

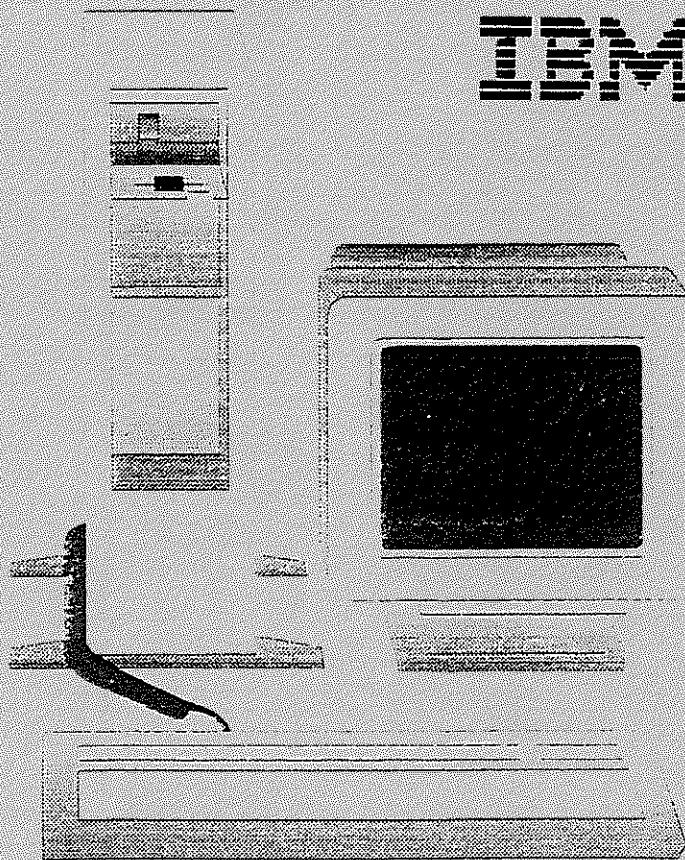
NEWS DIGEST

Focusing on the TI99/4A Home Computer

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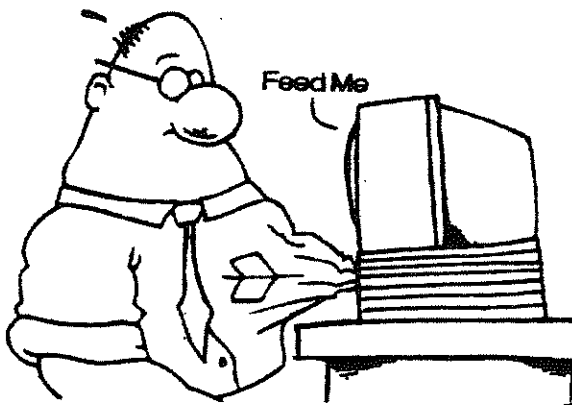
TiSHUG Sydney Meeting

The July Meeting will start at
2.0 pm on the 6th July 1996
at Meadowbank Primary School,
Thistle Street, Meadowbank.

Printed by

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EDITORS COMMENTS

It's June already, half of the year has passed and now for the other half. Don't forget the July meeting. I wasn't at the last meeting but from what I've heard it was well attended, with the usual buying and selling. Most people who attended the last meeting have received pamphlets. (that were produced through the club) these pamphlets are to be handed around to Friends, Neighbours, local computer shops and anyone interested enough to come along. As with having many new faces around it can be quite embarrassing not knowing names, so in the following meetings the directors would like all members to wear nametags. Dick is in the process of obtaining these tags so they should be available soon.

This month I would like to share some of my discoveries with you. I've been using COREL5. COREL TRACE is a program that comes with COREL5. basically COREL TRACE is used to trace BITMAP pictures into a more usable picture. (somehow).

Anyway I'm not interested in that at the moment. I've been using the OCR (Optical Character Recognition) side of the program. What the OCR does is converts text from a scanned, or other BITMAP into editable ASCII text format.

How have I been using it?

I don't have a scanner hooked up to my computer, but I can get my material scanned by using the Editors system. the Editors scanner uses a very old OCR program and it is very particular to what it will read, but there is a light at the end of the tunnel. scanning the page of text (large, small or whatever) saving the page as a picture on a disk, then running it through COREL TRACE it will trace the characters to editable text with a lot less errors than if I had used the older OCR program with the scanner.

Doing this was a simple task, firstly after COREL TRACE is operating, open the file by positioning the mouse on file then down to open type in the file name. presto there it is. using the Pick tool, starting from the top left corner, pressing the left mouse button, dragging a

box like line over the picture of text that you want converted. Once this is completed click on text in the title bar, then down to OCR (B&W) "click" and wait..... on the opposite side of the page the text is formed. Save the traced text by clicking on file then save, a flyout appears, click on save text as a (.txt) file. If there are pictures on the page, you can easily work around them. That's it for now see you at the next meeting

END OF ARTICLE

TISHUG SOFTWARE REVIEW

By Larry Saunders

This extended basic game will load under "Dsk1. WHEEL".

There are eight supporting files: BASE STATES FOOT MOVIES PEOPLE PHRASE PRESI TELE.

These are necessary for the program to run. The object of the game is to correctly name the word or phrase chosen by the computer from one of eight categories: Baseball States Football Movie Titles People Phrases Presidents and Television The program will first ask for the number of players press any key to continue or teams then ask for a name for each. A group of white squares (from 1 to 27) will appear on the screen. One of these squares represents each letter in the chosen phrase. Player one will be identified and requested to press "enter" while a rectangle keeps changing colors in the lower center of the screen. The number in the center of the rectangle indicates the amount given to the players score if they correctly guess one of the letters in the phrase. The program will then ask the player for their guess. Any press any key to continue letter on number - other than vowels (A E I O U) - MAY BE PRESSED. IF YOU HAVE guessed correctly then a card containing the correct letter will be placed in the appropriate square by TIME the computers helper and the player will be credited the amount for each of the correctly guessed letters. That player will be given the opportunity to guess the phrase. SPELLING MUST BE ACCURATE. The player can continue until guessing a wrong letter. VOWELS - After pressing press any key to continue enter a player with 250 points or more may purchase a vowel by pressing function 7 then pressing the desired vowel. WINNING - The first player to accumulate 10000 or more points wins the game. CAUTION - When the flashing rectangle contains a 0 and a player presses enter all of the players points accumulated by the player during the current phrase will be lost. good luck

Programs by TERRY STAPH P.O. BOX 387 POCONO PINES, PA 18350

JOKERPOKER is a one player version of the popular barroom classic. No joystick is required for this game. If the hand played is a winner, then the player is given a chance to go for "Double or Nothing". The player must guess if the hole card is a 9 or higher or a 7 or lower.

Remember: It's "Double or Nothing".
(We'll just see how greedy you are!)

KEY PRESS SUMMARY

ENTER => Enters your bet.

1 - 5 => Discards the the card above the displayed number.

C => Cancels the discards and restores the original hand.

S => Adds your winnings to your total and skips the "Double or Nothing".

SPACE => Deals new cards to replace the discards.

D => Accepts the "Double or Nothing" challenge.

This BLACKJACK game was written for for the player who likes his game fast and furious!!

The joystick input commands are summarized on the instruction screen. The game is played with only one deck and the dealer will notify you when the deck is being reshuffled. For those of you learning to count cards, this game will be good practice.

WHEEL OF FORTUNE
SYS REQ:32K,SPEECH

This game was programmed to play as close to the popular TV game show as possible. Unfortunately, memory restrictions would not allow me to add Vanna White or the shopping sprees. (Too bad!!!) The game consists of three rounds of puzzles. The player with the highest winnings after those three rounds plays a bonus round. A \$2000 slot is added to the wheel for round two and a \$5000 slot is added for round three. If only vowels remain unguessed in the puzzle the current player will be asked to take a guess at the answer. If his answer is wrong the next player guesses and so on until the puzzle is solved.

KEY PRESS SUMMARY

SPACE => Press the space bar to spin the wheel.

B => Buys a vowel for \$250.

F => When the FREE SPIN comes up on the wheel, a token

appears next to the name of the player. To use the FREE SPIN(S), wait until the next player's name is displayed then press F.

S => Press S to solve the puzzle. If the answer is a long phrase, you will be asked to enter your answer in two parts. Fill the first block then press enter and then fill the second block.

fcfn AID => This key will display the letters that have been already guessed.

DOCUMENTATION FOR BHXPI EXPERIMENTAL AIRCRAFT VER 1.0

Written January 1987 by Bruce Hellstrom for the TI99/4A and GENEVE home computers.

Released to the public domain January 1989 after final adjustments and bug fixing.

OVERVIEW

The BHXPI is an experimental aircraft in the final testing stages before FAA approval. The airplane itself is a modified version of an airplane purchased in 1984. The plane has been restructured to handle higher speeds and has been fitted with a much more powerful engine. The instruments have been replaced with larger, easier to read models and DME (distance measuring equipment) has been added.

STARTING OUT

The program is designed for use with the Editor/Assembler module.

TO LOAD ON THE TI99/4A:

1. Select the RUN PROGRAM FILE option from the Editor/Assembler menu.
2. Type in DSK*.BHXPI where * represents the disk drive the program disk is in.
3. Program will load and begin running and in a few seconds will show the main menu screen.
4. Continue to the ONCE LOADED section.

TO LOAD ON THE GENEVE 9640: 1. Load the GPL interpreter.

2. Set the GPL speed to 1.

3. Load the Editor/Assembler cartridge.

4. Select the RUN PROGRAM FILE option from the Editor/Assembler menu.

5. Type in DSK*.BHXPI where * represents the disk drive the program disk is in.

6. Program will load and begin running and in a few seconds will show the main menu screen.

ONCE LOADED

Select item "1" from the menu. This is the "Take Off" option. Enter a value of 0 for both wind and chop.

The instrument panel will appear. The airplane is sitting on the runway ready for take-off.

Read the INSTRUMENTS AND CONTROLS section while the instrument screen is in front of you. Push the "M" key to return to the menu. Read SOME FLYING BASICS to learn some of the basic information necessary for flight.

