HOW TO FIX A 1541

-- WARNING!!! --

The following article details a method of repairing disk drives which are out of alignment. While we believe the information in this article to be accurate and reliable, the executive and directors of the club and those connected with the newsletter have not personally tried these remedies. They should not be attempted by anyone unfamiliar with the equipment or procedures described therein. Any such attempt to do so may result in serious damage to either your disk drive and/or computer. If your disk drive suffers from the complaints described in this article and is under warranty, your best solution is to return it to your dealer for repair or replacement.

The Commodore Computer Club, its executive and directors, and newsletter staff will not be responsible for any damage which results from a failure to observe this warning.

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By RAY CADORIN

The 1541 disc drive contains a 6502 microprocessor, 2K of RAM and ROM DOS, current version 5.

The drive determines the head position by reading the track and finding out from it which track it is on. On unformatted discs the microprocessor forces the read/write head to a position beyond track 1. Beyond track one is a head stop which stops the head from travelling any further. After hitting this stop about 6 times the micro determines that it is at track "0". It then advances the head one track to track 1 and starts to record data on the disk, stepping the head through all 35 tracks.

The 1541 was originally designed for the VIC 20 but was upgraded to the C-64 by changing the DOS. Since its introduction as a drive for the C-64 it has had many internal changes to the circuit board as well as the DOS. The first PCB was rev A. In March of 1983 they were shipping rev C. Currently they have an all new circuit board using CMOS chips instead of the TTL chips of the earlier versions. The older units using circuit boards with TTL (7400 series) chips, have 2 video amp chips with gains of up to 400 times each. It appears that these chips are heat sensitive and tend to break down after some time, causing the gain of the signal to drop off. These chips are NE592 or uA733 or LM733 chips. These chips (there are 2 of them in series) feed into a LM311 voltage comparator chip which squares up the signal and feeds it to a 9602 one shot for further signal conditioning. The 2 video amp

chips are used to amplify the signal coming off the read heads.

The mechanics of the drive seem to have several flaws. According to Jim Butterfield, drives made after September 1983 do not suffer from these problems as much. [Serviceman Randy Atkinson of Conti Electronics told a recent meeting of the club there is no mechanical difference between any of the drives, since they all use the same stepper motor mechanism. -- Ed.] All drives are, however, easy to align. The head stepper motor shaft is connected to a pulley which has attached to it a steel band which in turn is tied to the read write heads which slide back and forth on steel guides. The stepper motor shaft and the pulley are not permanently fixed together. There is slippage between the two parts and this is the cause of all the problems. When the stepper motor drives the heads past track 1 this pulley hits the back stop. On formatting, or even on positioning when the pulley hits the stop there is a very small amount of give between the stepper motor shaft and the pulley, thus when the head goes to read a track it will be slightly off center. However, because there is a certain tolerance width for each track the head will still read the data. Over a period of time (and many disks formatted) the head will be sufficiently out of

alignment to not read the track. If the pulley is allowed to continue to hit the back stop it will eventually throw itself so far out of alignment that it will be clear into the next track. When the CPU sees that it is reading data from a adjacent track, it will simply increment or decrement one track in order to read the correct data, in effect the head is now aligned again, even though it is one track out the CPU is smart enough to adjust accordingly.

This method of alignment is not very good because as the head is going out of alignment, so are your disks that you format. You may be able to read your latest disks but not the ones you formatted 4 months ago, because with each format your heads are slightly different.

The red light on the front of the disk drive is a good indication of head alignment. If this light blinks a lot while reading a disk then there is a very good possibility that it is out of alignment. [Ed. Note: Other indications of problems are drive failing Performance Test on Test/Demo disk, especially Write and Read Track 1, and inability to Read or Write to Track 1 with Disk Doctor.]

Many arguments exist pro and con about the need for slippage on the

THUS SPEAKS THE PRES.

By H. JIM BAUERLE

As most of you know, this is my first term as president of your club. I am as new to club leadership as some of you are to computing. I hope you will bear with me. There are some very exciting times ahead for all of us, although we should be aware that the road may not be as smooth as some of you may wish or even expect. Keep in mind the rapid growth of the club. It will take a real effort on the part of all members to make your club successful.

Some of you will think at this point, 'But I don't know anything about computers or computing -- that's why I joined the club'. This type of reaction is to be expected, but it does not mean that there is nothing that you can contribute to the well-being of the club. Some of you may have expertise in fields other than computing (i.e. sales, finance, organization etc.). All these skills will be of great worth to your club.

Please remember that it is not the president that runs the club but its members. Only when you as a member refuse to be part of your club can it be taken over by other elements. So stay involved in your club activities.

Let us, the executive and directors, know what it is that you expect, by attending your meetings and lending a helping hand when asked.

The Commodore Computer Club started out in 1977 with literally a handful of members. It was then called the Vancouver Pet Users Group. This core of dedicated users is still around today, but are drowned out by the flood of new users entering the market. Personally, I joined the club in 1979 out of self-defense, as in those days we had no documentation at all and had to rely on each other for information about our machines. In many cases we had spent a lot of money without getting much in the way of commercial instructions.

Out of this type of situation a certain kind of comradeship was established, that is still around, but I fear, much diminished. It is my sincere hope that this situation will change as more of you become aware of how important it is to share whatever knowledge you have. You do not need to be a genius to help check people in at the door, or to let them know who handles the club library, etc. It is these little things that most new members are having problems with.

