech Editor — and speech can be incorporated into the user's own TIBASIC programs.

### On The Soft Side

As far as software is concerned, by Autumn 1982, TI offered 66 packages, cassette tapes and plug-in modules. The plug-in command modules range through various games, a number of educational titles and a Speech Editor to a Disc Manager and TI Extended BASIC.

The games include the inevitable 'TI Invaders' and various other 'shooting games' set in different scenarios. All offer more than one difficulty rating and all start at a 'difficulty rating' high enough to make them interesting and reasonably addictive.

'Carward' is simply two cars in plan view racing around concentric tracks, one car 'eating up' a series of dots as it goes. You may change tracks at North, South, East and West and the second car is programmed for a head-on collision . . . you have to avoid it! A very simple game but requiring quick reactions and very definitely addictive.

'Hunt the Wumpus' is a game of logic to find in which cavern the Wumpus is hiding. You get clues as you explore the caverns . . . it isn't difficult but the Wumpus seems to eat up its opponents all too often! Good fun and it certainly makes impetuous youngsters think ahead.

'Video Chess' has good graphics and although it sometimes plays some very strange moves, you cannot afford to take it lightly. You may choose its type of play (aggressive, normal or defensive) and the level of play. A good club player should be able to beat it but may get the occasional surprise.



TI-99/4A

'Connect Four' is a real brainteaser and, like several of the other games, may be played by either one person against the computer or as a two-player game. Against the computer you have several levels of difficulty and I enjoyed it immensely. My only criticism is that of its psychological oneupmanship . . . when you place a 'token' on the grid it sounds a minor 'ker think' but every time it places a token, you get a little tune that gives the impression of 'rah, rah, rah . . . so there, beat that!'. An excellent game.

The 'Speech Editor' is fun but although its vocabulary is quite large (more than 300 words) I'm afraid I found this the least interesting of the 'plug-ins'. The words are clear (with American accent) and it is possible to build words from those already built in, but I found that whenever I wanted a special word, it was not possible to make it up . . . obviously I am a visual- rather than audio-oriented person.

The child education tapes are rather repetitive to a 'grown-up', but delight the little ones especially when they get a gold star and some stirring music when they solve their problem. These cover Pre-School Early Learning, Early Reading, Beginning Grammar and Arithmetic.

'Household Money Management' is quite involved, with many questions regarding how much you earn and where it all goes. It takes some time to set up accurately, which, of course, you must do if you wish to take full advantage of its capabilities. It is a little depressing as, although I know I only have about £1 at the end of the month, I'm not so sure I want to see it boldly stated on the screen. Also, I'm not so sure it wouldn't be quicker to work it out on the back of an envelope!

The 'Disc Manager' enables you to use the TI Disc Drive via the Disc Controller and in the brief time I used it, it seemed to function perfectly. It is a little noisy in operation and when it read my first disc I had visions of the floppy being shredded, but nothing untoward has happened so far.

TI Extended BASIC offers a number of additional commands/statements and facilities which make it a very useful extra. Multi-statement lines are allowed — which make life a little simpler when writing a program. It has an interesting command called CALL SPRITE; this enables you to create moving graphics very simply. This module also has a PEEK sub-program which, with other commands, allows access to assembly language sub-programs (of little interest to the initial buyer of the TI-99/4A but could be of great value as his/her computer awareness grows).

In all, there are more than 40 new or expanded commands in TI Extended BASIC and although the standard TI BASIC is quite comprehensive, this module will certainly open up new horizons for the addict.

### Documentation

Did someone mention instructions? Home computers are notorious for their poor instructions/manuals but here Texas have produced something definitely in the superior bracket.

The User's Reference Manual (A4, 170 pages) starts with Section I 'General Information' explaining clearly and with a number of diagrams what you should have to do to get the system up and running: how to interconnect the various units, what additional accessories are available and, most important of all, a brief explanation of keyboard and special function key operation.

The special function keys have a further short section to themselves amplifying the previous information. These keys: FCTN and CTRL are used as special Shift keys giving such operations as cursor control, INSERT and DELETE character and ERASE line. Entering control characters (CTRL key) also enables to TI-99/4A to link in with various telecommunications devices.

Section II entitled 'BASIC Reference Section' takes the reader through such basics as numeric constants, variables, string expressions, reserved words, etc, to





a complete listing of all the TI BASIC words understood by the TI-99/4A. These are grouped together under sub-headings such as 'Commands', 'General Program Statements', 'Colour Graphics and Sound', 'Built-in String Functions', etc. Each TI BASIC expression/word is explained clearly with plenty of examples to hammer the point home.