STANDARD OPERATIONS PROCEDURES

PREFLIGHT CHECKLIST

- 1) Program loaded
 - 2) Alpha lock off (TI99/4A Only)
- *Note - Some early versions of MDOS for the 9640 may require joystick #2 instead of #1

TAKE OFF - NORMAL

- 1) Pitch set to 4
- 2) Full throttle
- 3) Pull back at 75 mph for lift off
- 4) After climbing to a safe altitude (500 ft), push stick forward and trim to 150 mph
- 5) Climb out at 150 mph

TAKE OFF - SHORT FIELD

- 1) Pitch set to 5
- 2) Full throttle
- 3) Flaps down at 70 mph
- 4) Climb at 70 mph until clear of obstacle
- 5) Push stick forward to obtain 100 mph before raising flaps, then immediately pull back to continue climb with flaps up
- 6) Push stick forward and trim to 150 mph
- 7) Climb out at 150 mph

CRUISE

Below 9000 ft, 75% power
Above 9000 ft, full power

LANDING - NORMAL

- 1) Fuel selector to fuller tank
- 2) Trim to 100 mph
- 3) Lower landing gear and flaps
- 4) Trim to 80 mph

LANDING - SHORT FIELD

- 1) Fuel selector to fuller tank
- 2) Lower landing gear and flaps
- 3) Trim to 70 mph with flaps down

TESTED PERFORMANCE FIGURES

Speeds

Never exceed 260 mph
Top speed (sea level) 230
Cruise (75%, 9000 ft) 222
Maneuvering speed 175
Maximum flap extension 130

Climb

Best rate 150 mph 950 fpm
Ceilings
Service 17,500 ft
Absolute 19,750
Stalls
Flaps up 67 mph
Warning horn and light 76
Flaps down 58
Warning horn and light 65

CONTROL SUMMARY

Joystick - pitch and bank
1-9 - joystick pitch effectiveness (stick force)
A - abort approach or landing and go to full power
B - back to airport for ILS approach
C - climb, increase power
D - descend, decrease power
E - extend or raise landing gear
F - flaps, raise or lower
G - gas, select other tank
H - hold pitch (trim setting)
I - invert nav bearing, 90 or 270 degrees
J - jam, pilot in jam, stop everything
K - keep on going (see J)
L - leveler, wing leveler on or off
M - menu, return to main menu

CAUSES FOR CRASHES

MISSED RUNWAY

Descending to ground level off the runway surface or at too great an angle to runway alignment (090 or 270 +/- 18 degrees)

TOTAL WIPEOUT

Impact with ground at high rate of descent

LOST CONTROL

Going over 130 mph on the ground (takeoff or landing) or wing tip hits ground due to excessive angle of bank

CAUSES FOR CRASHES (CONTINUED)

TOO HARD

Touched down on runway but too hard. Max safe rate of descent is 300 fpm. Beware of inherent lag in VS indicator

LOST FLAPS

Flaps lowered at speed over 130 mph. Severe structural damage results

LOST WINGS

Pulling more than 3.8 g's may cause wing failure (see maneuvering speed)

LOST TAIL

Exceeding 260 mph may cause severe vibration of tail surfaces, causing structural failure

TOO LOW

Hit TV transmitter tower, mountain, building, or other obstruction or terrain during ILS approach. Happens when off course, when too low before intercepting glide slope, when going too far below glide slope, or going below decision height or crossing runway threshold while still in clouds

INSTRUMENTS AND CONTROLS

When reading this section you should have the control panel in front of you as you read about each instrument. Lights that are on are represented by a red or green circle. Lights that are off are shown by smaller white dots. On all dials, a pointer is represented by a dot in the center and a dot or line at the end. If there are two dots at the end, the pointer is at their midpoint. The pilot controls the plane with the joystick, the digits 1-9, and the letters A-L.

LIGHTS

Marker beacons - On the left side of the panel are 3 lights marked "OMI". These are the marker beacon lights. Used only for an ILS approach. Right light (inner marker) is not used. Middle light (middle marker) lights 1.5 miles from touch down point. Left light (outer marker) lights 4.2 miles from touch down point, at point where glide slope should be intercepted
LVL - located below the marker beacons, this light

indicates when the automatic wing leveler is activated (key "L") STL - located on the right side of the panel. This light comes on at the same time a horn does. Both warn you that the airspeed is getting dangerously low. If the stall actually occurs, the horn becomes more shrill and the nose of the plane falls rapidly. If you do not recover promptly, the plane will go into a steep dive FLAP - located on the right lower portion of the panel. These 2 lights indicate the position of the flaps, up or down GEAR - just below the flap lights are the gear indicator lights. A single red light above the "U" indicates the landing gear is up. 3 green lights indicate that all wheels are down and locked in place.

INSTRUMENTS AND CONTROLS (CONTINUED)

INSTRUMENTS

In the center portion of the panel are 9 gauges labeled as follows:

ALTM - Altimeter. The 2 digits in the upper corner represent the ten thousand and thousand digits, the dial represents thousand foot intervals. For instance, 12,500 ft above sea level (not necessarily ground level!) would be represented as "12" and the dial pointer straight down. Each tick mark on the dial represents 100 ft and the pointer moves in 25 ft increments

AH - Artificial horizon. 3 dots in a line represent the airplane as seen from behind. If the plane banks to the left, the left dot goes down and the right dot goes up. tick marks on the right side mark 30 and 60 degrees of bank. The horizontal line extending from the left side represents the horizon, relative to the nose of the plane. If the line is below the center airplane dot, the nose is above the horizon. The horizon line moves in 5 degree increments, the wing dots move in degree increments.

AS - Airspeed indicator. Reads from 0 to 300 mph. Each tick is 30 mph. Straight up is 0 or 300 mph, straight down is 150 mph

DG - Directional gyro. The needle points to the airplane's heading. If there is a wind, the ground track may differ. Up is North (360 deg), right is East (090 deg), etc. Each tick is 36 degrees. The needle moves in 9 deg increments

TURN - Turn indicator. This instrument displays the rate of turn. If the needle is straight up, the plane is not turning. If it points to the first tick from the center, the plane is turning at the rate of 3 deg/sec. This "standard rate turn" requires 2 minutes to make a 360 deg turn. The next tick mark is a 1 minute turn, 6 deg/sec

VS - Vertical speed indicator. This rate instrument shows how fast the plane is climbing or descending. Due to the way this instrument is constructed, there is a delay before its reading is accurate. Therefore it should be used to determine the rate only after it has

stabilized. When the needle is pointing to the left, the rate of climb is 0 feet per minute (fpm). When pointing up, the rate of climb is 500 fpm. When pointing down, the plane is descending at 500 fpm. Each tick mark represents 200 fpm

TACH - Tachometer. This does not really show revolutions per minute but shows percent power. Up is 0 or 100%, right is 25%, down is 50%. Each tick mark is 10%

FUEL - Fuel gauges. The left gauge is for the left tank (in the left wing). The right gauge is for the right tank. If a fuel tank runs dry, the engine will cut out. You must select the other tank and bring back the desired power setting. If one tank has more fuel than the other, the plane will tend to turn toward the heavier side. Each tank holds fuel for 70 min at full power.

OTHER INSTRUMENTS

DME - Distance Measuring Equipment. This instrument is located at the upper right of the panel. A green light shows that the instrument is on and working. The DME measures the distance from the VOR station at the airport in miles.

NAV - Navigation radio. This instrument is located on the right center of the panel above the flap indicator lights. This instrument is used either for an ILS approach or to receive the enroute navigation signal from the VOR. The light on top labeled "I", is on for an ILS approach. Note: when making an ILS approach and the airplane breaks through the cloud cover into clear air below, the instrument automatically changes from ILS mode to VOR mode and the light goes off. The 2 lights on the left side are labelled "T" and "F" ("to" and "from"). When passing over the ground station, the indication changes from one to the other. At the bottom of the display there is a number 090 or 270. This is the bearing to or from the ground station (when in VOR mode only). The face of the instrument has three tick marks. If the needle is aligned with the center mark, the plane is exactly on course. If the needle is at a tick mark, the plane is 20 deg off course in VOR mode, 4 deg off course in ILS mode. On the left side of the instrument is a horizontal needle which indicates whether the plane is above or below the glide slope when making an ILS approach (it does not move in VOR mode). Each increment is 1/10 deg above or below.

JOYSTICK - Controls aircraft attitude.

Push forward - nose down

Pull back - nose up

To right - bank to right

To left - bank to left

Nose up and down (pitch) is also affected by the pitch effectiveness setting. The degree of banking is dependent on how long the stick is held to either side.

The maximum angle of bank is 63 degrees

KEYS - Depressing several keys select options and control various functions of the plane.

A Aborts landing or approach. If ILS approach, NAV switches from ILS to VOR mode and the clouds disappear. In all cases, full power is applied immediately.

B Back to airport for ILS approach. This can only be selected if east of the outer marker. A cloud cover suddenly forms, obscuring the ground.

C Climb - power is increased, more the longer the key is held.

D Descend - power is reduced, more the longer the key is held.

E Extend or raise landing gear.

F Flaps are raised or lowered. Do not lower flaps when speed is above 130 mph. Beware of sudden loss of lift when raising flaps.

G Gas tank is selected. Caution. If a tank is run dry, the engine will stop. If one tank has more fuel than the other, the plane will tend to turn to the heavier side.

KEYS (CONTINUED)

H Hold trim setting at current pitch position. Push this key while pushing or pulling the stick to set trim to that position indefinitely. Subsequent stick movements are in addition to the held position. Trim settings can be accumulated by holding the key and stick for several seconds. Beware of high pitch effectiveness settings when cranking in trim.

I Invert the NAV bearing from 270 to 90 or vice versa. Although the number changes, for ILS mode the needle display is not affected.

J The pilot is in a jam and needs to stop the passage of time momentarily. This can be used to study the docs and instruments, or just take a break from flying.

K Keep on going. Restarts time after J key is used.

L Wing leveler. When on, the plane rolls to wings level position and maintains it. If the stick is used to bank, the plane will return to level as soon as the stick is released. The wing leveler will keep the plane level even if the fuel tanks are uneven, and will return it to level in severe turbulence.

M Menu. Returns to main menu. First shows information on the screen regarding plane's condition at the time key was pressed.

MENU OPTIONS

1) TAKE OFF

With this option, the airplane is sitting at the end of runway 27 (heading 270 degrees or due west). The airport is at sea level.

2) IN FLIGHT

With this option, you are asked first what altitude in feet above sea level you wish to start, second, what the ground level is (also above sea level), and third, the starting velocity. The power and trim are automatically set to maintain level flight at that speed and altitude. If the altitude is too high, there may not be enough power to maintain level flight at the

specified speed. If the altitude is the same as ground level, you can try taking off from an airport higher than sea level. The runway direction is selected randomly. Your starting position is within 5 miles of the primary airport where the VOR and ILS are located. When doing this, you are taking off from a secondary airport from which you can not land.