As you know a brand new slate of

PRESIDENT'S MESSAGE

directors was elected at the annual general meeting, many of whom are brand new to the position. This is the kind of encouraging sign that we like to see -- people taking the plunge to help out. As president I would like to take this opportunity to thank all of the directors of your club for letting their names stand. Since we have had an opportunity for a couple of directors meetings since the election, I can say with great pride that you have a very capable group of people who so far have done an outstanding job and will continue to do so in the future, I am sure.

You will no doubt notice a few changes in the format of some of our meetings in the near future, which hopefully will meet with your approval. If you have any suggestions or would like to help, please do not hesitate to contact anyone of your directors, as you do not need to be an executive member yourself. At the moment we are actively looking for people that are willing to give short demonstrations or seminars at our workshop meetings for the benefit of our members (your choice of subjects -- remember you don't need to be a genius -- your chance to show off your pet project!).

Your directors have elected a fine group of people to head an *Education Committee*, which means that in the near future you will be able to learn all those things that you originally joined the club for. There will be announcements forthcoming at meetings and in the newsletter regarding seminars, classes and demonstrations, etc. Watch for these.

Now to a more sombre subject. As some of you may already know, there have been two successful prosecutions in eastern Canada regarding software piracy. The matter was dealt with as a case of theft rather than copyright violation, as Canadian copyright laws are at present pretty lax. However, a major revision of Canadian laws will be happening shortly and I suspect we will have to deal with the piracy problem in earnest very soon. There have also been raids on private homes in the Lower Mainland by the RCMP in recent times, to seize software for the purpose of prosececution.

In light of this, we will shortly incorporate a new paragraph on our membership application form that will deal with this subject. It is not the club's business what happens in people's homes, but please remember it is against club bylaws to copy copyrighted software at all club activities. Your club has a good public domain software library and is adding to it steadily, so there should be no need to copy commercial software.

PARANOIA DEPARTMENT

As computers continue to proliferate in offices, more and more managers are suffering from what consultants in the field are coming to call "computerphobia" or "cyberphobia," meaning fear, distrust, or hatred of computers. Sanford Weinberg of St. Joseph's University in Philadelphia has interviewed several hundred managers and college students who use computers, and tested some of them by wiring them up to a galvanic-skin-response measuring device while they worked at their terminals. He found that nearly one-third of these people were cyberphobic. About 5 percent actually showed symptoms of classic phobia: nausea, dizziness, cold sweat, and high blood pressure. One frustrated worker whom Weinberg interviewed dumped coffee and cigarette ashes into a computer console.

David Cossey, director of the Wharton Computer Center at the University of Pennsylvania, says that he has seen cases of "terminal shock" among MBA students at Wharton. He suspects that estimates of the prevalence of the problem may be conservative; many "closet cyberphobics" hide their fears because of peer pressure to extol the benefits of computers.

-- Reprinted from *Psychology Today*, August, 1983

FIX A 1541

stepper motor pulley, however the majority opinion is that Lock-Tite or Krazy Glue placed on the pulley will lock the two parts together thus preventing slippage. Another more permanent method would be to drill a "key way" hole and insert a pin between the stepper motor shaft and the pulley. In any case, after the fix is in it might not be a bad idea to scribe a line across the pulley and the shaft to see if there is any further movement. *INCIDENTALLY, ANY OF THESE QUICK FIXES OR ALIGNMENTS MAY VOID YOUR WARRANTY.*

Generally the back stop will not need any adjustment, but if it is felt that it is out of adjustment then you can set it correctly by placing the head on track 1 and adjusting the back stop for 15 thousandth of a inch of clearance with the head stop.

The heads should be cleaned regularly and also demagnetized every once in a while with iso-propyl alcohol, available at most drug stores for only a buck or so. DO NOT USE RUBBING ALCOHOL as it has impurities in it. Use cotton swabs to wipe the iso-propyl over the heads.

The screen shield over the main circuit board can be left off to allow the circuit to run cooler.

It should be noted that not all problems are due to the disk drive. Bad disks are common, as are disks borrowed from someone with a misaligned drive.

Incidentally, the track spacing on the disk is 1/100 of an inch so it wouldn't take much to misalign the drive.

* * *

The 1541 Disk drive can be aligned using a known good disk and an oscilloscope.

A recommended alignment disk is the Test/Demo disk that was supplied with the disk drive when it was new.

STEP 1. Remove plastic case by removing 4 mounting screws on the bottom of the drive (Phillips screws).

STEP 2. Remove disk unit from bottom of case by removing 6 more screws along the base of the drive.

STEP 3. Remove 2 screws that hold the metal shield on the top of the drive and remove the shield.

STEP 4. Locate integrated circuit UH4 (the only 8 pin IC on the circuit board). It is located near the front, about dead center.

STEP 5. Attach scope probe to pin 2 of UH4 (LM311N chip), attach the ground to pin 8 of IC UG3 (9602).

STEP 6. Power up the drive and load DISK DOCTOR. Set scope to 1 volt per 1 and .2mS horizontal.

STEP 7. Seek to track 18 or 17 and adjust stepper motor for maximum scope deflection. The stepper motor is held in place by 2 screws on the under side of the chassis. Loosen the screws just enough to allow the motor to move slightly under pressure. The disc must be rotating when checking output. When maximum deflection is detected tighten the motor mounting screws and recheck scope deflection. Disk is now aligned, check tracks 1 and 35 but do not adjust. Scope trace at track one is much greater than at 35.

STEP 8. To further check head alignment seek to track 1 and watch the read head as it goes there, it should go and stop without hunting for the track. Repeat for tracks 18, 35, 18, 1 in that order.