Section III, 'Appendix to BASIC Reference Section' contains such items as ASCII character codes, keyboard mapping, colour codes, error messages and some applications programs.

There are eight further short sections; one worthy of mention is a fairly comprehensive index providing such information as a glossary, how to use pre-recorded software, various addenda, very simple fault finding (eg have you plugged into a mains outlet?) and the UK guarantee!

**Conclusion**

In conclusion, I can only say that I have enjoyed having the TI-99/4A in my home; my children, aged six and seven years old, have enjoyed both the games and the educational modules. Although the younger child could cope rather easily with all but the grammar module, it has been educational to see just how the use of the computer can hold the interest and, in turn, make young children aware of computers.

The TI-99/4A is certainly a good contender for a home entertainment unit. Whether it stands up as a complete computer system is, however, still an open question. The advent of the expansion box and the variety of peripherals now available suggest that TI want you to consider it seriously as a fully expandable machine.

**Peter Freebrey and S M Gee**

MICRO CHOICE



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The thermal printer



RS232 interface.



Command Module



Speech synthesiser



Twin joysticks



Cassettes,

# YOUR LETTERS

This page is where you get the chance to put your opinions in print.



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YOUR REF

OUR REF RF

1983

Mr Clive Scally  
40 Barrhill Avenue  
Patcham  
BRIGHTON  
East Sussex

WE Were happy to receive this  
Letter from Robin, I am sure  
for the benefit of all our TI  
Users Robin Frowd will keep us  
posted. *Robin F.*

Dear Mr Scally

Thank you for your most interesting letter.

*I think a club such as yours will serve a good and important purpose and I wish you every success. I have added your club's address to our list and will ensure you get periodic updates of our activities.*

*In answer to your question about new developments, let me tell you about some new peripherals and software. Firstly, there will be a series of 3 new micro-peripherals that will interface with the T199/4A, with the aid of a small adapter. These peripherals will be available in June and are 4-colour printer/plotter (around £149.95 including VAT), RS232 and Centronics Interface (£119.95) and a Watertape Microdrive (£109.95). We are also making available a TI Program Recorder (£44.95) to provide for high quality, inexpensive cassette storage. Over the next 8-10 weeks there will be approximately 12 new modules brought on the market as well, plus an interesting software promotion. So, as you can see, a lot is happening.*

*I wish you every success with your club.*

Yours sincerely

R FROWD  
Home Computer Program Manager

# COMPUTER ARCADE GAMES

BY Howard Greenberg.

Hello and welcome to a new writer in a new user group magazine. My name is Howard and I'm the cheapskates answer to Computer and video games monthly. Those of you who don't care for my style of writing needn't feel inadequate for finding it trivia /unreadable/nauseating/not worth the paper it's written on , I'm simply not a professional writer. Since some of you may wonder why I've picked the easy job my qualifications are simply that I work in the Amusement industry. As such I have access to all the latest games, news, and developments to and within the Video games industry. I know whats next in Amusement arcades and what's likely to appear on home computers.

Certain games will never appear on home computers, many will never appear on the T.I.994/A. At least not in their original form. Copyright is being more clearly established and with one half of the industry suing the other, no-one is looking to market someone elses game. At least not without going through the proper channels first. For example Atari now have first refusal to adapt all Williams ( Defender, Robotron, Joust ) games for their own computers. If someone wants to write a program to play Joust on their T.I.994/A thats fine. But if you try selling that program.. .... Well I'll come to your trial and wish you well.

Some of you may be unfamiliar with some of the older games so I've listed here those games that had a significant impact on the Amusement industry, together with my own comments.

Pong (or ping pong ) 1st coin operated game. Similar to a game of tennis. Eventually made as home machines, no longer made, probably no longer played.

Breakout (super breakout) 1st game to capture the publics imagination in a big way. Similar to pong except that the object in hitting the ball was to dislodge a brick in a wall. Still available for Atari V.C.S.

Space Invaders. A particularly nauseating game. You either love it or hate it. Now synonymous with video games. First entry from Japan to score well in the West. Available still for probably every machine capable of playing games.

