Issue No. 3

The TORPET

Feb. 1981

(Bulletin of the Toronto Pet Users Group)

GOFF FREE TRANSLATIONS

Dave Goff the Games Volume manager is developing a program that will make goof free translations from BASIC source code to photo-typesetter input. This will be a real boon for program publishing in the TORPET.

Until now there have been only two ways of entering programs into a publication, and both led to errors. The simplest and easiest way was to just reproduce a program listing contributed by the author. Unfortunately, many authors have poor printers or have not recently changed their ribbons. This led to poorly legible reproductions that resulted in misinterpretations by the person entering the program into their machine from the source listing.

The second method available until now, while resulting in very legible listings, also often resulted in errors. This was because the program was reset by a typographer. Even should the typographer be a knowledgeable programmer we all know from experience how easy it is to make a mistake. If the mistake is one that leads to a syntactical error the new computer will of course catch it. However, as

often happens, if just some code is left out or a variable name is incorrectly entered then the program will not work properly even if entered correctly (according to the published listing) by the reader.

All this is now being remedied by Dave. Although the reader must still correctly enter his code from the listing, he may be assured that the listing is correct when we say it has been Goff-proofed!

This new program will also save much time for your busy editor, and hopefully help him more easily make deadlines, and thus pacify your anxious president. So, you see, all things are related.

FEB MEET AT LEASIDE

Dont't Forget- from now on the club meetings will be held at Leaside Highschool (see map below). There is good public transportation to this location which should please many metro dwellers.

Besides the central location, another reason for changing was the large auditorium which will seat 850. We can now expand from our measely 250 membership-- so bring a friend.

The new video projector is supposed to be present so everyone will get a good view.

WEST SIDE STORY

Sorry about this West Siders, but we don't have a West Side Story. The person's name given the editor as conveener of a West Side group doesn't appear in his mailing list. So-- if that person, whomever they may be, will come forward and identify themselves I will try to get the story in next time.
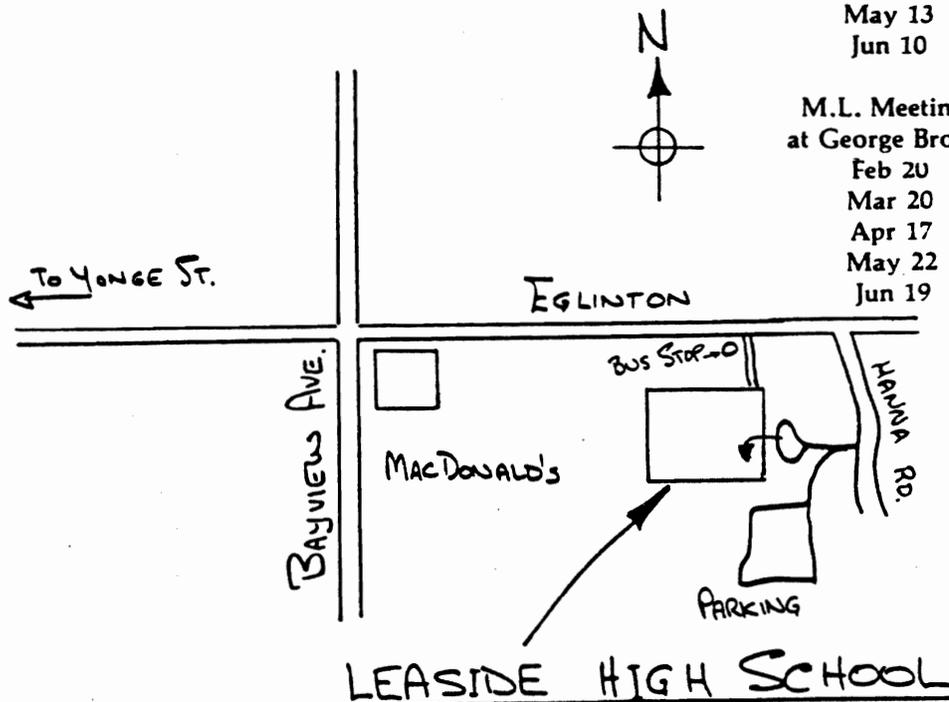
CALENDAR

Club Meetings
at Leaside
Feb 11
Mar 11
Apr 8
May 13
Jun 10

M.L. Meetings
at George Brown
Feb 20
Mar 20
Apr 17
May 22
Jun 19

LEASIDE HIGH SCHOOL

LIRARY REPORT
by David Hook

As is becoming a regular feature, our meeting was blessed (swamped?) with excellent material for the copy session. This led to a longer preparation time for the 'master copies', and when combined with disk reading problems, we had a few impatient customers.