STEP 9. Seek head to track 1. Adjust back stop for 15 thousandths of an inch from the head stop.

STEP 10. Reassemble shield, remount disk in case, and install top of case. ALIGNMENT IS NOW COMPLETE.

PLEASE NOTE: Worn discs, and even different brands have different outputs. Adjust waveform for maximum deflection only, not for a specific value.

It is possible to align the disk drive without an oscilloscope. Two other methods have being tried and have worked.

METHOD 1: In place of the scope in the previous alignment instructions, a VTVM with a high impedance input can be used, adjust the heads for maximum deflection on the meter scale, at maximum deflection the heads are aligned.

METHOD 2: This method is somewhat hit and miss and is downright crude, but it works. Disassemble the drive as above and loosen the stepper motor screws and load a known good disk. Force the drive to read the directory (LOAD"$",8). If the red light on the drive flickers (does not stay on) then turn the motor very slightly counterclockwise and try again. Depending how far out your drive is it may require several tries. If you have to move the motor more than 1/16 of an inch then you might try try turning it in the other direction. If your drive is still out, you will have to take it in to have it adjusted or repaired.

Industrial standard alignment disks are availble for the 1541 drive. These disks have a pattern on them called a "cats-eye," which is used to perfectly align a disk, and is the only accurate way of aligning a disk drive. If you have to take your drive in for alignment, ask the service person if it will be aligned with a "cats-eye" alignment disk, if he doesn't know what one is or says you don't need one, then take your drive elsewhere for alignment.

IFR: '10 OUT OF 10'

By LARRY PHILLIPS

IFR, from Academy Software, is an instrument flight simulator thinly disguised as a game. The object of the game is to take off from an airport, fly to the other three airports, then return to base. This is accomplished by using only instruments, as if flying in a dense fog.

There are four airports, two of which are equipped with fuel and ILS (instrument landing system). In order to visit all four, you must cross a mountain range through one of two passes. The low altitude pass is narrow and winding, the other wide and straight, but over twice as high. There are six radio beacons to help you navigate, and these may be relocated by using the editor (more about that later).

The screen display consists of your instrument panel, made up of:

Compass - Watch out for crosswinds, they change your flight direction without changing your heading.

Airspeed - 0 to 199 mph. Audible stall warning.

Artificial Horizon - Gyro type, will 'topple' if roll angle is greater than 60 deg. or pitch angle greater than 30 deg., and may be repaired only at airports 1 or 2.

Altimeter - Height above sea level (not height above ground!).

Landing Gear Indicators - You can land when these are red, but it is rough, and you'll get a nasty message.

Flaps - Graphic indication of the angle of the flaps.

Fuel Gauges - Level of fuel in Left and Right tanks.

ILS - Instrument landing system. Shows when you are properly positioned to land (airport 1 and 2 only).

ILS Status - Shows which ILS system you are tuned to, and when you are within the outer, middle, and inner marker beacons.

Vertical Speed - Rate of climb or descent.

Turn Indicator - Editor allows choice of 'turn and bank' or 'turn coordinator'.

INS - Inertial Navigation System, showing the current position of the aircraft on the map in North and West coordinates.

ADF - Automatic Direction Finder, shows when you are flying toward the radio beacon selected.

DME - Distance Measuring Equipment, shows the distance in miles to the airport selected for the ILS.

A joystick is required, and controls left/right turn and nose up/down. The fire button doubles the control rate (great for those of us who get into tight spots). The function keys control the throttle, and all other functions are controlled by the keyboard. Available are:

Trim up/down
ILS tuning
ADF tuning
Gear up/down
Switch fuel tanks
Wheel brakes
Nosewheel steering   Flaps up/down
End flight/get score
Pause

The last two are not flight controls, of course, but are quite handy, especially the 'pause'. Press it to answer the phone, raid the fridge, or to study the panel to decide if you can possibly extricate yourself from the mess you find yourself in.

After loading and running the protected disk, you are asked to enter a skill level (0-9). This will determine amount of wind, maximum descent rate and airspeed when landing, and maximum altitude for full-stall landing. You will then be asked to set a turbulence level (0-9). Zero is perfectly smooth, while nine causes the airplane to roll, pitch, and 'bump'. The 'bumpiness' is very well indicated by a shaking of the instruments on the screen (they also shake quite realistically when you land with the gear up). You then have the choice of either taking off from airport 1, or entering the editor. The editor allows you to change the location of the radio beacons, change turn indicators, or to set up specific situations. For example, you might want to practice landing at a particular airport, in which case, you would set your altitude, heading, etc. so that you are already flying and in position to land.

The Documentation, though only 19 pages long, contains all you need. It covers instruments, controls, aircraft specs, use of the editor (with a few examples), basic flight, master map, detailed maps of airports, and many hints for using the simulator.

Not being a pilot, I can only guess as to the accuracy of the simulation, but it does seem to me that it is extremely accurate. I can definitely vouch for the fun and difficulty (for us non-pilots). The program is very well written and user friendly.

I would be interested in hearing opinions from IFR rated pilots. Until then, I personally give this one a resounding and emphatic 10 out of 10 rating. Score another winner from Academy Software.

THE GEMINI FILE

By TONY SMITH

If you need charts and graphs for work like me, here is a fast and easy method to produce bar charts (some people call them histograms) on the Gemini-10X printer.

This program reads variables and strings from data statements. Using sequential files is just as easy; these I find useful to compile data for use as figures accumulate throughout a time period, in this case for a year broken up into monthly reporting periods.