3) LANDING

You are about to join the down wind leg for a landing on runway 27. You are heading 45 degrees at an altitude of 1000 ft above sea level at 130 MPH. The airport is at sea level and your location is about 1 mile south west of the threshold of the runway. For the landing to be safe, you must touch down on the runway surface and be able to stop within the overrun. This means that the touch down must be within a mile of the threshold. When several miles from the field, a digit will appear on the screen above the panel. The value of this digit and it's height above the panel represent the distance to the touch down point (The east end of runway 27). This figure is in the east-west dimension only and is not affected by being north or south of the runway. That is why the distance shown by this digit will sometimes be different than the reading of the DMR.

LANDING (CONTINUED)

If the digit is exactly above the pointer in the center of the panel, you are intersecting the line of the runway, no matter which direction you are headed. The position of the digit to the left or right indicates which direction the runway would be if you were heading exactly due east or due west, whichever is closest to your present position. The digit indicates the distance in tenths of miles from the touch down point and the height above the panel indicates the number of miles, for example, if the digit is a 3 and it is located right above the pointer in the middle of the panel, then your distance is .3 miles from the touch down point. If the same digit is up 1 row on the screen, then the distance is 1.3 miles. If the 3 appears 2 rows above the initial example, then the distance is 2.3 miles.

4) SHORT FIELD LANDING

You are positioned for a landing as in option 3. The only difference is that there is a ridge of mountains 400 feet high just 1/2 mile east of the runway. So if upon approach, you stray below 400 feet when farther east of the runway, you're history. If that's not enough, the runway is also shorter, so you must be on the ground within 1/2 mile of the threshold.

5) ILS APPROACH

ILS stands for Instrument Landing System. An ILS allows for a safe method of landing even if visibility is poor or the ceiling (cloud bottoms) is low. The ILS locates the airplane precisely in space relative to the runway threshold. At this particular airport, if you break through the clouds at the decision height (DH), which is only 300 feet above the ground, you will be just 1 mile from the runway and in a position to try and make the landing. This approach can also be selected with the B key if you are east of the outer marker. If you choose option 5, you will automatically be positioned 8 or so miles east of the airport and within 1 or 2 miles north or south of the center line. You will be at an altitude of 2000 feet, heading west at 140 MPH. The ceiling is not known, but it is probably above the 300 ft DH, but it may be below it. Your first task is to turn as necessary to center the needle. You should also slow down to a more acceptable approach speed and lower the flaps and landing gear so that you won't have to mess with them later.

Do NOT go below 1200 ft before you cross the outer marker! As you approach the outer marker, located 4.2 miles east of the runway, the outer marker light will go on. Once past the transmitter, the light will go out. At this time you should be well established on the glide slope, that is, the glide slope needle on the left side of the NAV display should be centered. Now concentrate on keeping both needles as close to the center as you can. If things get out of control, call "missed approach" on the radio and execute the missed approach procedures: abort the approach and apply full power (A key), climb straight ahead to 1500 ft, then a climbing right turn to 2000 ft, heading 090.

ILS APPROACH (CONTINUED)

The middle marker is located 1.5 miles out. The light for this marker will not stay on as long because you are closer to the transmitter on the ground. Your altitude passing over it should be 450 ft. You could break into the clear at any moment. You must not go below 300 ft. in the clouds. If in the clouds still at 300 feet you must call missed approach. The signal to you that the you are below the clouds is the sky turning blue again and the ILS light on the NAV display going out. You will then see the digit appearing above the panel to tell you of your location and distance from the touchdown point. If you pass the threshold of

the runway while in the clouds and without calling missed approach, you will crash with the message,

"TOO LOW".

WIND AND CHOP

After you select your choice from the main menu, you and turbulence (chop) strength. Each can be in a range from 0 to 3 meaning none to severe.

SOME ADDITIONAL NOTES

The pitch effectiveness setting is selected using the 1-9 keys. This setting tells the program how far you would be pulling back or pushing forward the stick in a real airplane. A pitch setting of 1 is similar to barely pulling or pushing on the stick and may seem like nothing is happening. A pitch setting of 9 is like pulling or pushing the stick to it's limits and can be dangerous. In all practical flying, you should rarely have to use a stick force more than 5 with a normal setting of 3. Using the H key (hold trim setting) will accumulate trim very quickly and can also be dangerous at high pitch settings. An example is upon take off when trimming to your climb speed of 150 mph. The pitch should be set to 4 on take off and when you start to trim the nose. As you get closer to your climb speed, you should reduce the pitch to 2 and continue trimming the nose while holding the stick forward. This can prevent you from suddenly putting the plane into a dive.

SOME FLYING BASICS

For the following examples, you can use the in flight option from the menu, put the aircraft at 5000 feet at the speed suggested in the example.

DESCENDING

Set the plane up as above with a speed of 100 mph.

- 1) Hold down the D key for about 2 seconds and listen for a drop in power.
- 2) Notice the tach change.
- 3) Because the power has been reduced, the plane initially slows down a little. As the plane slows down, the wings produce a little less lift. This causes the nose to drop. When the nose drops, the plane begins "coasting downhill" which in turns brings the speed back to the original value but the plane is now descending.
- 4) The VS dial now shows the rate of descent. (It stabilizes slowly).
- 5) The altimeter begins to show the altitude dropping.

CLIMBING

This is exactly the opposite of descending. Start in

level flight again, but increase power. The engine noise will increase, the tach will show the increase, the speed will initially increase followed by a climb, and the altimeter will show the gain.

SLOWING DOWN

Set up again at a speed of 100 mph. Now reduce the power as if to descend. However, when the instruments show the descent has begun, pull back on the stick. Pulling back on the stick will create more lift because it tilts the wings back. This will slow the descent, bring the nose back to level, or cause a little climb depending on the pitch. If you reduced power enough, even though the stick is held back, the nose will again fall. Hold down the H key to "crank in some trim". This will pull the nose up again. As you make these adjustments, notice that the speed is falling and, if you do it just right, your altitude stays just about the same. Once you have slowed down to your desired speed, you may increase power again to maintain altitude.

SPEEDING UP

This is just the opposite of slowing down. Increase power and when the climb starts, push the nose down. Use trim as needed. When the desired speed has been reached, decrease power as necessary to maintain altitude.

SOME FLYING BASICS (CONTINUED)

LEVELING OFF FROM A CLIMB OR DESCENT

This is very easy if you wish to keep the same airspeed, just adjust the power until the plane is not climbing or descending anymore. There are many times however when you want to increase speed when leveling off, such as when making the transition to cruise speed after taking off and climbing to your target altitude. This is accomplished by pushing the nose of the plane down until the plane is not climbing anymore. This increases airspeed. To level off from a descent, you would pull back and increase power.

HOLDING ALTITUDE WHILE TURNING

When the airplane is banked in a turn, the plane will start to drop due to reduced lift on the wings. If the turn is steep enough, it is necessary to hold back on the stick to bring the nose up during the turn and keep the VS constant. Set up the plane at the maneuvering speed of 175 mph and experiment with turning. You may need to adjust the pitch effectiveness to maintain altitude during steep turns.

SUPPLEMENTARY ILLUSTRATIONS

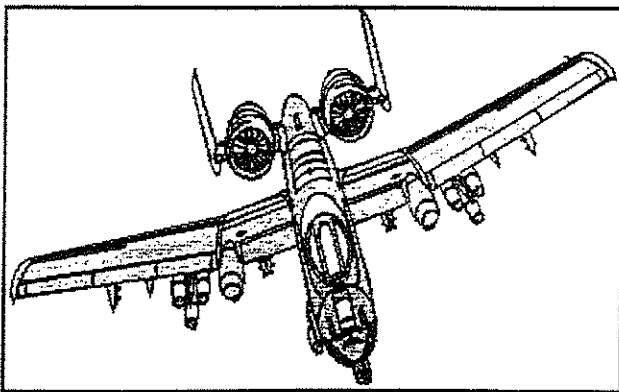
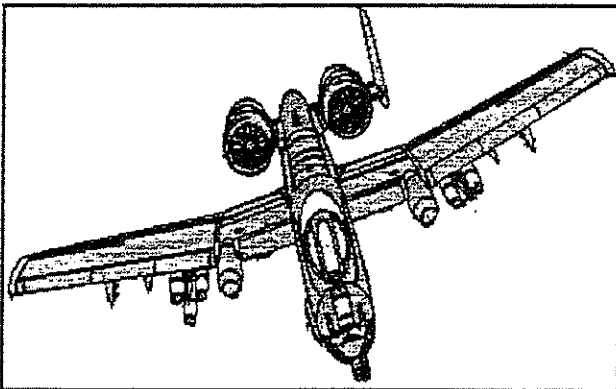
On the program disk are some supplemental illustrations for this documentation which can be printed on an EPSON FX-80 compatible graphics printer. To do this, you must use EXTENDED BASIC and place the program disk in drive 1. Use the command OLD DSK1.SUPPRINT to load the file. The program will then print the supplementary illustrations.

THIS PROGRAM IS BASED ON A 1982 TI BASIC PROGRAM FROM JOHN DOW.

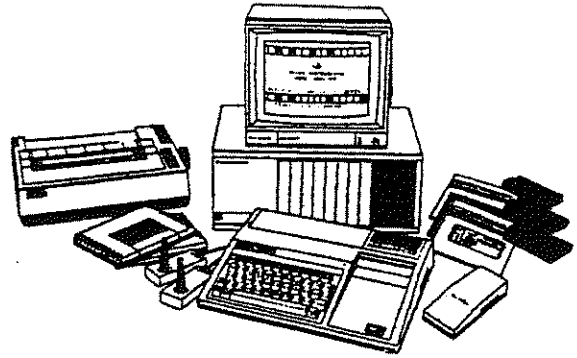
ALL ASSEMBLY CODE AND MODIFICATIONS ARE BY BRUCE HELLSTROM 7055 SEPULVEDA BLVD. #5 VAN NUYS, CALIFORNIA 91405

END OF ARTICLE 

SPOT THE DIFFERENCE



In the above two pictures there were five mistakes,
see if you can find them.
They are really easy



FOR SALE

COMPLETE TI SYSTEM

Composed of the following:-

1. Grey TI console (with X/B built in)
2. Expansion Box
3. 800 K Ramdisk (Horizon)
4. 32 KB Expansion
5. RS232 Card
6. 2 X 360 KB Floppy Drives with TI Disk Controller
7. RGB Monitor with Modulator
8. 4 boxes of disks (Programs)

All for the price of only \$250

Please ring **Ian Mullins** for all Inquiries on
(02-871 1514)



Also some separate items for sale prices are as marked.