Asteroids. Atari's best ever seller. Their first game to use the X-Y monitor. A small ship in the middle of the screen surrounded by Asteroids moving at random. Shoot one of the rocks before it crashes into you. Available for Atari computers T.I. version Pesteroids from Stainless Software ( needs exbas )

Lunar Lander. One of Atari's worst sellers. The object was to land a lunar module on the moon. ( Where else would a lunar module be going ? ) The program, although heavily modified, was originally written by NASA for a use not dissimilar to the name of the game. I'm not kidding. Despite poor sales in amusement machine form ( so poor that if you want one they can be bought for as little as £50-00 ) it has proved very popular with home computer users. Only T.I.994/A doesn't have a version. Well it does, but it's in BASIC and that's just too slow.

Night Driver. One of the many driving games made by Atari, this was one of their best despite poor ( by todays standards ) graphics. The car was printed on the screen front, with the road represented by cats eyes. The object was to stay on the road. Available for Vic-20.

Monaco Grand Prix. Made by Sega and definitely one of the best driving games made. Viewed as a plan ( looking down on the car and road ) you had to race your car through Monaco, passing Kamikaze drivers, going through tunnels with only headlamp vision, through chicanes and various other obstacles. Fantastically expensive due to very high component count, it had no fewer than seven logic boards. Not available for home computer use although various parts of the game have been used.

Missile Command. One of Atari's best and my personal favourite. You are given six cities to defend with three launching bases. Each base has 10 missiles to knock out the attacking missiles thrown at your cities. Probably so enjoyable because each game was a new test. Available for Atari and BBC.

Defender. Williams first entry into the video game market. A well established pinball manufacturer, they decided to enter the video games market with spectacular results. Probably the video game with more controls than any other.

Scramble. Konami's major contribution to the video game history. The game appeared similar to Defender but was not nearly as good. Available for most home computers. T.I.'s Parsec is a combination of Scramble and Defender.

Pac-Man. The first game in a long time that didn't involve blasting space ships to atoms. If you haven't played this you haven't lived. It's appeal probably is in it's humour. Available to everyone with a computer. T.I.99/4A version Munchman.

Donkey Kong. Couldn't be called King Kong because of the film of the same name and plot. Rescue the damsel in distress from the top of the Empire State Building whilst the big ape is chucking barralls down at you. Great fun. Available for most machines ( but not T.I.)

Tempest. Atari's first colour X-Y game. Basically Asteroids in reverse with you on the outside defending yourself against the enemies coming out from the centre. A superb game not much appreciated mainly because so few were brought into the country. Mainly due to Atari's lunatic pricing policy. So far only available for the Dragon. ( Yuk )

Astron Belt. I must confess to not having seen this game yet. None the less it must rank as a very big first for Sega. This is current state of the art technology. It is unlikely to ever appear on home computers except in very cut down form. Why ? Because it uses interactive video discs to give a picture as good as your television set. There are only four in the country at present ( One's in Brighton Clive ! ) and they're very expensive. 40p a play is a bargain considering their purchase price.

That's just my list of games. You may feel I've ignored your favourite or glossed over it. If that's what you think write in and say so. My address is under the Arcade Hardware advert. Never mind being alert, we've enough lerts for the time being. What we need is writers. I don't know who else apart from Clive and Audrey are doing the writing in this rag but a few extra articles wouldn't go amiss. Or a Ms. Or a Mr. Whaddya mean you don't know anything technical. Did you see anything technical in this article ?

Just a little note to all of you who do play video games. If you can't make it to the fourth screen or that last little demon just won't lay down and die decently, DON'T ABUSE THE MACHINES. They represent a considerable investment on the part of the owner. Would you like your T.V. smashed because a guest couldn't watch his favourite program. If you think that we're coining money hand over fist anyone who wants to is welcome to buy shares in our company. If you enjoy playing games, all well and good, just don't play with them.

I'm not signing off here as there are a few other points I want to raise and hopefully raise a response from someone out there. Is there anyone out there?

\*\*\*STOP PRESS- Atari is converting three of its computer games to run on the TI99/4a, PacMan, centipede and Defender, these will on sale by end of 1983 in cartridge form. --Ed C&A

## for women

GIRLS. WOMEN. LADIES. Are there any ladies interested in home computing? Or is it a purely masculine hobby. I do know of a few ladies interested in Computing. But they do it as a career. They spend their lives programming the likes of the Sirius I.B.M. and superbrains. Don't any of you play with the T.I.99/4A. If you do lets hear from you. I only ask because I'd hate to make someone blush by sharing a rude story. Seriously though, everyone with a home computer seems to be male. WHY?