The month and units to be measured are printed in a column to the left of the page followed by the representative bar to graph the units.

The months are read as a string (M$) and the quantity measured as the variable "X". The bar is printed by dividing "X" into a usable quantity (X/100) so that the chart is not too wide to fit across the page. A FOR/NEXT loop is used to print the same graphic character -- CHR$(239) -- one after another to produce the bar.

Here is how the program looks:

First we open a channel to the printer:

```
10 OPEN4,4:CMD4
```

Then we give the chart a name:

```
20 PRINT "HISTOGRAM"
```

And a couple of line feeds:

```
30 PRINT CHR$(10) CHR$(10)
```

Then a header for the column showing the month and units we are measuring, tacking on a line feed for good luck:

```
40 PRINT "MONTH/UNITS" CHR$(10)
```

At this point the program reads the DATA statement for M$. Here we put in a trap to end the program if the end of data marker is found. In this case we test for the string "XXX", telling the program to skip to line 300 if the test is true.

```
50 READ M$:IF M$="XXX"THEN300
```

Then we read our next item from data; the variable X:

```
60 READ X
```

Next we want to print the information that will make up the left hand column, so we print M$ (the month), a backslash and the unit we are measuring -- "X". We are also going to throw in the CHR$(9) control code to jump to the next horizontal tab right after we have printed the month and the units:

```
70 PRINT M$;"/";X;CHR$(9);
```

Don't forget all those semi-colons! Line 70 is the beginning of the loop we use to print the block character (Gemini character 239) "X" times divided by 100:

```
80 FORY=1TO(X/100)
```

And then the other half of the loop:

```
90 PRINT CHR$(239);:NEXTY
```

Here we shove in a regular off-the-shelf model PRINT statement. This stops the next line from running into the line above or vice-versa, according to the way you hold your tongue. There are more intrinsic methods of doing this but a PRINT statement is just too easy:

```
100 PRINT
```

Then we send the program back to line 50 to print the next line:

```
110 GOTO50
```

Line 200 is our DATA statement:

```
200 DATAJAN,3000,FEB,2500,MAR,
    3200,XXX
```

To round it all off, we print an end of job statement, followed by a top-of-form control code -- CHR$(12). Then we close the channel and end the program.

```
999 PRINT"END OF JOB";CHR$(12):
    PRINT#4," ":CLOSE4:END
```

To most experienced programmers, this is a very academic program, but if you have just bought a Gemini (or other) printer, this method may be something for your idea file. When used with a little imagination this can be

A COMPLEAT GUIDE TO MACHINE LANGUAGE PROGRAMMING ON THE PET

By HAROLD BROCHMANN

ASSEMBLY LANGUAGE: INTRODUCTION [5-1]

At the end of the last section we left you with the suggestion you should write a BASIC program that would enter and call the ML code necessary to write your name at the screen's top.

Assuming your name is BILL, the MLM would reveal the following:

```
.M, 033A,033B
.: 033A A9 02 BD 00 80 A9 09 8D
.: 0342 01 80 A9 0C 8D 02 80 8D
.: 034A 03 80 60 ..............
```

ASSEMBLER LANGUAGE is the MNEMONIC equivalent for machine code. The above coding would look like this assembled:

```
033A A9 02      LDA #$02
033C 8D 00 80   STA $8000
033F A9 09      LDA #$09
0341 8D 01 80   STA $8001
0344 A9 0B      LDA #$0C
0346 8D 02 80   STA $8002
0349 8D 03 80   STA $8003
034C 60         RTS
```

There are several varieties of the LDA and STA instructions, depending on the type of ADDRESSING which is used. Let us look at STA $8000. This is known as ABSOLUTE addressing because STA makes reference to a specific ADDRESS; namely $8000.

By contrast, LDA ##$01 does not refer to an address but rather, to the NUMBER WHICH FOLLOWS THE INSTRUCTION. This is known as IMMEDIATE addressing.

LDA also has absolute addressing available. In this program the accumulator is loaded with the contents of an address referred to rather than the number which follows.

```
033A AD 00 80 LDA $8000
033D 8D 28 80 STA $8028
```

```
0340 AD 01 80 LDA $8001
0343 8D 29 80 STA $8029
0346 AD 02 80 LDA $8002
0349 8D 2A 80 STA $802A
034C 60       RTS
```

Enter this program using MLM:

```
.: 033A AD 00 80 8D 28 80 AD 01
.: 0342 80 8D 29 80 AD 02 80 8D
.: 034A 2A 80 60 ..............
```

Exit MLM, place three symbols in the top left corner of the screen and SYS 826. This should reproduce the three symbols on the screen's second row.

THE X AND Y REGISTERS

In addition to the Accumulator, the 6502 microprocessor has two other locations in which numbers may be temporarily stored. These are the X register and the Y register. Both of these also may also be loaded using either absolute or immediate addressing. This means that the either LDX or LDY could be used instead of LDA and STX or STY could have been used instead of STA in the the last program which printed your name on the screen. These codes apply:

```
LDX (immediate): #$A2
LDX (absolute) : #$AE
STX (absolute) : #$8E
LDY (immediate): #$A0
LDY (absolute) : #$AC
STY (absolute) : #$8C
```

ASSIGNMENT 5-1

Re-write the program which printed your name on the screen, using LDX and STX as well as LDY and STY.