In meetings past, we've attempted to have at least two masters prepared by the time the meeting concluded. This was only half-complete last time thanks to the reluctant 2040. I am informed that there will be six disk units available at the Leaside location, and we have plans to take advantage of this.

Chris Bennett provided master Utilities (both 2.0 and 4.0 ROMs) which combine a variety of features in machine language, as well as a plethora of list options for ROM/printer/case combinations. All are activated by SYS30000.

Paul Higginbottom of Commodore demonstrated their full-featured Basic Aid, which has been released to our club members. Both 2.0 and 4.0 versions for 32K machines were provided. Instructions are part of demo program. Commodore acknowledged a bug in the Change/Find routines that prevents using a 'line-range' for these commands. I've done a 'patch', Aid 2.1, which rectifies this for 2.0 ROMs, but Commodore will re-assemble and re-release for the next meeting.

Paul also held the floor for presenting an input editor which permits screen-oriented data entry. Users may patch this to their Basic program with a minimum of effort. Source, object and binary files were provided to the club. Most people got only the executable code for all 32K PETs, which sits at $7B00. The instructions were in Wordpro 3/4 format, the demo is 18K long for an 8032 CBM, and the source code is for the Commodore assembler. More of this will be available for copy at the next meeting.

The featured speaker was Jim Butterfield, and we were treated to Tax Ontario 1980 Version 1.0. Following came a musical interlude of MTU software, demonstrating individual instrumental definitions in 4-part harmony. There can't be too many more 6502 cycles that haven't been used.

Jim presented an improved Text Editor, as originally seen in the Transactor, and then wrapped up the evening with a few steps into Adventure-land. His adaptation requires 32K and a disk. An 8032 version (with lower case) is also complete.

Jim Butterfield also asked that the author of the Breakout game (in machine language) please come forward. Jim has broken the code back to assembly language and wishes to include the proper credit before we distribute this excellent piece of work. This includes an 8032 version that Jim put together from his source code.

February
Copy Session

We will have all the programs from January available. There will be 3 disk drives running copies from the current meeting.

Mike Bonnycastle will have ten copies of our Disk No.4--Simulations (INC—LUDES Butterfield's Adventure)--for sale. Orders will be taken for those who don't get one there.

Peter Smith has agreed to make tape copies of the complete January copy session in time for sale at this meeting. He is also attempting to make copies of our Disk No.3--Machine Language and Utilities--for February as well.

The cassette availablity may well solve the ignored feeling that non-disk owners must have been feeling. Richvale Communications has developed a M.L. utility that allows creation of a disk from a cassette--automatically! If this is put as the lead program on a tape, the purchaser of the cassette may readily create his own disk.

Important Questions

If we can use DOS 2.0 disk drives at the meeting, we can make full DUPLICATES in 2-plus minutes, instead of 6 1/2 minutes. This would mean we would need absolutely blank diskettes--not even NEWed--for the copy session. Also, those with DOS 1.0 drives at home would have to re-copy the diskette later to avoid attempting to write on the wrongly-formatted diskette.

For the next meeting, come prepared to comment on the pros and cons. We could save a lot of time in duplicating, if enough new DOS machines are available.

Bring a blank (unformatted) and a DOS 1.0 NEWed disk with you. The latter could have other stuff on it as well, since we'll use COPY, not DUPLICATE.