Do you watch a lot of television? No not really. I suppose I watch the occasional programme but I wouldn't say I watch a lot. Not so long ago this seemed to be a standard question and answer. It makes me wonder why people bought television sets if they were determined to show off how little they watched it. Most of us watch far more than we'd care to admit. Is there something dishonourable about watching T.V? I can't answer that. I suppose psychiatrists have their opinions but I'm really not qualified.

So why have I brought that old chestnut up? Well there seems to be a similar attitude towards home computers. It's almost as though you're some kind of social leper if you can't dash off a spreadsheet in a morning and go on to do a database in the afternoon. If you can't write a 16k program, who cares? Do you feel inadequate? I can't program well. I can only just about manage badly. I don't feel an idiot even though virtually every article in every magazine is trying to show me the error of my ways. Maybe older computers were made for programming, but today's are made with a wealth of software available. You only need to know how to use the program, not to write it. Are you criticised for only playing games on your T.I. Big deal. Did you buy the machine with the intention of writing a program that would solve the worlds problems. Maybe you did, but just because you haven't got round to it doesn't mean that you can't enjoy using the machine playing Munchman. Whatever you use your T.I.99/4A for, ENJOY IT!

Bad news to newcomers to the T.I.99/4A. Those of you who are wondering how to write a program using high speed graphics. Without the Extended Basic Module, sprites are not possible. I know the impression given with the advertising is that you can write those flashy Arcade style programs on the console alone but the sad fact is that it simply can't be done. Although expensive, ExBas is probably the cheapest method of producing good software. Mini-memory gives access to Machine Code but it's not for the faint hearted. Also don't believe adverts for console only software that claims to give these professional results. All the cassette based software I've seen has been either of the Adventure style games which the T.I.99/4A is very good with, or it no way matches up to the claims made for it. Sorry.

Module prices seem to be on the way down. Consider one 'discount' shop whose prices are dearer than many much smaller retailers. Congratulations to Mr. Parrish at Parco Electrics Devon. The prices of modules there are substantially cheaper. I wish him every success with his venture. Normally I wouldn't appear to advertise on his behalf, but it would be a shame if his store were to close through lack of custom. By cutting his profit margin he needs the extra custom. Support the smaller and independent retailer. The likes of Curry's and Rumbelows will get by without us. Try asking them what a for next loop is. One multiple store didn't even know why anyone should want to connect a cassette recorder to their computer. Obviously if all you have is a high street multiple then you have little choice. Just don't expect much help. Many's the time I've been in my local Micro-C and just chatted. Most of the specialists are enthusiasts too. They enjoy talking about computers. Sad to see that Micro-C are phasing out the T.I.99/4A and handing it to Curry's. Not that they're being biased. With the explosion of the home computer boom, Micro-C want to concentrate on the business side.

Certain Hardware lines are coming down in price too. Not from T.I. At last 3rd party hardware designers are appearing on the scene. See my advert under Arcade Hardware.

## IEWS

What do you think of this attitude? I have a friend who shall remain nameless. He is very highly placed within a multinational video games manufacturer. I suspected that his company would be following Atari's route by entering the Home computer market. When put to him he agreed. His company were indeed about to market their own Home Computer. So far this story isn't unusual. Now read on. The company were prepared to virtually give the machines away, selling them at cost price and make their money on the add ons. Now believe it or not the company is not the worthy Texas Instruments. But do you see the similarity? The T.I.99/4A has dropped to the point where T.I. can't be making much on it. But just look at the price of the add ons. And once you're stuck with the machine you have no choice but to buy those add ons.

Is there a law against a magazine printing a bug free program? I haven't typed one in yet that worked first time, or second, or third etc.etc. I know my typing isn't something to type home about, but having listed them all umpteen times and checked them against the magazine I know whose wrong. I have the feeling that a) they're never checked for errors. b) that the idea of printing them using a matrix printer is supposed to inspire the idea that what you're reading is really a computer printout and therefore must be correct. Congratulations to Computer and video games with ski-ing. Apart from being so illegible a blind man stood as much chance as the rest of us, it didn't work when they printed the bad parts in black and white and with the 'corrections'. It was so bad I thought of calling in Rentokil to remove the bugs there were that many.