INDEXED ABSOLUTE ADDRESSING [5-2]

We have seen that STA, STX, STY, LDA, LDX and LDY have more than one form of addressing, immediate and

absolute. The two other instructions we are familiar with, BRK and RTS do not seem to need addresses. We call their form of adressing IMPLIED.

LDA and STA have yet another kind of addressing: INDEXED ABSOLUTE.

```
033A A2 00      LDX #$00
033C A9 01      LDA #$01
033E 9D 00 80   STA $8000,X
0341 A2 01      LDX #$01
0343 9D 00 80   STA $8000,X
0346 A2 02      LDX #$02
0348 9D 00 80   STA $8000,X
034B 60         RTS
```

STA $8000,X means STORE ACCUMULATOR AT address $8000+CONTENTS OF X REGISTER.

This program would produce an A at $8000, 8001 and $8002; in other words in the first three screen positions.

In a similar way we could move the contents of the first three screen positions down one line with this:

```
033A A0 00      LDY #$00
033C B9 00 80   LDA $8000,Y
033F 99 28 80   STA $8028,Y
0342 A0 01      LDY #$01
0344 B9 00 80   LDA $8000,Y
0347 99 28 80   STA $8028,Y
034A A0 02      LDY #$02
034C B9 00 80   LDA $8000,Y
034F 99 28 80   STA $8028,Y
0352 60         RTS
```

ASSIGNMENT 5-2

Enter the last program using the MLM and execute it.

UPCOMING MEETINGS:

Tuesday, March 20, King Edward Campus — Monthly Business Meeting
Tuesday, April 3 — Thompson Secondary School Cafeteria — Workshop
CALL PET-3311 (738-3311) 24 hours for information

COMPUTER FAIR UPDATE

The Pacific Coast Computer Fair Association (PCCFA) had its modest beginnings a few years ago when computing as a hobby was more of a novelty than is presently the case. The Association was the offshoot of a meeting that was held between the presidents of several user groups to try to put together a plan for a hobby computer show that might attract more interest in the clubs.

The first fair was held at UBC in co-operation with its Department of Education. Competition was fierce because the Abbotsford Air Show, the fine summer weather and a number of other events all were competing for the attention of local residents. It was thought that, at the most, there would be 200 or 300 hundred people that would be interested and the facilities were laid out accordingly.

In spite of the weather, the other attractions and the short time available for organizing the event—it was slapped together in about three months—more than 1400 people attended causing more than one short temper. The response to this incredible influx of visitors was creditable. Everyone chipped in ideas and perspiration and tried to adapt to the circumstances as well as could be expected.

At the end of the day, it was virtually impossible to get the people to leave. The interest level was high and it was not until a road crew somewhere on campus shorted the main power lines and one of their workers sacrificed his life that the message got through to the participants that it was late and time to pack up. It is said that the screams from operators who watched helplessly as their disc drives crashed can still be heard late at night reverberating in the Education building.

This year, the 5th annual Computer Fair has grown into a sophisticated Association with an annual budget hovering around $65,000 which is well known for the quality of the free attractions it presents each year.

The Association recently conducted their annual general meeting and eleted Officers and Directors. The current President is Niels Hansen-Trip, who recently resigned as President of the Commodore Computer Club.

The PCCFA received two offers of purchase by other promoters and, after heated debate, decided to keep the Association non-commercial—resisting the chance to make a quick buck.

As a result, the PCCFA is undergoing some rather severe labor pains. It was obvious from the response to last year's fair that some kind of expansion was inevitable. More than 7500 enthusiasts jammed into the Media Centre to soak up a little atmosphere and share the fantasy with other cyberphiliacs. It is unlikely that Robson Square can withstand that kind of pressure for many more years and the Directors are madly seeking alternatives.

The original plan was to move the Show to the 'Dome' at B.C. Place, but the Association was unable to secure a suitable weekend and cancelled their booking for this year. Tentatively, B.C. Place is booked for 1985 and 1986, but sports events have priority and if football wants that weekend, football will probably get it.

When the Association returned to Robson Square to discuss their existing booking with the Media Centre, they were told by the new management that the rent increases would be so great that there would be little gain without a significant increase in the entrance fee and the cost of commercial booths. In addition, the Media Centre wants to take a very nice slice off the top of the gate receipts. It seems that our provincial government believes restraint is only for others and the coffers must be filled at the expense of the users. Perhaps, we can get in line for the traditional giveaway just prior to the next election.

If anyone has a counter proposal that would let us put on the fair at another suitable location, we would be happy to hear about it. Let your Club executive know about your idea and it will be passed on to the PCCFA. If we come up with a viable alternative, the Association could give birth to a new, larger format that would set Vancouver back on its heels.

One last item to consider is the programming contest that was announced at the last fair. A $1000.00 prize was offerred for the best educational application program produced by a student. To date, there has been little response and it would seem that there is an excellent opportunity for a club member who is also a student to make a piece of loose change. Details are available from the Association by writing to:

PCCFA Contest
c/o 12045 101 Avenue
Surrey, B.C. V3V 2Z2

Note that the prize is not a giveaway since the Association reserves the right to award no prize if a good quality program cannot be found.

64: OUT THE DOOR?

By NIELS HANSEN-TRIP

One of the most noteworthy events of the Consumer Electronics Show held Feb. 4-6 at the Hyatt Regency was the unveiling of Commodore's 264, the replacement for the successful "64". Another new Commodore entry, the 364 was not available for display.

There are features of the 264 that might cause difficulty for owners of existing hardware. One nasty surprise is that the configuration of the joystick and cassette ports has been changed to a small, round plug receptacle which means that common game paddles, joysticks, graphics pads and the familiar Datasette will not work without some kind of adaptor.