1. Modem 1000/2000 Baud \$25.
2. TI Home Computer package containing EA Diskettes with complete instructions \$15.
3. TI Microsoft Multiplan Information Management package with solid state Cartridge and Diskettes \$20.
4. TI Writer word processor package (complete) \$10.
5. TI Artist disks with H/B
 - Spell It disks with H/B
 - Picasso disks with H/B
 - TI Sort disks with H/B
 - Video Chess Module with H/B
 - Personal Record Keeping Module with H/B
 - Tunnel of Doom Module with H/B
 - Alpine Module with H/B
 - TI Invaders Module with H/B
 - Terminal Emulator
 - Touch Typing with H/B

Please ring Ian Mullins for the above items on. (02-871 1514.)

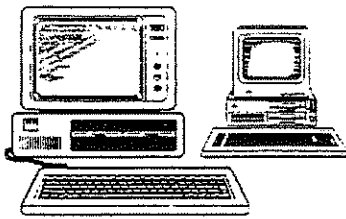
All
Negotiable

TI Technical Tips

It has become alarming to hear of the amount of Texas Instrument users who are creating problems with one specific hardware update!

I am speaking of the conversion of P.E. Box power supplies. I am a strong advocate of changing the internal power supplies to an "IBM" style of transformer. It is an improvement which is long overdue and I am glad to see it being advanced.

There is one major fact which has been overlooked by every article I have read however! I have also noticed the fact almost everyone who has "converted" a PEBox claims no depreciable reduction in heat in their "cards". The problem is created by the modification they have done.



The regulators on the cards themselves are still being activated! They are being "back-fed" through the output leg by the cards

themselves! This in effect "tells" the regulators they are still active!

The purpose/object of a regulator is to restrict voltage to a specific level and dissipate the excess voltage in the form of heat transfer. In the normal state of things the unregulated current enters the input leg, is regulated, and exits the output leg to supply the "card" with constant, regulated voltage.

What is done, in essence, with the "jumpering"(connecting a small piece of wire between the "input" and "output" legs) is to tell the regulator it is being activated (through the "input" leg) and then telling it, it is "not" working through the "output" leg! Regulators are not very smart. They are designed to work by discerning the difference between power-in and power-out. We in effect "lobotomize" their "thinking" process with the "jumpering" process. They are not designed to be activated without a specific amount of voltage supplied to the "input" leg. This is usually a figure of approx. 1 and 1/2 volts and above it's voltage rating (in the case of a +5 volt regulator this figure would be 6 to 6 and 1/2 volts), a "mental breakdown" by introducing power to both legs! The regulator is still "ACTIVE" even though you jumper it! It is still attempting to regulate the power and is creating heat!

I speak from experience on this. We (Tom Wills, Jack Mathis and I) managed to physically explode a 7805 regulator and blow a 1/4" hole completely through a MYARC HFDCC! The cause was from jumpering the regulator! It was an expensive and frustrating lesson.

The fix for this is simple. REMOVE the regulators and THEN jumper across the input/output legs! Why would you want them on there anyway? If the power supply you have installed "surges", your card is toast anyway!! Since you "jumpered" the regulator the power is going right past it! Don't tell me it is so you can simply remove the jumper and install it in a non-altered box. You are better off NEVER "swapping" your system cards between different systems (between a "standard" TI PEBox and an "updated" one). I don't care how many *WARNING* labels you put on the card, you are asking for trouble!!!

I, in fact, recommend ALL your PEBoxes be converted to the "IBM" style power supplies. The cost is so low and the price of repairs to your cards is high you really can't afford not to. \$30 for a power supply as opposed to \$50 minimum repair cost (if shipped to an outside repair facility) is a real bargain!

As usual, I must make the disclaimer of *ANY AND ALL MODIFICATIONS/REPAIRS TO YOUR SYSTEM AND IT'S RELATED COMPONENTS ARE DONE WITH THE FULL ASSUMPTION OF OWNER/REPAIR PERSON'S RISK*.

END OF ARTICLE



Caveat Emptor or Cave Dicks !

Although I am not superstitious, there are days, when one ought to avoid certain activities. Admiring nature's awesome display of a violent thunderstorm under the protecting umbrella of a big oak tree is one such no-no.

Saturday, the 4th of May should have been my "NO DICK DAY".

I purchased a tubular light bulb for my inspection light at Dick Smith during the ritual morning pilgrimage to our closest shopping Mecca, only to discover that it expired at the switch-on ceremony with a flash and pop. Not wishing to part with my hard earned 85 cents for a brief display of electric fireworks Mrs. B. was commissioned to exchange it during the afternoon cash converting exercise, during which the remnants of the weekly household budget would be evaporated. Dick Smith has duly exchanged the dud lamp using the well proven ATO accounting method:

- - credit of \$ 0.85 for the returned lamp
- - charge of \$ 1.65 for the replacement lamp
- - collection of \$ 0.80 balance.

The transaction was concluded with a logical explanation: "We have run out of the faulty batch, the price of the new batch is now \$ 1.65 each". Well how can one argue with such logic?

The objects of my next Dick versus BT transactions on that day were some bargain priced top quality 3.5" diskettes at TISHUG. Only much later did I discover that a pack of 10 contained 6 disks! Obviously this is a division by 2 error, which also has a perfectly logical explanation. The official conversion of one dozen old pennies to the new unit was 10 cents. Subsequently, when the old unit of dozen fell in disgrace it became 10, e.g. you would pay for a dozen and receive 10. In the case of the 6=10 box of disks, I paid for a new dozen and received an old half-dozen, which is an obvious division by 2 error, even if the tasty chocolate sweetener is considered.

The two thousand plus years old title chosen for my "NO DICK DAY" thesis aptly proves the points made. No doubt this Latin expression was first uttered by a hapless Roman centurion inspecting his wheelless chariot, discovering too late that the glib-tongued Phoenician trader used chaff and horse manure to quieten the noise of the worn axles. Obviously this very same method is used today to quieten noisy differentials, with the exception that owing to the scarcity of horse manure, car dealers use sawdust instead. This also proves that there is nothing new under the sun. The toga may not be fashionable any more, but "buyers beware" have survived many centuries.

(Disclaimer. Any second hand car dealer who may happen to read the above paragraph should note that the quoted practices refer to those guys on the opposite side of the road and not to him. Likewise, Dicks if the toga does not fit, then do not wear it.)

With warm regards

END OF ARTICLE

Long live TI!

I was very happy to see the "Greetings from MICROpendium" card. I knew I'd have another year of wonderful articles and insightful suggestions and updates for our orphans.

Rumor had it - you know, it just wouldn't be the same if not for all the rumors in the TI community. We're like a bunch of old busybodies sitting on the porch passing gossip around the neighborhood. Anyway, rumor had it that the declining readership of MICROpendium would make December 1995 the last issue. And when I couldn't find that issue, I thought my worst nightmares had come true. Thanks for hanging in there.

I'm in Vero Beach, Florida, taking care of my ailing mother. I thought I would be here a month tops and it's been two and likely two to three more. It's been a nerve-racking, sleep-losing, physically draining experience. But I always had my TI and a link to the outside world via the 'net. These helped keep me entertained and grounded in the truly important things in Life. One of those important "things" has been and continues to be some of the friendships I've made while being a Tier. I know this is true for many people in the community. It is a community in the most rewarding sense of the word. It is a relationship that even the power of the Pentium can't replace. We've done more with less. Listen to me! I've reaped the benefits with very little effort or input I'm the beneficiary of countless hours of detailed, often frustrating work by people who may not even recognize my name. I thank them for that and ask them to excuse my laziness. I thank you for keeping me informed and introducing me to some very special artisans in this cyber-world. As we approach the millennium, new ways of communicating and living are yet to be discovered. But I think the kids on the patio will still amaze themselves with Logo II in the GROM port of a very old and dependable TMS9900 series chip that may not destroy the forces of evil at blinding speeds, but allow them to "make some- thing on TV"! That's what it's all about, really, don't you think?

Gary Fitzgerald
Milford, Connecticut

A SUCCESSFUL TALE

Over the past year, at work. I have found it necessary to complete my work on an IBM style computer. Because of issues of compatibility, and double usage, I decided to transfer my working files over to the DOS system. This presented a problem for me because I have been using PR Base as my data base. I had over 500 records in one of my actual data files. I decided that I had to make it work.

PR Base presents a problem, because it stores each record on a separate disk sector of 256 bytes. The actual file structure of PR Base is quite different from the norm. The normal disk manager cannot recognise PR Base files because they are stored unconventionally. The disk does not contain files, only records in used sectors. Using Disk Patch, and Advanced Diagnostics, I gradually worked out, how to create a file on a new disk, which was made up of all the database records. I created my own file header, and after many failures found I had a file on disk which I could actually recognise and read.

My next task was to transfer the actual data to my IBM machine. Firstly I had to make my own data transfer cable. I used 9 pin cable, and 25 pin D connectors at each end, one male, one female. After minor soldering difficulties, I completed the connections. I simply joined pins 1 to 8 on each plug as well as pin 20, with the corresponding pins on the other plug. Then I set up my transfer. I used Telco on the TL, and Telix on the IBM. I set both systems to ANSI, using the X Modem protocol, at 8N1 and at 19200 BPS.

All was ready for the great moment. I selected the file, "Directory" and pressed enter. Nothing. Nothing the next time, or the next. I checked com ports, took out the RS232 card, checked all the settings, tried different protocols, but nothing went through. Finally I decided to check my actual soldering in my cable. Strangely enough, I found a broken solder connection on pin 2. I corrected this and tried again. Nothing. I kept trying different combinations. Suddenly I realised that my IBM system seemed to be getting it wrong. The com ports 1 and 2 seemed confused. I took the cover off and found that the actual RS232 plugs were plugged on the wrong sockets.

I tried again. Success. I could hardly believe my eyes as my TI file of 500 sectors slipped over to the IBM. I was elated. Nothing could stop me now, well not for the five minutes it took to transfer the file.

With my file safely on my IBM machine, I planned my strategy. I would simply bring up the file with an editor, process it as ASCII code and import it into my Q&A Database. Then the fun really started. No editor would accept a file this big. I tried a number of different editors.

Well nuts to windows. Nothing. Finally after trying at least six editors, I found one which could deal with the size, approx 125k. Joy 0 joy, it read it, and took out all the extra wasted space in the PR Base system.

I decided to try to load it into the spreadsheet, Aseasy. I checked the fields, and set up columns of appropriate widths. I called up the import utility, but nothing happened. It asked me if the data was data base format or ASCII. I told the truth, but it did nothing. Well it seems that in DOS systems, the programs identify the files by the suffix they carry after the full stop. My filename had no suffix of 3 letters. I slowly realised that you have to identify ASCII files by giving them the suffix .txt. I added this and tried again. Well a jumble of letters and numbers transferred to my spreadsheet. Things were happening, but much of it seemed to be garbage. Well back to the drawing board. I put the file in the editor again, and found that it was saving it in lines of 256 bytes. There were two actual columns of data, which had been neatly separated. I had to move each alternate record back into place, in a single column, and get rid of all the unwanted space. It took quite a long time.