User groups. Now I don't know what Clive's opinion on this is but I'm sure that some people out there read Tidings. Very good it is too. (Even if they did publish my article.) The snag is that I'm sure some people feel they have to choose between the user groups. Why? Information is information. You probably buy more than one monthly magazine. Different groups serve different functions but the sum of the whole has to be greater than only having one of the parts. It's likely there will be some duplicity, even so if you didn't understand something the first time round someone else's way of explaining something might make more sense. So where is all this leading to. Well I know of someone in Manchester who is trying to start a local user group. So far I'm the only person he's met but we both had something to offer to each other despite our beliefs that we were both totally unknowledgeable. If you live in the Greater Manchester area and want to meet other people with the same interest, get in touch with Terry Grimshaw, 21, Allingham St. Longsight. Neither Terry nor I are trying to undermine any other group. But if people can't get together through their hobbies there really isn't much hope for us all. (Wow, very profound)

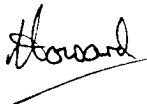
99'er magazine. A pig to get hold of, but a very, very good publication. Apart from being the only magazine to have bug free programs (swoon) it is a mass of useful information. Despite it's high price it is worth every penny. To give you an idea of just how good it is, they haven't asked me to write for them.

Well that's it for the first edition from me. Doubtless elsewhere in these pages you'll find something worth reading. If you didn't WRITE something worth reading. Don't worry if you can't type. My index finger is ground down to the bone. And it's getting shorter with every line I type.

Untill the next time, enjoy yourselves. Be good and be good to your T.I.99/4A. It will be good to you and for you.

BYE.

HOWARD GREENBERG



Everyone has a view, lets keep on sharing them +Ed C&A





# ARCADE

UNDER 18s . . . . .

This page is especially for you!  
Let's have your ideas and short programs  
you've written yourself, however simple  
(the program that is)

I expect most of you can beat the grown ups  
when you get your finger on the fire button but  
just how good are you? Are you the Arcade game king?  
How do you rate at PARSEC, MUNCHMAN, INVADERS and  
TOMBSTONE CITY? Let us know and get your name in print.  
Please be honest.

Here's some high scores from the U.S. for you to beat.

- THE ATTACK level 1 - 200,000 by Ken Der
- INVADERS level 1 - 13,900 by C. Hunter
- Car Wars - 31,000 by Dave Robichand
- Blasto - 36,000 by David Lewis
- Tombstone City - 352,000 by Jamie Ash.

Speaking as someone who has yet to attain 1,500 at level 1  
Invaders but is very proud of 42,000 plus at Parsec I have  
concluded either a) they're cheating, b) it's a misprint,  
c) they're not getting enough homework or d) they are getting  
enough homework but getting Dad to do it.

How do you fancy a pen-pal who's a T.I. nut like yourself?  
Just had a flash of inspiration(don't panic I'm back to normal)  
Wouldn't it be nice to have a friend in the States to swap  
ideas and tapes with, sent magazines and even obtain the  
unobtainable which is more obtainable there. Still there?  
Pass your details to me - age, interests etc and I'll do my  
best. Might take some time to fix something so be patient.

AND NOW FOR SOMETHING COMPLETELY DIFFERENT . . .





## PUT YOUR HAMMOND TO SHAME

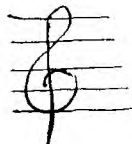


Make the most of the TI 99/4a's sound chip. Barrie Clark shows you how;

Texas owners are lucky to have one of the most versatile computers on the market. The sound capabilities of the 4a are unrivaled.

Key in the first program as shown below:-

```
1 INPUT DUR
2 CALL KEY(5,A,B)
3 IF B=0 then 2
4 NOTE= A+120
5CALL SOUND(-DUR,NOTE,0,NOTE+50,0,NOTE+100,0)
6 GOTO 2
```



Upon running this program waits for you to input a duration value. This must be between 1 and 4250, otherwise the program will terminate with an error. Once enter has been pressed the program is waiting for you to press a key. The CALL KEY statement which is doing this maps the keyboard in Basic mode. Engaging and disengaging the Alpha lock key changes the range of chords available.

When a key is pressed a chord sounds. It will last as long as the duration time, or until another key is pressed. Although simple this program is versatile and can be altered to suit the user.

Did you notice that some of the chords had a sinister sound? This effect is achieved when tones are sounded which aren't on the musical scale. The following program displays this fact:-

```
1 CALL SOUND(4000,110,0,111,0,112,0)
2 CALL SOUND(4000,160,0,161,0,162,0)
```

This plays 2 examples of the sepulchral sounding tone. For this to work all three tones must have the same volume. The tones can be anywhere between 110 and 44733.