A new disk drive will also be needed for the 264. This will use a parallel port and, of course, will not be compatible with the 64. The new disk drive will undoubtedly be a blessing for buyers of new equipment but may only serve to frustrate the hundreds of thousands of 1541 owners who are stuck with a temperamental piece of equipment and cannot upgrade without some complicated maneuvering.

Typically, Commodore has announced the new product while stating that it is unavailable for purchase. Those who have been loyal Commodore fans from the early 70's will know that obscure production dates, waiting lists and products that never appear in Canada are almost a tradition. Don't hold your breath waiting for this one.

On the positive side, there are some developments in the software industry that may help to ease the problem of software piracy and eradicate the stigma that is attached to belonging to a computer club. At present, partly due to the outrageous cost of proprietary software that causes grown men to fall prey to video-game lust, stating that you are a member of a computer club is tantamount to admitting that you are public enemy number 2 or 3.

Bill Kenyon, sales representative for Advantage Computer Accessories, announced that their software division is attempting a new marketing strategy that will make aquisition of games and application software a lot easier on the pocketbook. Kenyon said that all forthcoming software offerings will be reduced in price from an average of $60.00 to $19.95. In addition, each package will contain both a tape and a disk. Advantage will also manufacture custom sales packages for programmers who feel they can do a better job of marketing than the company. Advantage has a machine that will spit out a disk every 11 seconds. Consequently, they can produce a run of a thousand packages very quickly. Interested? Contact Bill at:

1020 Meyerside Dr., Unit B
Mississauga, Ontario L5T 1K7
1-800-268-6920 Telex 06-968716

Tom Timm of VVC Distributing (581-6311) demonstrated a new method of vending software in cartridges. Essentially, the system requires a buyer to invest in a cartridge costing up to $75.00 that contains an electrically eraseable PROM. For $5.00 the vendor dumps a game or other program onto the cartridge. When the user tires of the program, he returns to the shop where, for another $5.00 a new program may be had.

For serious collectors, the cartridge vending system still may prove to be a costly way of obtaining programs. In fact, operations like Advantage are counting on users to be collectors and that the price break will serve to encourage outright purchase of copies.

In the games department, There is a lot to watch for. In a few weeks, Advantage will be offerring some high quality adventure games that will be a little more stimulating since they will be complete with graphics. Sports games are also big and Advantage will be introducing a number before too long. Kenyon indicated that Commodore will be bringing out a Soccer game that should be exceptional. The question in my mind is: "Will it be available for the 64?".

USING THE CARD ? +G

By BRUCE DUNN

I recently purchased Paperclip, a Gemini 10X printer, and one of the newly available Cardco Card ? (pronounced "Card Print") +G interfaces for my Commodore 64. Although these items work well together to form a very capable word processing package, setting everything up to run correctly was an exercise in frustration. Having got things working, I thought I would pass along some information to help others using this new interface.

-- What The Interface Is --

The interface connects between the serial bus port of your Commodore 64 and the Centronics-type parallel input port of your non-Commodore printer. It does a series to parallel data conversion, corrects Commodore non-standard ASCII codes to standard ASCII codes that the printer understands, and for the process of listing BASIC programs provides "English" translations of the color change and cursor control codes found in PRINT statements. In addition, the interface can allow a non-Commodore printer to emulate a Commodore printer and print Commodore graphics (although it is rather slow in this mode). The "+G" in the name refers to the graphics capability.

-- Setting up Line Feeds with the Card ? +G Interface --

When data is sent to the printer, at the end of a line a "carriage return" character is sent. If this were all that happened, then the printer would not do a line feed (advance the paper one line) before the next line of information, and would type over the previous line. In order to get normal printing, either the printer has to automatically do a line feed, or some other device has to send the printer a "line feed" character. Line feeds can potentially be done from three different points in the computer system: 1) the word processor that you may be using, 2) the Card ? interface, and 3) the printer itself. When setting up a printer and interface, you must be careful that for normal printing one system, and only one system, performs or sends out a line feed. If no system (word processor, interface, or printer) does the line feed, then all material will be printed on one line. If more than one system performs or sends out a line feed for the same carriage return, then you will get double spaced material (or even triple spaced material if have managed to get everything doing a line feed). Line feeds are originated as follows:

Printer Line Feeds:

Commodore 1525 printers do an automatic line feed whenever they see a carriage return. Printers from other companies are usually switchable between not doing an automatic line feed, and doing one. For instance on a Gemini-10X printer DIP switch #4 on the back of the machine makes the printer do an automatic line feed when it is turned on (up), and makes the printer operate without automatic line feed when it is off (down). Please note that this switch is consulted by the printer logic when the printer is turned on, and the line feed is set accordingly. After the printer is on, the printer logic ignores the switch setting. Changing the position of the switch while the printer is on does nothing until the printer is turned off then on again. If your printer is set onto the automatic line feed mode, you must make sure that neither the interface nor any word processor you are using performs an additional line feed. If your printer does not do an automatic line feed, some other part of your system must.