Back to Aseasy I went, full of confidence. I called up the import ASCII utility, and tried again. Eureka, it worked. My files just flew on the spreadsheet. Column sizes were wrong, while headings confused everything, but I finally sorted it out, and found that I had a workable spreadsheet.



Flushed with success. I decided to try my luck with Q&A. I set up a database with the right number of fields, and sufficient space in each field to accommodate my data. I dialed up import data, and tried again. Though it made encouraging noises, nothing happened. I found out something important. Each field must be delineated by a comma or colon, and each record must have a carriage return. Back to the editor and the jumble of ASCII on screen, I spent the next four hours typing in the carriage returns and the commas for the five hundred records. Other members of the family were giving me helpful advice. Advice like "if you had typed it all in your database in the first place, you would have saved a week's work." "Why are you wasting your time on that silly task, when the lawn needs mowing?" "You promised to do it last month, and you haven't done it yet. I could type it in for you, while you finish some jobs" etc. I resisted all the thoughtful suggestions, and slaved over my database. I was determined to get it in.

With my final edited version finished at 2 am. I had one last attempt. I called up Q&A, the import facility. I selected ASCII and the new database name. I pressed enter. At last, my TI database in Q A. There were a few bugs like all one field was in the wrong place, but the data was there. I collapsed into bed a very happy little vegemite. Success was mine and mine alone. Against all odds I had triumphed, though the very gods had conspired against me.

Was it worth the effort? I think so. The database is working so well. It sorts completely in less than 2 seconds, not 2 minutes. I can use the mailmerge facility. I can put data in the word processor. But most of all, I did it, myself. In the process I learned a lot about transferring data between machines and programs. I learned a lot about file editing, and data bases, as well as using the RS232 connection more effectively. Would I do it again? I think the answer has to be "yes".

This little exercise highlighted again to me how different active club members are from the usual computer user. We are far more self reliant. We are more easily motivated and challenged by computer tasks. I suspect that the most satisfying things we do are those difficult things we achieve for ourselves.

Well I'll see you at the next meeting
Dick Warburton.

END OF ARTICLE

How to contribute to your Magazine

All ☐ or ☐ or ☐ posted to C/O 3 Storey St Ryde 2112 Australia

We are able to publish articles forwarded to us in the following manner.

- Printed letters or articles
- Articles left on the TI, BBS, IBM or TI computers can leave TEXT files. (PH. NO.02 4564606) *Free to all TisHUG members*
- TI Computer floppy disks....5.25" DSDD or DSSD.....Text files, Funnelweb or TI Writer
- IBM compatible Floppy Disks.....5.25" or 3.5", we can process - text files, Word for Windows ver: 1.0 - 6.0, WordPerfect, and Word for Macintosh ver: 5x. (on a IBM formatted disk)

These items can be posted to the above address or could be handed to the Editor or one of the Club Directors. Please put your name on the disk so it can be returned

DISK ASSEMBLY FILE FORMATS.

DISPLAY FIXED 80 (UNCOMPRESSED)

Tagged object code may be loaded by option 3 using E/A, option 1 using Mini Memory or using CALL LOAD in TI BASIC with either the E/A or MM modules. It can be ABSOLUTE or RELOCATABLE. The Absolute code must always be loaded at the same place in memory while Relocatable code can be loaded anywhere. If the Tagged Object has references to other files or subroutines they will be resolved by the loader, except in the case of the XB loader. If source code does not contain an AORG directive then the code will be, by default, relocatable.

COMPRESSED TAGGED OBJECT code is like Tagged except that the program data is saved in bytes allowing it to load faster. It contains characters outside the printable ascii range and cannot be modified by the E/A editor. Compressed object files are created by using the C option with the assembler. They are NOT loadable by the X/B loader, however they are loadable by basic under E/A and E/A option 3 etc.

MEMORY IMAGE format is the most compact and the fastest loading of Assembly programs and can be stored on disk or cassette. It is identified as a PROGRAM file in a disk catalog and can be loaded with option 5 using E/A, or option 3 using TI-Writer. Please note that the screen will go blank and must be turned back on by the program itself after loading is complete. Memory Image files are produced using the SAVE utility on the E/A disk "B". Memory Image files like BASIC programs can be accessed from/to any I/O device with a single I/O call. That is why they load so fast. There is a size restriction for

MEMORY IMAGE FILES OF 8192 BYTES, (hex 2000), although the E/A the TI/WRITER Modules will load multiple Memory Image files to make a larger program. The loader does this by looking for files after the initial file is loaded whose filename is similar except for the last character which is incremented by one. EXAMPLE: The file GAME is loaded. The loader then looks for GAMF, GAMG etc.. if such files are required due to program size. MEMORY IMAGE assembly files have a 3 word header followed by the data to be placed in memory as follows: 1) The first word is a 'FLAG'. If it is not 0 (zero) i.e. >FFFF then this file is not the last in a multi-file program. For example, if the flag for GAME is >FFFF then there HAS to be at least a file named GAMF, etc.. 2) This word is the length of the Memory Image file in bytes, including the six byte header. The largest value here is >2000. 3) This word is the CPU RAM address where the file is to be loaded. Execution always begins at the first byte of the first segment loaded. Retyped for TEXPAC BBS by John Ryan, edited by Ross Mudie.

END OF ARTICLE

THE TI88, ANOTHER "NEVER RELEASED" HARDWARE PRODUCT

by Charles Good, based on material provided by member Palmer O. Hanson Jr.
Lima Ohio User Group

ORIGINALLY PUBLISHED IN LIMA NEWSLETTER

About 7 months before the first public showing of the CC40 and 99/2 computers, TI announced with great fanfare a top of the line programmable calculator named the TI88. According to the background information that accompanied TI's May 26, 1982 first press release about this new product, the TI88 would form "the basis of a new portable computer system." This calculator was displayed at the Summer 1982 Consumer Electronics Show, and photographs of the TI88 exhibit at this show appear on page 13, volume 1, no 6 of 99er MAGAZINE. The TI88 is also illustrated and described in a short article in the November 1982 issue of 99er MAGAZINE. Then TI withdrew the product and apparently replaced it with the CC40 which debuted at the January 1983 CES. Reasons for the early demise of the TI88 and TI's change of emphasis toward products like the CC40 are discussed in some detail by Herb Shanzer, then manager of TI's Calculator & Compact Computers Division, in an interview published in the April 1983 issue of 99er HOME COMPUTER MAGAZINE (p45-48). Apparently TI thought that a small computer with built in BASIC would have more consumer appeal than an upgraded programmable calculator. Only a few working prototypes of the TI88 ever reached private hands.

Our member Palmer Hanson Jr., who is also current editor of TI PPC NOTES, the newsletter of the TI PERSONAL PROGRAMMABLE CALCULATOR CLUB, has provided the Lima UG library with extensive documentation on the TI88. This material includes the full text of the May 26, 1982 press release, a four page descriptive illustrated brochure published by TI, a very incomplete "1st revision" of the TI88 USERSral issues TI PPC NOTES that contain articles and programs relating to the TI88. Maurice E. T. Swinnen, editor of the TI PPC NOTES in 1982, had an actual TI88 to play with. We can loan or copy this material for anyone who is interested.

One of the documents Palmer provided was the 1982/83 catalog of PERSONAL COMPUTER

PRODUCTS INC., of Dallas Texas. (This company is no longer in business.) The catalog includes products by Hewlett-Packard, Sharp, and TI, and has a two pages devoted to the TI88. Sometime in late 1982 a disgusted member of the TI PPC, upon learning of the non-release of the TI88, doctored these pages a bit to show his dismay. This amusingly altered catalog page is reprinted here. The page's text gives a good general description of the capabilities of the TI88. It is interesting to note that this calculator is designed to accept up to TWO solid state modules SIMULTANEOUSLY, providing it with extra RAM and/or preprogrammed software.

The following is quoted from pages 4 and 5 of THE PORTABLE COMPUTER AND CALCULATOR CATALOG 1982/1983, distributed in 1982 by Personal Computer Products Inc., P.O. Box 190198, Dallas Texas 75219-0198. The TI88 calculator described here was never released.

"The Texas Instruments TI88 represents a major advance in programmable calculators. Ease of use was obviously a primary design consideration in its development. Existing software can be run and programs can be developed with the calculator prompting the user through each step. This breakthrough allows prompts to be answered with the yes and no keys, or with the appropriate data entry.

Programming is also made easier because formulas can be entered into the calculator exactly as they are written, even those formulas utilizing scientific and engineering notation. The TI88 satisfies the advanced programming requirements of the professional user, yet is designed to be friendly enough for non-technical personnel to use the preprogrammed software.

"This calculator has 230 built in programming and slide rule functions that reduce the time spent on repetitious calculations. Programming features allow the user to trace program development on the calculator display. These include 10 user definable keys, 126 program labels, 10 subroutine levels, 24 user flags, 4 system flags and a program counter. The time and date alarm enables the user to schedule programs. The Evaluate key allows the user to enter formulas and evaluate them repeatedly with variable values. The TI88 has a full range of statistical features including two variable statistics. The 16 character dot matrix alphanumeric display draws from a set of 128 characters. The characters include upper and lower case letters with special symbols for advanced programming.

ORIGINALLY PUBLISHED
IN LIMA NEWSLETTER
JUNE 1991

A MATH COPROCESSOR FOR THE 99/4A
by Charles Good
Lima Ohio User Group

"The internal memory capacity is 960 program steps or 120 data memories. Two ports in the back of the TI88 will accept nonvolatile memory modules or Solid State Software modules. Each memory module holds up to 1184 program steps or 148 data memories. This gives the TI88 a maximum configuration of 3328 steps or 416 data memories. Each module holds up to 10 programs; and the calculator display shows the number of programs stored and the number of steps still available. The memory modules can be protected, edited, erased and duplicated. They retain the programs for 5 to 8 years, even when removed from the calculator. The importance of the memory modules now is that customized program libraries can be produced, copied and distributed to other users. All modules are compatible with other TI88's.

"Software modules contain up to 15000 preprogrammed steps with multilingual prompts and an instruction manual to guide the user through the program. A master library of 12 programs is included with the calculator. Additional libraries are available for statistics, electrical engineering, finance and mathematics. There is a library being developed that will aid users in converting existing TI58C/59 software to the TI88.

"The calculator comes with an AC adapter/charger. The rechargeable battery supplies up to 150 hours of continuous use per charge.