Try the next program and see how changing the volume alters the effect you can have.

```
1 RANDOMIZE
2 FOR T= 1 TO 4
3 X=INT(200*RND)+110
4 FOR V=30 TO 0 STEP-10
5 CALL SOUND(4000,X,V,X+5,V,X+10,V)
6 NEXT V
7 NEXT T
```

Line 1 sets up a random function.

Line 2 sets up a loop in variable T, all commands etc between line 2 and the NEXT T statement will be executed 4 times.

Line 3 picks a note between 110 and 310 at random.

Line 4 sets a variable for the volumes, making them louder.

Line 5 plays the notes.

Line 6 closes the V loop and sends the program back to line 4 until the volume has changed 3 times.

Line 7 end of loop for T.

The 4a has also got 8 channels of noise of which the four white noise channels are more interesting. Channel -8 is only useful when another tone is playing so we will ignore that one. Type in the following program:-

```
10 CA LL SOUND(100,-7,0)
20 CALL SOUND(-100,-6,0)
30 CALL SOUND(-100,-5,0)
```

Yuck! Have you just stepped in something? Channels -5 to -7 give us a lovely SPLAT noise.

Feel free to expand my techniques. As you become more aware of the sound subprogram you will soon devise some of your own. I'll be back soon and then I'll tell you how to make music and graphics work together.

BARRIE CLARK.

# RANDOM SOFTWARE

THE HOME OF YOUNG SOFTWARE WRITERS FOR THE TI-99/4A COMPUTER

We are proud to announce an exciting new range of software for the TI-99/4A with joysticks.

RS0001\*\*\*\*\*

Matchstick Man meets the space hopper Axeman and the frog

RS0002\*\*\*\*\*

Desmond Diamond (Great new cult hero) RS Demonstration

RS0003\*\*\*\*\*

Snailman Snailman II

RS TAPE 0001 \*  
Matchstick Man



\*\*\*\*\*

Here's some great news!

These two tape packs will only cost you £5.00 each !!!!

Joystick cramp free with every game, a must for Texas users, Random Software, games for great prices!!!!

Please add 50p for package and postage.

Only available in the United Kingdom

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AVON, BS19 4NP.....

Become a DD lover, buy Random Software.

\*\*\*\*\*

## GETTING IT TAPED

Is there anyone out there who has NOT had trouble loading a cassette? Isn't it amazing that Texas have only just introduced their own compatible tape recorder. It's priced at £44.95 including leads, but if it's anything like the other Texas hardware or software then it'll either be on order or sold out!

For those of you who can't wait here's some of the cassette recorders that we know of that DO work:-

TENSAI CRE 105 (Comet about £18).  
MARANTZ C190 (Comet about £39).  
LCCYD V182.  
SANYO SLIM 3G(About £30)  
INGERSOLL XK 691(Argus £17)  
WHSMITH Computer Compatible CCR800(£30)  
HITACHI TRQ 299



If you know of any others then let us know so that we can pass on the good news. If in doubt ask the shop whether it is compatible. They usually know as they have so many returned by Texas owners.

Here's some tips on loading that may be useful:-

1. If you have tone control then computers love plenty of treble.
2. Check the distance between the monitor and recorder, at least 2ft.
3. Run off the mains not batteries.
4. Make sure the Alpha lock is down.
5. Check all the connections, a support under the rear cable can be helpful.
6. Clean and demagnetise the tape heads regularly.
7. Follow the instructions in the manual. 'OLD CS1' to load the computer. 'SAVE CS1' to load the cassette and type this AFTER the program.
8. 'Error no data found' usually means MUCH too little/great volume. 'Error detected in data' usually means SLIGHTLY too little/much volume.
9. Use short, good quality tapes.

\* \* \* \* \*

\*\*\*\* Is a video nasty a T.I. Invader?

\*\*\*\*

## PROGRAM HINTS AND TIPS

Have you ever wanted to know how much memory has been used for a particular program? This is a simple exercise.

When you have entered the program you must make sure that lines 1 and 2 are open (Usually these lines are REM statements) Here goes— type in the following:—

```
>1 MEM=MEM+8
```

```
>2 GOSUB 1
```

```
>RUN
```

```
* MEMORY FULL IN 1
```

```
>PRINT 14544 —MEM:MEM
```

```
1392
```

```
13152
```

When you run the program the screen turns green. Wait for \* then type PRINT statement.

This is an example of memory USED

This is an example of memory LEFT

TI99/4a has 14544 Bytes in TI Basic.