Card ? Interface Line Feeds:

This is a little tricky. When the interface is used, an OPEN command must be sent from the computer to set up a channel to the printer. If you are doing this yourself, without the help of a word processor, then the command used is OPEN X,Y,Z. Z is the "secondary address." See the Card ? manual for an explanation of what the codes are for. If you have the old Card ? manual labelled "Card ? A" be sure to consult the additions and changes sheets provided with the manual which refer to the Card ? +G. Leaving out the secondary address, or using a secondary address of 0,2,3,4,6,or 7, results in the interface sending out a line feed when it sees a carriage return. This is fine if your printer does not also do a line feed. However, if your printer is set up to do an automatic line feed (see above) then you will get inadvertent double spacing. Secondary addresses of 1,5,and 8 do not perform a line feed. This is OK if the printer does the line feed for you. However, if you use these addresses, and the printer is not set up to do an automatic line feed, then you will get everything printed on one line!

To complicate matters, the interface can be set up so that under no circumstances does it do a line feed, even with secondary addresses that normally give a line feed. This is most simply done by opening the case of the interface and setting DIP switch #8 to the off position. When this switch is on, the status of the line feed can be selected by the use of the appropriate secondary address. When this switch is off, the interface will never add a line feed to carriage returns that it sees. Once again, the position of the DIP switch is read only when the interface is first turned on. If you alter the switch setting while the interface is on, the interface will have to be turned off then on again to reset the mode. When you are using a word processor as described in the sections below, the interface will be set up by a different procedure so that it does not provide a line feed.

In summary, the following combinations will give correct line feeds when you are not using a word processor:

a) Printer set onto automatic line feed and

   - secondary addresses 1,5,and 8 used exclusively (these don't line feed).

or

   - any secondary address used, but Card ? line feed locked out by setting DIP switch #8 to off.

b) Printer set so that it does not do an automatic line feed and

   - secondary address omitted, or secondary address of 0,2,3,4,6, and 7 used exclusively (note that in order to do this DIP switch #8 must be in the on position).

-- Using Card ? +G with Word Processors --

ASCII Translations with Word Processors:

The Card ? +G interface in its normal operational mode causes the printer that you are using to emulate a Commodore printer. Word processors can be set up to send codes to the interface and printer as if it were a Commodore printer, however this means that many features of non-Commodore printers will be unavailable. Word processors such as "Paperclip" can control the special features of your printer directly. However, in order to do this the interface must pass ASCII codes from the word processor to the printer directly, without trying to interpret and/or change them. There are two ways for the Card ? +G interface to accomplish this:

1) The interface can be set to remain permanently in the "no ASCII translation" mode by opening the interface case and setting DIP switch #7 to the off position. This makes the interface very easy to use for word processing, but eliminates the possibility of using the ASCII translation features of the interface for listing purposes or for emulating a Commodore printer.

2) DIP switch #7 can be left in the on position. In this case, when the interface is powered up it will be in a mode which allows ASCII translation to take place. This gives the capability for listing programs etc. If a word processor which expects no ASCII translation is to be used, then the interface can be locked into the no-ASCII-translation mode by using the following command :

OPEN 4,4,25 :PRINT#4 :CLOSE4

The interface will stay in the no-ASCII-translation mode until the power is removed from the interface. A utility program called "LOCK" which performs the lock and allows you to load Paperclip by pressing one key has

LIBRARY BLURBS

If you want to borrow tapes or disks from the VIC library, you are required to give $5 per item as a deposit. Along with this you must give your name, address, phone number, and the number of your currently valid membership card. This deposit will be returned when you bring back the tape or the disk.

The loan period on all materials is from one workshop meeting to the next. If you can't return the item on the next meeting, please try to get someone else to bring it for you. We realize that you are human beings who get sick and have other emergencies. However, if you do not return the item within two months of borrowing it, consider your $5 forfeited. (Please note we are not operating a pick-up service for discs and tapes which can't be returned on time.)

You are responsible for the safekeeping of the medium and the software on it. Please do not add, change or delete any items on the disks or tapes. If you want to make an enhancement to a program, submit a rewritten version to the librarian. Include your name and revised line numbers in REM statements.

Some of the disks may be slightly different in their directories than the listings which appear in the newsletter listings -- have no fear, all the material is on there. The tapes have also been "cleaned up". Please note in some cases the last program may run out at the end of the tape. If this happens, please turn the tape over -- the program should be found on the other side.

If you have any problems with these disks or tapes, please realize that the people that made them are also human beings, and do not phone them up to complain. Also, don't phone us up to ask "How come this program doesn't work?" or "What are the instructions for this game?" since chances are we know as much as you do. Consulting back issues of magazines like *Compute!*, *Commander*, *Torpet*, *Run*, *First Book of VIC* and *Compute's Gazette* will help you in this regard. And don't forget there is the magical word "LIST" which will let you delve into the untold mysteries of the programs.

The library depends on submissions from members to sustain and expand its contents. Whether you have a program all of your own, or have taken the time to type in a program from a magazine or book, your efforts will be immortalized in the master library disks. All donations are gratefully received, your disk or tape will be returned. Take part in the club and be a participant, not just a member who takes all the software and runs (pardon the pun).

For a complete listing of tapes and disks, see the December and February issues of the newsletter.

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FLASH NEWS: Commodore's public domain COMAL disc is now available in the 64 library. It includes not only COMAL itself, which is of such massive size it leaves only about 9000 bytes free, but also instructions on how to use it and a variety of demo programs. This one-sided disk has the ID "S1". Information about COMAL is available in several recent publications. Perhaps someone would like to write an article for THIS publication about it as well? In any case, for COMAL, see 64 librarian Glenn Hazlewood.

Glenn would also like to talk to someone who has Commodore's CP/M package for the 64 and has actually managed to make use of it. Seems one thing CP/M sorely lacks is software!

