# THE PUG PERIPHERAL

## CLUB NEWS By Gary Taylor

At the last meeting it was voted to purchase a ribbon re-inker. The club will be purchasing the device and will have it available at the next meeting. We will be charging 1.00 to re-ink a ribbon and should be able to handle most of the cartridge type ribbons that are common today. We will be buying adapters to support the NX-1000 and NX-80. We will also try to get an adapter for the Sekoisha(sic) printer too. These seem to be the most popular printers in our club according to the survey we took a couple of months ago.

We have begun a newsletter exchange with the Kawartha 99'ers in Peterborough, Ont, Canada. They have put together an interesting disk called TI-TOOLS-2 and included a copy of it in there newsletter mailing to us. I will have several of these disks at the nxt meeting for those that are interested. It is dssd and contains many useful utilities. A big "THANK YOU" to the Kawartha 99'ers.

The disks that we received from Dallas will be merged into our library over the next few months. Copies of the catalog will be available at the October meeting in both DS and SS versions. Each catagory will be compared to ours for duplication and then the disks will be renamed to fit into our library. The clubs catalog will then be updated with the descriptions given in the Dallas library. We need volunteers to help with this project so pitch in when the call goes out at the October meeting.

This months' prize for the bingo game will be the 3 graphic disks that we received from Inscebot Inc. for demonstrating them last month. The disks are TI-Artist, Artist Extras, and Display Master. You don't want to miss the opportunity to win these great programs.

Speaking of Incebot Inc., we have received the disks that we ordered from them and will have them at the next meeting to pass out.

The Triton Fall 1988 Catalog is out. I fyou did not get a copy and would like to get on their mailing list write to: Triton Products Company, PO BOX 8123, San Francisco, CA. 94128. To order, call toll free 800-227-6900 Mon-Fri 6am to 6pm, Sat 9am to 4pm Pacific time.

From the Boston Computer Society comes word of a new graphics program called EZ-Drawer by Mark Sisco of Graphic Xpress, 4564 Ridgebury Dr. Dayton, OH 45440. It is a disk-based assembly language bitmap graphic generator. The price is $15 plus $1 for shipping.

The September issue of "The Computer Bridge", the monthly newletter of the St. Louis 99ers contains an interesting article called "Batch Processing with the TI-99/4A and Superbasic review". That's right BATCH PROCESSING! For those processes that require several steps to accomplish you can set up a batch file which will execute all the steps in order until the jobs is done. The example given in the article written by Harold C. Hoyt Jr. describes all the tedious steps involved in applying CHECKSUM to programs that are to be published in newsletters. Checksum is the program writtem by Tom Freeman of the Los Angeles UG that produces a checked listing. Then explains how all the steps can be placed into a DV80 file for processing by Superbasic. The result is the ability to do all the steps by entering only one program. The program disk is not copy protected but has another feature of interest. The program will not work without an electronic key which comes with the program. The key is placed in the joystick port. The Superbasic can be purchased for $25 from the author Steve Karasek, 855 Diversy Lane, St. Louis, MO 63126.

# HARDWARE NEWS

## ADVENTURES WITH THE MYARC 512K CARD
### (OR DOES YOUR RAM DISK FAIL TO HOLD MEMORY)

### BY GARY TAYLOR

I PURCHASED A 512K MYARC MEMORY CARD A FEW MONTHS AGO AND FOUND THAT WHEN I TURNED OFF MY COMPUTER THAT THE MEMORY CARD WOULD LOSE ALL OF THE PROGRAMS THAT I HAD LOADED INTO IT. THE DEVICE CAME WITH A TRANSFORMER AND EVEN THOUGH I PLUGGED INTO THE WALL OUTLET INSTEAD OF MY POWER STRIP IT DIDN'T WORK.

I CALLED MYARC THE NEXT MORNING AND WAS TOLD THAT THE MYARC 512K CARD WAS NOT SOLD WITH AN ASSURANCE THAT A POWER SUPPLY WOULD HOLD MEMORY. THEY ALSO STATED THAT SOME CARDS DID WORK BUT NOT IN ALL CASES AND IT WAS NOT SOLD WITH ANY SUCH CLAIM.