TI99/4 has 14800 Bytes.

Once you have attained the amount of bytes left do not forget to erase lines 1 and 2 before continuing.

### PRINT STATEMENTS

```
10 PRINT "THIS IS THE WAY TO USE MANY"  
20 PRINT  
30 PRINT " PRINT LINES"  
40 PRINT  
50 PRINT "LOTS OF EFFORT,SPACE + PRINTS!"
```



```
> NEW
```

```
10 PRINT " THIS IS THE WAY TO USE LESS": "PRINT LINES":  
"LESS EFFORT AND PRINTS": "YOU CAN OBTAIN FIVE ROWS": "DON'T  
FORGET TO CHECK": "THAT STATEMENTS ARE ENTERED CORRECTLY":  
"OTHERWISE YOU WILL HAVE TO": "ENTER ALL THIS LINE AGAIN!":
```

Another useful tip for saving effort, when using a PRINT statement. If you run out of space on a line with a few characters left to put in try this— enter the unfinished line, then EDIT it. This gives you an extra row and a half on the line.

# REVIEW

## JOYSTICK by ARCADE HARDWARE.

This single player joystick is described by the manufacturer as follows "Designed to be the most substantial joysticks on the market, no consideration at all has been given to looks." I wholeheartedly agree.

The joystick is presented in a grey plastic box bolted together. It has a steel shaft and mountings with sprung pivot sealed and mounted in grease. Lever operated microswitches give 8 way movement. The sealed fire button is side mounted on the block.

We own a pair of Texas joysticks and the Arcade joystick compared more favourably for 1) computer speed, 2) construction and 3) 8 directions given, useful for your own programs.

During prolonged use it was found that the position of the firing button caused some strain on the thumb joint. Smaller hands suffer in particular. When one has such a good looking computer it is a shame that "consideration" was not given to looks as this is such a well constructed joystick.

The joystick is available by mail order from Arcade Hardware, 211 Herton Road, Fallowfield, Manchester M14 7 QE price £19.50p including p&p.

EXCHANGE EXCHANGE EXCHANGE EXCHANGE EXCHANGE EXCHANGE EXCHANGE

As a member of this club you can exchange your T.I. modules at a discount rate of £2 each. For this we test the modules to ensure perfect working order before sending them to you by recorded delivery.

Here's our current exchange list but if we can't meet your needs from this then write to us and tell us your requirements.

MODULES AVAILABLE (the number listed indicates which module below is wanted)

Blasto - 5,7	Household Budget Management - *
Soccer - 5	Addition/Sub. 1 - 1,2,3,4
The Attack - 6,7,8,9,10,*	A-maze-ing - 6,7,9,11,12,13,*
Car Wars-6	Video Games 1 - 6
Chess - A	Mini memory - A
Hunt the Wumpus - 9,14,15,16,11,	

### WANTED.

1. Addition/subtraction	2. Multiplication.	3. Division
4. Hangman.	5. Invaders.	6. Soccer.
7. Munchman.	8. Blasto.	9. Tombstone City.
10. Hustle.	11. Adventure	12. Tunnels of Doom
13. Blackjack.	14. The Attack.	15. Car Wars.
		16. Physical fitness.

\* Any equivalent value module.      A. Personal Record, Statistics, editor/ass.

# CURSOR

> Is the 99'er magazine really worth £3 per issue? If you think so then you can take out a year's subscription by sending £36 to Paul Dicks, 157 Bishopsford Road, Morden, Surrey.

> LOGO language is soon to be the accepted computer language of the primary classroom. Beware - in the States LOGO 2 is on sale and we believe it is superior to the first version. T.I. - why are we waiting?

> Why do T.I. owners have to pay another £10 on for cassette leads? They are really essential to serious computing so why should they be a hidden extra?

> Why doesn't anyone tell you that to obtain speech on programs with your 'free' speech synthesizer you'll need either extended basic or speech editor modules. Only a few modules have 'built-in' speech.

> Congratulations to Argus Catalogue Showrooms. After 8 months of use my TI 99/4a developed an annoying habit of switching to lower case in the middle of a line and some letters not displaying. As there is a 12 month guarantee I took the computer in to Argus, expecting to see it again in 3 months time. Instead I was given a new computer complete with 12 month guarantee. Thank you Argus - you have one loyal customer here.