The Directory for the February release followsf

Disk Drive x 1: tpug-simulatn 1

advboot	advkeys
advf 0	advshor
advf 1	advmap
advf 2	advitm
advf 3	adventure
advf 4	universal wedge
advf 5	tombs a-bnnycstl
advf 6	tombs b-bnnycstl
advf 7	explore-bttrfld
advf 8	life
advf 9	adv30 intro
advf 10	adv30 game
advf 11	quest 3.0
advf 12	hammurabi
advf 13	adventure-m.b.
advf 20	adventure game
advf 21	fishery
advf 22	polut
advf 23	power instruct
advf 24	power simulation
advf 25	kingdom/pics
advf 26	dog.star.adven
advf 27	dungeon 1.4
advf 28	dungeon.alt3
advf 29	
advf 31	Blocks Free - 18

J. FERRARI ON DISK DRIVE MPS

At the December meeting a presentation was given by Joseph Ferrari on the microprocessors (mps) built into the 2040 and 8050 disk drives. The mps are actually the same mps found in the PET computer. Both the 2040 and the 8050 have two mps whereas the PET has only one. All the mps in the disk drives are 65xx mps, ie. being 6502's except for one in the 2040 being a 6504. The latter has the

same instruction set as the 6502 but fewer IO pins.

The main thrust of the presentation was to explain how these mps could be used independently of the PET. For commercial applications or sophisticated amateur uses this lends itself to the principle of development on a larger machine (the larger machine in this case being the PET) and implementation on a more restricted machine, ie. the 2040 or 8050 since they neither contain the basic interpreter nor have available assemblers or other development aids.

Any programs developed to run directly in the 2040 or the 8050 must be written in machine language. The principle is to download a program into the disk buffer and have it execute from there. To comprehend this concept some overall understanding of the disk architecture as described in the accompanying charts, may be helpful.
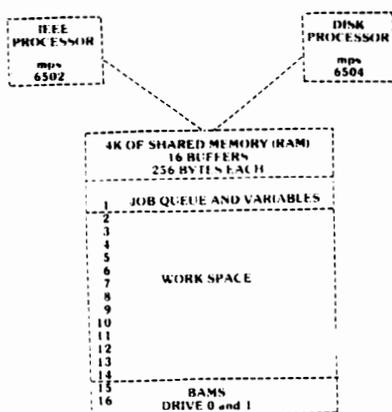
CHART I

Chart I shows the two mps in the 2040 disk and their relationship to the 4k of shared RAM

memory that is also in the disk drive. One of the mps attaches directly to the IEEE IO port and is the controlling processor. The second mps acts as a slave processor and handles all the read and write funtions to the disk. Because of the latters lmited tasks it is able to perform those tasks very quickly on command from the IEEE processor.
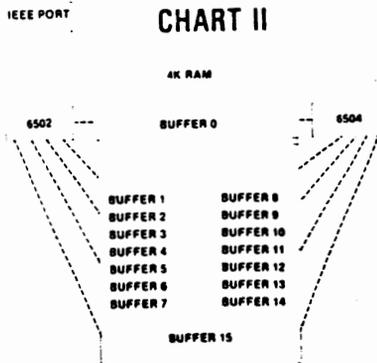
CHART II

The are 16 x 256 byte buffers which total the 4k of RAM. One of these is used, among other purposes, as the command channel between the IEEE mps and the slave mps. The procedure (as shown in Chart II) is for the IEEE mps to store data in a particular buffer and request the slave processor to write it from there to a particular track and sector. Or, vice versa, the IEEE processor requests the slave processor to read data from a particular track and sector into a specified buffer. Any of the buffers may be used as work space except for four which are assigned specific functions. Two of the buffers store the BAMS (block allocations maps), one each for drive 1 and 0. One buffer is related to the error and command channel.

CHART III

The remaining special buffer, called the job queue buffer, is described more completely by Chart III. It is important to understand that this complete chart describes only one buffer. That is to say, the chart represents an array image of the Buffer Job Queue buffer. The horizontal divisions represent relationships to the other specific buffers. Each level is assigned to a particular buffer and is broken up in the same manner as shown in detail for level 0. Since level 0 in Chart III (but not in the other charts) represents the job queue buffer the Track byte is not used; however it is used in reference to the work space buffers. Bits 3,2, and 1 in the job queue byte are never used. Bit 7 is used to indicate that the buffer is active. Bits 6 and 5 are used to indicate the type of activity to be performed (ie. seek, write, read, verify, etc.) and bit 0 is used to indicate drive 1 or 0. The Header bytes for each buffer contain the disk ID and the Track, Sector, and checksum.