"As powerful as the TI88 is by itself, some users will require the addition of peripherals. Up to 6 peripherals can be connected simultaneously. The PC-800 thermal printer gives the user the ability to trace program development and prints 16 characters per line at 3 lines per second. The printer will also list contents of program memory, special operating codes and flag settings. The CA-800 cassette interface is used for low cost, reliable storage and retrieval of programs that are repeated often. This interface can be used with audio, micro or digital cassette recorders. The user is prompted through the steps for reading and recording programs.

"The entire system is versatile enough for sophisticated programmers and friendly enough to actually be used by beginners with little or no prior computer experience.

"TI88: \$260

"PC-800 Printer: \$150

"CA-800 Cassette Interface: \$50

END OF ARTICLE

A math coprocessor can do mathematics independent of a computer's main CPU. When using such a coprocessor the effect is similar to running two programs simultaneously. The coprocessor does its calculations while the main program continues to run uninterrupted. The results of the math coprocessor's calculations can then be fed into the main program. For example, have you ever used MULTIPLAN and wanted to recalculate one small part of the spreadsheet instead of waiting and waiting for MULTIPLAN to recalc the whole thing? Or have you ever been in the middle of an accounting program, such as one designed to balance your checkbook, and wanted to do a little quick calculating. In a BASIC program you can usually press CLEAR. Then from command mode type PRINT followed by your calculations. Pressing ENTER gives you your answer and then you can type CON to continue the program. This is rather cumbersome, and the program's screen display is disrupted. With an assembly language program you don't even have this option.

Well, let me introduce you to the TI-7000 math coprocessor. This inexpensive peripheral attaches to the 99/4A console just above the keyboard. It uses no extra power and is always available to do independent calculations which can then be fed into the main running program via the 99/4A's keyscan routine. Permanent or temporary installation can be done by anyone following the simple instructions that come with the installation kit, since no soldering is required. I paid \$4.93 for my TI-7000, and an additional small sum for the installation kit. Every serious 99/4A user should have one of these.

The Texas Instruments TI-7000 is a credit card sized solar powered calculator. No battery is ever needed. It can be permanently mounted to the flat area above the 99/4A's keyboard with super glue, or can be temporarily attached using double sticky tape. It's nice rubberized keys give a tactile response when they are pressed, and the LED display is easy to read. It has + - * / and % keys and includes one memory. I bought mine at WAL-MART. Output from the TI-7000 is entered into the 99/4A via the keyboard, which is of course detected with the 99/4A's keyscan assembly routine.

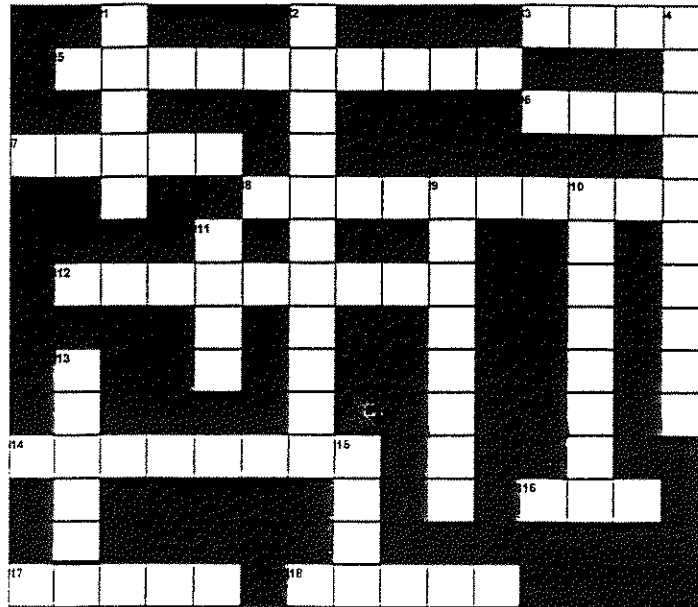
How about a battery backed clock/calendar for the 99/4A?

END OF ARTICLE

Transportation

Across

3. London streetcar
5. car
6. two-wheeled vehicle
7. pioneer transport
8. whirlybird
12. trolley
14. child's riding toy
16. fast airplane
17. large transport vehicle
18. bus



Down

1. old time family veh.
2. car with movable top
4. two wheeler with engine
9. horse drawn vehicle
10. three-wheeled cycle
11. cab and trailer truck
13. engineless plane
15. large luxury sedan

TRANSFERRING MULTIPLAN FILES

Between the TI-994A -GENEVE and the IBM Clone

You will need the program "PC Transfer" and "PC Transfer Utilities" for the MYARC disk controller and two double sided disk drives. These programs are distributed by 9640 News & Beery Miller. the following was tested using a TI-99/4A and a

Gateway 2000 IBM clone running Quattro Pro SE. These procedures should work with any IBM spreadsheet that will import files in the Symbolic Link format.

Begin by running Multiplan on your TI. Load the file you wish to transfer to the IBM.

1. Press T(ransfer), O(ptional), S(ymbolic), ENTER. This sets all transfer operations to the symbolic link format.

2. Press T(ransfer), S(ave), and type in a new file name so that you do not overwrite the original file. or you may want to save the new file to another diskette. (Recommended)

3. If you want to transfer more than one file you have to reset the normal mode for Transfer operations. Press T(ransfer), O(perations), N(ormal), ENTER. Load the next file to be converted and repeat steps 1 and 2 above.

4. When you have saved all the files you wish to transfer, exit Multiplan and insert the Extended Basic cartridge in the console. Insert the PC Transfer diskette in drive 1 and select Extended Basic, PC Transfer will auto load from DSK1.

5. Using the prompts on screen, select a DOS drive and a TI drive.

6. At the "Conversion File Name" prompt type : DSK1.SYLK and press ENTER.

7. You may now remove the PC Transfer diskette from the drive. Insert the disk with your TI files in the designated TI drive, and either a blank diskette or a DOS formatted diskette the designated DOS drive. Note: It is possible to format a DOS diskette with "PC; Transfer" but it is a very slow process. I recommend using a formatted 360k DOS diskette.

8. Load the TI disk catalog.

9. Select the files to be transferred by pressing C whenever the cursor is next to the file name. Use the space bar or down arrow to move down through the list of files, the up arrow allows you to move back up the list.

10. When all files have been selected, press E to execute the procedure.

11. You will be asked for a DOS file name for each file to be transferred. Type in a file name using up to eight characters plus a period and SLK (e.g. MYFILE.SLK) and press ENTER. The file.

12. When all the selected TI files have a DOS file name entered the transfer procedure will begin. Take the DOS diskette to your PC clone, load your spreadsheet program and either open or import the file from the diskette. All data and Formulas should be transferred to the DOS spreadsheet. You may have to make some changes in some cells as to how the data is displayed.

END OF ARTICLE

CHILDREN'S CORNER

by Margaret
Aloha 99ers, Honolulu, Hi.

from pages of the SPIRIT OF 99 newsletter,

BACKWARDS

For those of you who like to play around with letters, here is a little fun for all. It is quite humorous at times to see how the sound of a name or word is when it is spelled backwards. Try it out.

```
100 REM TAKE A NAME AND PRINT IT
BACKWARDS
110 DEF BACK$(X).SEG$(NAME$.X,1)
120 INPUT "NAME? ":NAME$
130 FOR I=LEN(NAME$)TO 1 STEP -1
140 BNAME$.BNAME$&&BACK$( I)
150 NEXT I
160 PRINT :NAME$:BNAME$
```

BREAKED OUT

Here is one for you TI'ers that are freaked out with space or just with weird sounds. Loads of fun. Good for space game programs. Press FCTN 4 to stop the program.

```
100 CALL INT :: FOR J=1 TO 100 :: PRINT J ::
FOR P=1000
TO 1 STEP -J :: CALL LO AD(-31456,P):: NEXT P ::
NEXT J
```

GRAVEYARD

If you think FREAKED OUT is something, just watch the ghosts jump from one part of the graveyard to another in this minigame. This is an excellent exercise in developing random barriers for your game programs.

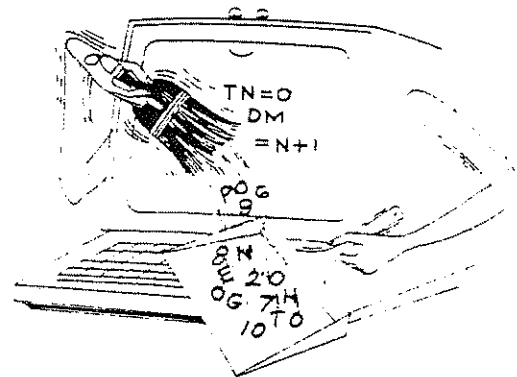
```
100 REM GRAVEYARD
110 CALL CLEAR :: CALL SCREEN ( 2 ) :: CALL
CHAR ( 108, "003C7E7E7E7E7E7E" ) :: CALL
HCHAR ( 24, 3, 108, 7 ) :: CALL HCHAR( 24, 15, 108, 5)
120 CALL COLOR(10, 15, 2):: RANDOMIZE ::
R=INT(24*RND)+1 :
: RANDOMIZE :: C= INT( 31* RND ) + 1 :: FOR
D=I TO 100 :: NEXT
D :: CALL SCREEN(16)
130 CALL SCREEN(2) :: CALL CLEAR :: CALL
HCHAR( 24 , 3, 08, 7 :: CALL HCHAR(24 . 15, 108, 5 )
:: CALL CHAR ( 56, "003C5A7E5A66562A" )
```

```
140 CALL HCHAR(R, C, 56) :: CALL COLOR(4,
16, 2) :: GOTO 120
```

MATH MADE EASY

The following minigame is an excellent example of how to begin setting up a math quiz for children.

```
100 REM " MATH MADE EASY "
110 CALL CLEAR
120 PRINT TAB(4);"THIS IS A SMALL MATH
PROGRAM"
130 PRINT TAB(4);"IT CAN EASILY BE
CHANGED TO"
140 PRINT TAB(4);"MULTIPLY, DIVIDE, ADD
AND SUBTRACT"
150 PRINT TAB(4);"BY CHANGING THE
MNMATH SYMBOLS"
160 PRINT :
170 PRINT TAB(4);"IN LINES 200 AND 210"
180 PRINT :::::
190 FOR D=1 TO 3000 :: NEXT D :: CALL CLEAR
200 FOR A=1 TO 10 :: FOR B=1 TO 10 :: C=A*B
210 PRINT A;" X "B;" = "C :: NEXT B
220 FOR D=1 TO 1000 :: NEXT D :: CALL
CLEAR :: NEXT A ::
END
```



initialize



Tech Tips originally published in Your Computer February 1994:

- Tseng colours
- How fast is VL-Bus
- Printing problems
- Losing time
- Memory and games
- Temporary path
- Disappearing data

Tseng colours

Recently I purchased a Tseng Labs ET4000 true colour SVGA card. The card was advertised as being capable of displaying 16.7 million colours (12-bit colour) at 640 x 480 resolution. The card appears to work perfectly, but unfortunately the accompanying manual supplies no information as to how to put the card into this 'true colour' mode.