## > • BOOKS THAT TALK



Here's a new invention from America which could be the answer to those exhausting demands for bedtime stories. Coloured story books come along with a talking computer which reads the words out when a Magic Wand is moved across the page. As well as the stories there are puzzles, tests and games. Texas Instruments are launching the Speaking Reader later this year, and it's obviously going to be very useful and good fun for children to practice their reading. The basic system is approximately £39.95, plus, at approximately £7.95, a range of fairy tales and other books from E.T. to Walt Disney.

Can Texas explain to me why a straight-forward speech synthesizer costs more than this? Please forward any ideas for converting the cheap Speak N'Spell game to run on my 99/4a!

## COMING IN OUR NEXT EDITION

\*\* NEW COMPUTER FROM TEXAS INSTRUMENTS\*\* EXCLUSIVE INTERVIEW WITH SOFTWARE AUTHOR\*\* LAUNCH OF NATIONWIDE SOFTWARE COMPETITION\*\*



We have received Newsletters from the WORLD-WIDE 99/4a Users clubs/groups.

AUSTRALIA

TISHUG, PO Box KX 101, Kings Cross, Sydney, Australia 2011

TIBUG, 23 Musgrave Street, Kippering, Queensland.

TICHUG, 69 Canopus Cr. Giralang, A.C.T. 2616.

TIMUG, 59 Landsrom Quad, Kilsyth, Victoria.

ATICC, 7 Toorak Ave, Bellvue Heights, Sth Australia.

TIUP, PO Box 246, Mt. Lawley, Western Aust.

U.S.A.

MSP 99 User Group, PO Box 12351, Saint Paul, Minnesota, U. .A.5511

Colorado 99/4 user group, P.O. Box 3400, Littleton, Co USA 80161.

Cin-day user group, 11987 Cedar creek Drive, Cincinnati, Oh, USA 452

Houston user group, 1719 Briar mead, Houston, Texas 77057.

CANADA

Edmonton User Group, PO Box 11983, Edmonton, Alberta.

HOLLAND

TIJDINGEN, Geral 79, 3524 DV, Utrecht, Holland.

If you wish to join any of the Users why not write direct, it makes the World of TI99 smaller and happier. . . . .

**Join the growing worldwide family  
of Home Computer users**



# TI99/4A EXCHANGE

TI-99/4A



40, BARRHILL, PATCHAM, BRIGHTON, SUSSEX, BN1 8UF.

## CLASSIFIED ADS

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Number of insertions required| .....

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Wanted  
Hardware for TI99/4a

For Sale

Dust covers for your TI99/4a only £3.25+ 35P+P  
The Texas Program Book by V.Apps £5.95+ 35 P+P  
contact TI EXCHANGE 40 Barrhill, Patcham,  
Brighton, Sussex BN1 8UF (tel after 7pm 503968)



# ARCADE HARDWARE

211, Horton Road, Fallowfield, Manchester, M14 7QE. 061-225-2248.

**proudly presents;**

## The arcade machine joystick

Designed by engineers to help you kill more aliens than ever before. Used by most British Amusement manufacturers as standard equipment The Arcade Hardware joystick is the toughest joystick money can buy. And at only £19-50 for our older style ( or £22-00 for the new style ) it isn't even the dearest. Recommended by Stephen Shaw ( Stainless Software ). New style uses the same joystick as older model but has more aesthetic styling.

Requires Console only. Works with any module designed to use joystick.

## The hexadecimal keypad

Gives you new Byte with your number crunching. A calculator style keypad puts a stop to those frustrated wanderings around the keyboard in search of those elusive numbers. Plugs into joystick port and is software controlled. Enter a short program and using your T.I.99/4A for real computing becomes simpler and quicker. Price £16-75. ( Needs Extended Basic )

---

A NEW CONCEPT IN MAIL ORDER. WE SUPPLY AS SOON AS YOUR CHEQUE CLEARS FROM STOCK. THE ONLY PERSON WHO TOOK LONGER THAN ONE WEEK TO RECEIVE HIS GOODS AFTER PAYING FOR THEM LIVES IN SWEDEN.

## FORTHCOMING ATTRACTIONS

### 32k RAM memory expansion

Is your Texas running out of memory. From September 1st our 32k memory expansion unit will be available. Designed to work with or without the peripheral expansion box. Prices £ 110-00 for peripheral card. £125-00 for stand alone unit. ( Needs ExBas or Mini-Mem )

### Light pistol

Not only does it weigh much, but you can leave the screen undamaged after you've shot it. Designed to complement a new range of software from Stainless Software.

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