A helpful hint for anyone delving into these operations in detail is that the addressing scheme for the buffers is different for the two mps. That is to say they both address the same physical buffer by a different logical address.

It was originally intended to publish a sample program with this story but source code was not available at press time. Should the source code become available in a machine readable form by the time of the next issue it will be published then.

TORPET PLANS

Torp'et- a mythical medieval type one eyed creature of dragon variety having the given name READY. Known to give bytes from eight to thirty-two thousand, depending upon size.

Torpet- bulletin of TPUG expected to grow in size from 4 to 8 pages with the next issue. Increased submissions sought. All text submissions should be Final Word or Wordpro 3/4 Format on a 2040 diskette. Likewise BASIC programs should be in BASIC source code on 2040 diskette, and ML submissions should be in 32K editor sequential file format. Wordpro 3/4 files must have five blank lines at beginning and must not be over 25 sectors in length per file.

Mail or submit diskettes directly to the editor at anytime or bring them to a club meeting where the files may be transferred to a club diskette and your diskette returned to you. Those persons mailing diskettes to the editor may retrieve them at the club meeting.

HOT NEWS RELEASE

Just as we were going to press word arrived from the club librarian, Dave Hook, that 10 new game diskettes have been received from the Silicon Valley Pet Club.

These were delivered to Dave by club member John Legrand who received them from a fellow Petter Bob Glidden, who in turn obtained them while on a recent trip to California.

This of course means much more work for the games volume manager Dave Goff and the game volume editors Kim Lowndes, Dylan Yolles, and Fred Gitelman. Many of the programs (at present an estimated eighty percent) may be duplicates of what we already have. However, it will of course be necessary for the games volume managers to go through them all in order to determine whether or not there have been improvements.

ML checklist.

Instructor: Jim Butterfield
Co-ordinator:Bruce Beach

This is the balance of the checklist as promised. Questions 1 to 31 were published in an earlier issue.

32. Do you know what a monitor is?

33. Can you call the monitor on a new ROM PET?

34. What registers are shown by the monitor?

35. What is a register?

36. How can you change a register with the monitor?

37. What effect does changing a register such as the PC, have?

38. How can you change the memory locations with the monitor?

39. What are all the monitor commands?

40. What is Supermon in relation to the monitor?

41. Can you use G,M, and X in Supermon?

42. Can you use H and F in Supermon?

43. Can you use D in Supermon?

44. Can you use an A in Supermon?

45. Can you use a C in Supermon?

46. Can you use L and S in Supermon?

47. Can you use I in Supermon?

48. Can you use T in Supermon?

49. What is the page concept in the 6502?

50. What is the high byte and the low byte of an address?

51. Can you differentiate between the following four types of instructions? 1.1. Data transfer 2. Arithmetic 3. Status manipulation 4. Branch?

52. What is implicit or implied addressing? Give an example.

53. What is immed dressing? Give an example.

54. What is direct or short addressing? Give an example?

55. What is extended or absolute addressing? Give an example.

56. What is indexed addressing? Give an example.

57. How does x register addressing work?

58. How does y register addressing work?

59. What is a stack?

60. What is push and pop?

COMMUNICATIONS

There were not very many telecommunications questionaires turned in at the last meeting. If you still wish to turn in one, pick it up at the table at the door during the February meeting, and turn it in at the same.

COMPUTE AVAILABLE

The good folks who brought the 185 copies of Compute to the last meeting plan to do so again if the publishing date is such that it arrive on time. So be prepared. Bring yo two dollahs!

CORRECTIONS AND ADDITIONS

Math and Science Volume
Dr. George Piasecki
473 Copeland Court
Oakville, Ontario
L6T 4B8
home-(416)844-9889
bus.-(416)844-2444

Misc. Volume
Jim Sloan
2 Barnes Cres.
Scarborough, Ontario
M1G 1Z9
home-(416)431-3212
bus.-(519)364-1400

AD RATES

As you will hopefully have noticed the Torpet has started taking advertising. The Executive has set the rates as follows:

1/8 page.....$15.00
1/4 page......25.00
1/2 page......45.00
full page......85.00