There is no information as to how the CPU registers should be loaded, or which interrupts should be called, nor any information as to how to write a pixel to the screen in this (or any other) mode. I have contacted the retailer who supplied the card for this information, but so far they have been unable to help. Neither the box nor the manual gives the address of the manufacturer or the Australian distributor. I would

be grateful if anyone could give me the necessary information.

Michael Buck

One of the side-effects of the consumerisation of the PC industry, is that fewer and fewer products ship with much in the way of technical documentation. Whereas once upon a time the manual would be chock full of specifications, nowadays you're lucky if the manufacturer tells you what all the jumpers are for.

I passed Mr Buck's letter on to Anabelle Bits — a Sydney-based company which handles a number of Tseng Labs products, and following is their reply:

The ET4000 graphics controller chip can address a maximum of 256 colours; you cannot write directly to its registers to display more than 256 colours. The chip however supports an external palette RAM interface, which can access an external digital to analog converter chip (DAC) to display more than 256 colours. I suggest that you obtain a programming reference manual for the Tseng ET4000, which details the external DAC read and write controls. You will also need a programming reference manual for the particular DAC installed on your video card.

Most applications will require a driver to access the Hi-Colour capabilities of your card, and the easiest way to get the latest drivers is by using your video card manufacturer's bulletin board service.

*David Haas
Service Manager
Anabelle Bits*

How fast is VL-Bus?

I have been given the opportunity of swapping a recently purchased VESA Local Bus motherboard for a 66MHz DX/2 board for a relatively small fee. My computing needs are fairly performance-oriented, so I run a Promise VL-Bus caching controller and a VL-Bus video card as well.

From the information I've managed to piece together, I understand that the VESA bus standard is limited to 40MHz, which means that on a 50MHz motherboard, the speed of the VL-Bus slots is forced to default back to the standard ISA speed of 8MHz, which means that the only benefit of the VL-Bus on a 50MHz motherboard is the increase from a 16- to a 32-bit data path.

It would seem that the 33MHz motherboard with the DX2/66 processor would

theoretically allow four times faster communications with the VL-Bus peripherals than the 50MHz board. If you could write a brief reply indicating whether my reasoning is write or wrong, I would be very grateful.

Stephen Hovarth

I haven't seen the VL-Bus specifications myself, but as far as I know, 50MHz is its top speed. However, due to the more critical timing parameters at this speed (as opposed to 33MHz), only two VESA expansion slots are recommended, rather than the three that are possible on a 33MHz motherboard (as used by 33MHz and clock-doubled 66MHz processors).

Unfortunately, Mr Hovarth's fax arrived on my desk sans cover-page, so I was unable to reply personally. Hopefully he will see the reply in the magazine before making his purchase decision.

Printing problems

Up until about six months ago, I was using an old faithful Amstrad PCW, on which I wrote a lengthy book, among other things. The only problems were lack of compatibility and slowness. Circumstances demanded that I change to an IBM compatible, and I am now the proud owner of an Optima 486SX/25. On this I operate Wordperfect for Windows 5.2, and Microsoft Access 3.0.

When I bought the gear, it included a Panasonic 24-pin dot-matrix printer, and I struck trouble straight away, because the printer driver was not up-to-date with the printer type. But worse, the printer would not keep in register when using continuous fanfold paper. The printing gradually 'crept', until after about 10 pages it was printing over the perforations! I did not experience this problem with the Amstrad.

I got rid of the Panasonic and bought an NEC P3200, because their technical people said I would not have any problems with it. I did. It 'crept' too! In desperation I bought the cut-sheet feeder attachment, and that solves the problem. It has the disadvantage, however, of needing a watchful eye on the bin, lest it runs out of paper. Apart from this creeping, I am very pleased with the NEC machine, which is giving me excellent results. Have you experienced this problem, and is there a solution?

The other problem did confound me. If one wishes to print a number of copies in Wordperfect, the program locks one out un-

til an equivalent number of instructions has been sent to the buffer. If one wishes to print say, five copies of a multi-page document, one is kept waiting for a considerable length of time before the printer starts up and the computer is accessible once more. Neither Microsoft or Wordperfect seem to have an answer to this problem. Did I make a mistake in opting to use Windows?

Philip Harris

The solution to your creeping paper problem almost certainly lies in the fact that Windows originates in the USA — a country which seems to take intense pride in doing things differently from the rest of the civilised world. While we and Europe tend to use A4-sized paper for our day-to-day correspondence, which is 297mm long, Americans use a funny size called US Letter, that happens to be 11 inches in length (remember, this is an American size). This works out at approximately 18mm less than A4, so the printing will gradually creep up the page when supplied with the larger paper.

To check this, go to the 'printer' section in Windows' Control Panel, select your particular printer in the list box, and then click the 'Setup' button. A dialog box will appear with a number of configuration settings — one of which is the paper size. Set this to A4, then click 'OK' to save the settings, and then close the printer and Control Panel windows.

There may also be a similar setting for the printer itself. Normally this won't make any difference, but if you are in the habit of forwarding paper manually using the form feed button, at the end of a print job, it becomes important. This is most likely a DIP switch setting — check the printer's manual for details, and make sure that it, too, is set to A4. No doubt the Amstrad never had this problem, because being a British machine, it came pre-set with the international paper size from the outset.

Now for your second problem — waiting for the application to finish printing. This is a common limitation of Windows software — Windows doesn't support multi-threading, so an application can only do one thing at a time. There's no reason why a program can't multi-thread internally, just that hardly anybody seems to do it, at least in Windows (good ol' Wordstar 4.0 for DOS could print one document while you edited another). You might be able to switch back to Pro-

gram Manager (using the Alt-Tab key combination) and run another copy of Wordperfect, but don't try to open the file that you're trying to print.

When multi-threading operating systems such as OS/2 and Windows NT become more popular (which is not likely to happen tomorrow), and proper multi-threading applications arrive to take advantage of this facility, then you'll truly be able to walk and chew gum at the same time.

Until then, be thankful that you've got Print Manager, so that you only have to wait for the application to process the print job, not for the printer to actually finish printing it!

Losing time

For some time, in fact, probably since my computer was new, I have had two problems with its time of day clock. The problems are not serious, and I can probably live with them, but I would appreciate it if you could suggest a solution, or at least an explanation. The computer is an Amstrad PC2086 (XT compatible), with DOS 3.3, a VGA display, and a Star NX-1000.

Firstly, the DOS clock loses time when I am printing via an application program. This happens when I use Microsoft Works, and VDE Editor. It probably happens on all applications, but much of my printing is originated by those two. I don't think it happens with the DOS print command, but I'm not sure — I don't use this anyway. The clock appears to stop incrementing the time whenever the computer is actually communicating with the printer, and the time lost is around 75-80% of the printing time. The problem is not related to a conflict with TSRs or drivers, as it occurs when none (other than ansi.sys) have been loaded. Fortunately the hardware clock is not affected, and DOS picks up the correct time on the next boot.

On the other hand, when I use Microsoft Flight Simulator, the clock gains time. On returning to DOS, the DOS time has gained, and in this case the hardware clock is also affected. I have not found a direct relationship between the gain and the time in use of Flight Simulator, but have experienced gains of at least 30 seconds.

Derek Bateman

It sounds like the applications that are causing the loss of time are disabling interrupts, perhaps to improve printing

speed. Since clock ticks are measured by DOS by counting interrupts (after being initially set from the hardware clock), disabling interrupts stops time as far as DOS is concerned.

It's a while since I delved into the workings of an XT, but if memory serves, there is usually a utility which is used to load the DOS time from the hardware clock on boot-up. You might want to put Works in a batch file, with this utility after it, so at least the time will be right after you exit back to DOS.

As for why the hardware clock gains time when running Flight Simulator — I can't really explain it. Perhaps Flight Simulator is using an interrupt or an address that is somehow involved with your clock chip's perception of time. Or maybe it's just your guardian angel making sure that you get some rest and recreation after all that hard work (at the same time as bringing the clock back to reality after printing).

Memory and games

It is a sad thing to be unrequitedly in love, I can tell you. The truth is that I am in love with my computer, yet my computer is completely indifferent to me.

Oh, I can handle the elementary aspects of computing all right, but as soon as subtle insights are required, she goes in search of someone else. She's not interested in me. I know this because every once in a while I get all involved with DOS for Dummies, on the track of some great scientific discovery, and so far have obtained only two kinds of results — completely correct findings that are old hat, and completely new findings that make no sense whatsoever.

It has been suggested though, that somewhere deeply embedded in the confinements of my brain, there is skillfully hidden an encrustation of stupidity. Although that offers a perfectly logical explanation for my aforementioned shortcomings, the latter never really appealed to me. OK, I am middle-aged and find it, at times, hard to keep pace with today's technology, racing along at warp-speed, but I dare those who cast a stone at us less enlightened. Besides, it isn't always (so-called) progress itself some of us find difficult to follow, it's the problems that progress creates, and which race along at equal speed, of equal magnitude.

Computer technology is no exception, especially when it comes to hardware and

software compatibility. Allow me to furnish you with one small example. I recently bought my son a software package from Maxis (Sim Life, the DOS version) for his birthday — one he had been dreaming about for months. When he found it on the table on birthday morning, it made his day, but not the days and weeks that followed.

Installation was a breeze, the rest a nightmare. 'Fatal error — previously installed software is neither VCPI or DPMI compatible' popped up on a black, empty screen. We tried every trick in the book — using F5 to bypass autoexec.bat and config.sys, to no avail. The special boot disk that the manual suggested did not invoke any error messages, but got us no further than the eye-catching, but alas, frozen, opening screen (including frozen mouse pointer). So close, and yet so far.

I feel sorry for the boy, and myself. Needless to say, neither of us has a clue as to what VCPI and DPMI stand for. I tried a few sources, but since I bought the program over the counter somewhere in the big smog, no one was really keen to help, or at least advise us.

Our system is a 486DX/33, with 8MB of RAM, Oak 2MB video card, 170MB hard drive, and a Mousepro mouse running in Microsoft mode.

Hans Stanislawski

Why is it that games — software written ostensibly for entertainment purposes — seem to cause more compatibility problems and consequent tearing of hair, than any other type of application software?

DPMI stands for DOS Protected Mode Interface — a standard way of running DOS programs in protected mode. This is the native operating mode of 386 and 486 processors, and provides software with powerful features (such as more memory) that aren't available in real mode (where the chip is basically a fast 8086).