— THE GEMINI FILE —
(Continued from page 3)

turned into an interesting presentation. Try adding scales at the top and bottom to give reference points. By using different characters other than CHR$(239) you can get some unique effects. Overhead projector transparencies and coloured markers can really blow their socks off!

When I first brought my printer home, histograms were one of my "first things to do" besides word-processing. The process alluded me because I was trying to build vertical graphs instead of the much simpler horizontal type as this program does. The horizontal method is still a mystery. Anyone out there have any ideas?

USER FRIENDLIES
By LARRY PHILLIPS

This month I will look at one of my pet peeves. It is a small thing, but annoying to see in an otherwise good program. I am referring to having to put up with the program author's choice of colours for text or graphics. The annoyance level varies in direct proportion to the difficulty of changing the program to suit your own preferences. The problem can be much worse in a machine language program than in BASIC, and becomes almost impossible in a commercial product that has been well protected.

All of this may sound a little petty to some, but I have seen programs that were actually unreadable on my particular TV set. The programming effort required to allow the user to select appropriate colours is minimal. I feel that the lack of such an option is inexcusable in any piece of commercial software, unless of course, it is necessary to the operation that certain colours be used.

Let's see what it takes to allow a choice of colours. First, we need to inform the user of the option. This may best be done in a common colour configuration, such as white on blue or green on black, that are at least readable on almost any monitor or TV set. The next step is to allow the user to simply and quickly change the colour combinations to whatever is desired.

The only steps needed are a few PRINT statements, a GET statement, and a few POKES. Simple? Yes! Then why not incorporate them into your next program?

BLAB FROM THE EDITOR:
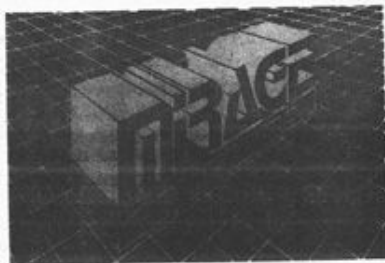
— CARD PRINT G + —
(From page 6)

been submitted to the club library.

Line Feeds with Word Processors:

When using a word processor, it is possible to have your interface/printer combination emulate a Commodore 1525 printer. This can be done by using: 1) a printer without automatic line feed coupled to an interface with its internal DIP switch #8 left on, or 2) a printer with automatic line feed coupled to an interface with DIP switch #8 turned off. As long as the word processing program is told to treat the printer/interface combination as a Commodore 1525 printer everything should work fine. This mode is not recommended however as it wastes the capabilities of your non-Commodore printer.

If you are not emulating a Commodore 1525 printer, and are using a word processor to directly control the ASCII translation for the printer, then you will be locking the Card ? +G interface

in the non ASCII translation mode. Either the hardware or software lockup (1 and 2 above) will eliminate the possibility of the interface doing line feeds. Since the interface is not sending out line feeds, you must make sure that either the word processing program *or* the printer implements the line feed (but not both or you will get unwanted double spacing). The word processor "Paperclip" for example lets you chose whether to send down a line feed by your choice of "printer files." Paperclip printer files are labelled "alf" for Automatic Line Feed, and "nlf" for No Line Feed. Please note that these files are labelled for what the word processor expects the printer to do, not for what the processor itself does. Thus "alf" files are to be used with printers that normally do an automatic line feed, and the word processor does *not* do a line feed. Conversely, "nlf" files are for printers that don't themselves line feed, so the word processor throws in a line feed with each carriage return.

EXPAND YOUR HORIZONS

Here's what FRITZ RADANDT of SPHERE COMPUTER LITERACY CENTRE says about DATABASE MANAGER by MIRAGE CONCEPTS:

The first interaction with any new software product is through its manual. It is therefore vital the manual be well organized, easy-to-read and concise. The Database Manger's manual is excellent in all respects. It is divided into four parts: Introduction, Beginning Tutorial, Advanced Tutorial and Reference. Beginners will find the first two sections very helpful in understanding the capabilities of the Database Manager in addition to explaining the fundamental commands. More experienced users can skim through the tutorials and reference sections, quickly extracting desired information.

One of the nicest features of the Database Manager is its ease of use. It is driven and makes extensive use of function keys. Prompts are meaningful and timely. Few keystrokes are required to initiate its options. I became comfortable moving through the system after only a few minutes of use and rarely found myself in situations where my next alternatives were not clearly displayed.

Form creation and field definition is usually a cumbersome task but on the Database Manager it is very straightforward. The searching and sorting capabilities are comprehensive. All common searching and sorting capabilities are possible in addition to extensive conditional searches using BASIC's IF/THEN capabilities. Sort indices can be saved for any field and multiple level sorts are allowed.

The Database Manager can print forms, lits and mailing labels. A compatible Advanced Report Generator program is also available now. The mailing labels are designed for American addresses with a two letter state field and a five number zip code. However, with the Advanced Report Generator it is easy to create your own mailing label formats for Canada.

Another useful feature is the ability to create calculating fields. Mathematical operations can be performed using the values from given fields with the results placed in another field. Extensive file manipulation is allowed including an option which makes information stored by the Database Manager accessible to Mirage word processors.

No system is perfect and the Database Manager is no exception. Space created by deleting records is not freed until a packing operation is invoked. The disk error messages are vague, requiring reference to the manual for more detail.

In summary, I feel that the Mirage Database Manager is the most user friendly database I have worked with.

SPHERE COMPUTER LITERACY CENTRE
#235 - 9600 CAMERON ST., BURNABY (In the Lougheed Plaza behind the Lougheed Mall) / PHONE 421-3771