VCPI — Virtual Control Program Interface — is another protected-mode DOS standard, which allows multiple protected mode applications to co-exist, and coordinates memory requests from the various running programs.

These services are normally provided by your memory manager — either as a built-in function, or through an add-on driver. The memory managers that come with DOS — himem.sys and emm386.exe — together provide VCPI support, but not DPMI. Quarterdeck's QEMM also provides VCPI support, and DPMI support is catered for by an additional driver that comes with the package. However, since you only seem to require support for one or the other, the DOS drivers should be adequate for your needs.

First of all, you should have the following lines in your config.sys file:

```
device = c:\dos\himem.sys
device = c:\dos\emm386.exe noems
DOS = high,umb
```

The 'noems' switch stops emm386.exe from providing expanded memory support, which is rarely needed nowadays. The third line loads part of the DOS kernel (the part of DOS that is always resident in memory) into high memory, leaving more room for your software. It also allows drivers such as that for your mouse, to be loaded into upper memory using 'devicehigh = ' statements (in config.sys) or loadhigh (in autoexec.bat).

Since memory (or lack thereof) is the biggest cause of problems with games, you should make sure that any resident software is loaded high in this way. If you're not confident to do it yourself, DOS' Memmaker utility can do it for you.

If the game still hangs on start-up, it could be a conflict with your mouse driver. Initially, try running the game without the mouse driver loaded (if possible) to see if it is a conflict with the mouse driver. This is another common cause of game compatibility problems.

Make sure you have the latest version of the mouse driver, or if you can get hold of a driver from another mouse (or even another mouse itself, for a test), try that. From your description, the mouse sounds like the type which can operate in either Microsoft or Mouse Systems mode — try using the other mode. ☐

PC security

I am currently displaying a few computers for the public, and my problem is concerned with the issue of security. Having set the computers up the way I want, is there any way I can disable the methods which terminate the loading of my autoexec.bat file, such as pressing F5 or F8 prior to the loading of the system files? Is there any way in which this problem could be incorporated into the autoexec.bat file?

I am also trying to write a test using the text editor in DOS, by writing a batch file. I am aware of the 'choice' command, which allows you to pick an option from a list, such as in a multiple-choice test. However is there a command which allows a written answer to be typed in, so an appropriate action can be performed depending on whether the answer is correct or not?

H. Ngo

Unfortunately, I know of no easy way to make a DOS-based PC secure. DOS was

never designed as a secure operating system — it was intended for use on stand-alone computers which (presumably) had some level of physical security to prevent unauthorised use. This helped make DOS a lot simpler than the operating systems used on multi-user minicomputers and mainframes of the day, and it was this simplicity that made it able to operate on the low-powered PCs around at the time.

The feature which allows you to step through the config.sys file with the F8 key, or completely bypass the loading of the config.sys and autoexec.bat files with F5 or the shift key, is a pretty new addition to DOS, so if you really do want to eliminate this feature the most direct way is to downgrade the system to DOS 5.0 (or an even earlier version). Bear in mind that in doing this you will lose the new features of DOS 6.x such as disk compression and better memory management.

This still doesn't prevent a user with even a little bit of knowledge from booting the system from a floppy, and gaining access to the system that way. Disconnecting the floppy drive is one possibility here, but most systems will halt at this point with an error, and require manual intervention to allow the boot process to proceed. If this is likely to be a problem, you're probably better off using one of the physical disk drive locks that are available.

The answer to your second query is almost a re-run of the one above. DOS batch files were never intended to be used as a programming language, although the after-market utilities industry has greatly enhanced its capabilities through the use of external utilities. But the fundamental design of the DOS batch system is at odds with the proper structured programming techniques that a project of any significant size really demands: making debugging and modification of the code easy (especially a year or two down the track, when you've forgotten how the whole thing works). So even with these add-on utilities, you can't create anything but the most basic programs. And there's nothing to stop the user pressing Ctrl-Break anywhere in your program and bringing everything to a screaming halt.



You'd be well-advised to abandon trying to stretch DOS beyond its capabilities, and take a look at some of the newer programming languages that are available (see our June issue for a run-down on the current crop of programming languages). Despite the implication of its name, Visual Basic is quite a powerful programming environment for small-to-medium projects, and is not all that difficult to learn. And it's available in both DOS and Windows versions.

END OF ARTICLE

FOR SALE

see the shop

386 mother board with AMI bios AMD dx/dx1-25 CPU	\$ 30.00
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Hex speed CD-ROM 16 Bit Sound Card Sterio Speakers, M/S Titles	\$ 335.00

For current pricing of items not listed please contact Cyril Bohlsen at the general meetings or Phone (02) 639 5847

NOTE : All prices listed are at time of printing, and may change at any time. Prices do not cover posting and packaging.

Q Not what it Simms

I've got a no-brand 386SX/33 (AMI Bios 1991) and have just tried to upgrade from 4x1Mb Simms to 2x4Mb Simms. The PC Bios check accepts the Ram but MSDos 6.22 Himem.sys reports unreliable memory at a given location. I've tried 2x4Mb Simms plus 2x1Mb Simms to fill all the slots. The motherboard manual claims to support 2x4Mb Simms. Before I pay for a board upgrade, have you got any ideas? I've tried the hardware section on CompuServe and received some excellent replies on parity checking, but my Bios does not allow the option to turn the parity off.

Simon Williams, Bristol

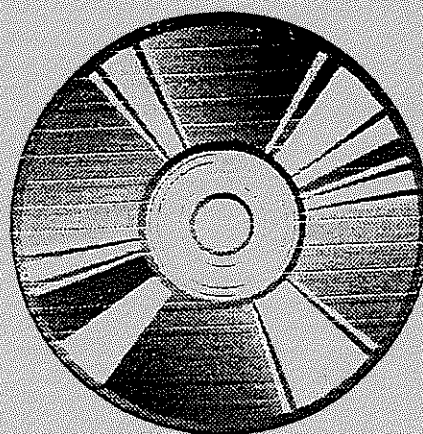
For a start this is *not* a parity error – parity is checked for by hardware and is not seen by software memory tests such as Himem's. Microsoft added memory testing to the latest versions of Himem.sys because they found a lot of *Windows* problems were being caused by memory faults which had not been detected by the relatively simple memory check performed on power-on. The kind of errors detected by Himem.sys are much more subtle and often caused by slight timing differences between different makes of chip.

There are a lot of possible causes of this kind of error. I think your problems may be related to different types of memory chip. If the newer pair of 4Mb Simms are slightly faster than the old chips (even though they have the same rated speed) some older chip sets can't handle the difference very well. Similarly, if some of the chips are the newer three-chip kind rather than the old nine-chip kind, this can also lead to problems, although they're supposed to be compatible.

Small timing differences, even at the same rated speed, mean that some brands of chip won't work with particular chipsets. Possibly this could be cured by tweaking some of the advanced Bios settings, but that should be a last resort. Then, it may be that this particular chipset can't handle having 4Mb chips in one bank and 1Mb chips in the other. So I would first try using just the new chipset and not the old ones and see if that makes a difference.

Secondly, you could see if there are any obvious changes that could be made in Bios settings. Some makes of Bios have two sets of default settings – one tuned at the factory for that particular motherboard, and one of very conservative values intended only to get the computer going in an emergency or for testing purposes. Unfortunately, often neither the labelling nor the documentation make it very clear which is which (for example, one may be labelled 'Bios' defaults and the other 'Setup' defaults). However, trying each in turn and then looking at the resulting differences should show you which is the slower set.

If these slower defaults cure the problem you will probably not want to leave them – that would be very slow. Note down both sets of values and experiment to come up with a set that uses as many as possible of the faster optimal setting while still avoiding the problem. If all else fails, you may end up having to exchange the chips for some other make – some brands simply don't work in some computers



REGIONAL GROUP REPORTS

Meeting Summary For JULY

Central Coast	13/07/96 Saratoga
Glebe	11/07/96 Glebe
Hunter Valley	14/07 21/07/96
Illawarra	09/07/96 Keiraville
Liverpool	12/07/96 Yagoona West
Sutherland	19/07/96 Jannali

CENTRAL COAST Regional Group

Regular meetings are normally held on the second Saturday of each month, 6.30pm at the home of John Goulton, 34 Mimosa Ave., Saratoga, (043) 69 3990. Contact Russell Welham (043)92 4000.

GLEBE Regional Group

Regular meetings are normally on the Thursday evening following the first Saturday of the month, at 8pm at 135B Arundel Street, Glebe. Contact Mike Slattery, (02) 692 8162.

HUNTER VALLEY Regional Group

The Meetings are usually held on the second or third Sunday of each month at members homes starting at 3pm. Check the location with Geoff Phillips by leaving a message on (049) 428 617. Please note that the previous phone number (049)428176 is now used exclusively by the ZZAP BBS which also has TI support. Geoff.

ILLAWARRA Regional Group

Regular meetings are normally held on the first Tuesday of each month after the TISHUG Sydney meeting at 7.30pm, at the home of Geoff Trott, 20 Robsons Road, Keiraville. A variety of investigations take place at our meetings, including Word Processing, Spreadsheets and hardware repairs. Contact Geoff Trott on (042)296629 for more information.

LIVERPOOL Regional Group*

Regular meeting date is the Friday following the Tishug Sydney meeting at 7.30 pm. Contact Larry Saunders (02) 644-7377 (home). After 9.30 PM or at work (02)708 1987

Liquorland YAGOONA for more information.

*** ALL WELCOME ***

12th JULY 1996
9th AUGUST 1996
13th SEPTEMBER 1996
11th OCTOBER 1996
8th NOVEMBER 1996
13th DECEMBER 1996

Bye for now Larry.
Liverpool Regional Co-Ordinator

SUTHERLAND Regional Group

Regular meetings are held on the third Friday of each month at the home of Peter Young, 51 Jannali Avenue, Jannali at 7.30pm. Peter Young.

TISHUG in Sydney

Monthly meetings start promptly at 2pm on the first Saturday of the month. They are held at the MEADOWBANK PRIMARY SCHOOL, on the corner of Thistle Street and Belmore Street, Meadowbank. Regular items include news from the directors, the publications library, the shop, and demonstrations of monthly software.

JULY MEETING - 6th JULY

AUGUST MEETING - 3rd AUGUST

The cut-off dates for submitting articles to the Editor for the TND via the BBS or otherwise are:

13th JULY FOR THE AUGUST MAGAZINE

These dates are all Saturdays and there is no guarantee that they will make the magazine unless they are uploaded by 6.00 pm, at the latest. Longer articles should be to hand well before the above dates to ensure there is time to edit them.