WHEN I MADE MY PURCHASE I RECEIVED A MYARC 512K CARD WITH THE MYARC EXTENDED BASIC II CARTRIDGE PLUS DISKS AND BOOKS. IT WAS USED BUT WAS GUARANTEED TO WORK AND IT DID. IT CAME WITH A SMALL POWER SUPPLY THAT PLUGGED INTO A SMALL CONNECTOR ON THE BACK OF THE CARD. SINCE THE MYARC RAM DISK CONTAINS DYNAMIC RAM CHIPS INSTEAD OF STATIC RAM CHIPS IT TAKES MORE POWER THAN CAN BE SUPPLIED BY A BATTERY TO HOLD THE MEMORY. UNFORTUNATLY, IT WOULD ONLY HOLD MEMORY FOR ABOUT 5 SECONDS. THAT'S JUST ENOUGH TIME TO TURN OFF THE CONSOLE AND TURN IT BACK ON. ANY LONGER AND I HAD TO RELOAD THE RAM FROM DISKETTE.

THE POWER SUPPLY I HAD WAS RATED AT 9V DC AT 500MA. I GOT OUT THE TRUSTY VOLTAGE TESTER, PLUGGED IN THE POWER SUPPLY, OPENED THE CLAMSHELL AND BEGAN TO POKE AROUND. I FOUND THAT THE DIODE WAS PULLING ABOUT .8V OUT OF THE LINE, A BIT MORE THAN I EXPECTED, AND IT WAS FEEDING THE 5V REGULATOR ON THE CARD WITH 7V. THE 5V REGULATOR WAS OUTPUTTING ONLY 3.6V TO THE MEMORY CHIPS. THE REGULATOR WAS NOT SUPPOSED TO DROP THAT MUCH AND AT THIS POINT THE PROBLEM WAS IDENTIFIED. I HAD TO SUPPLY THE REGULATOR WITH ENOUGH POWER TO PRODUCE 5V ON THE OUTPUT TO THE MEMORY CHIPS AS THE MEMORY CHIPS REQUIRE 5V. TESTING THE DC CURRENT REVEALED IT WAS ONLY PULLING 300MA. THERE ALSO SEEMED TO BE A LOT OF FLUTTER ON THE CIRCUIT.

I HAVE A FRIEND WHO HAS THE SAME MEMORY CARD AND HE HOLDS MEMORY WITH A POWER SUPPLY RATED A 9V DC AND 800MA. SO I WENT TO RADIO SHACK 8/24/88 LOOKING FOR A COMPARABLE POWER SUPPLY. THEY HAD POWER SUPPLYS ON SALE MARKED WITH A COMMODORE LOGO RATED AT 9.5V DC AT 1000MA.

I REWIRED THE END OF THE WIRE OF THE NEW POWER SUPPLY WITH THE PROPER CONNECTOR THEN PUT A VARIABLE RESISTOR INLINE. WHEN I PUT IT UNDER LOAD I TWEEKED THE VARIABLE RESISTOR UNTIL I GOT 5V OUTPUT FROM THE 5V REGULATOR ON THE MEMORY CARD. WHEN I MEASURED THE VOLTAGE GOING INTO THE CARD IT WAS DRAWING 8.10V. I SET THE VARIABLE RESISTER TO 8.25V THEN PUT IN A CAPACTOR TO SMOOTH OUT THE FLUTTER AND PUT IT ALL IN A SMALL HOUSING RIGHT INLINE WITH THE POWER CORD. THE CURRENT DRAW REMAINED AT 300MA.

THE RESULTS ARE THAT THE REGULATOR ON THE CARD IS FEEDING 5V TO THE MEMORY CHIPS AND ONLY HAS ABOUT 2.5W OF HEAT TO DISIPATE, THE LITTLE BOX IN LINE IS DISIPATING APROXIMATELY 1.3W. THIS KEEPS SOME OF THE HEAT OUT OF THE EXPANSION BOX. IT WORKS GREAT! IT APPEARS THAT THE RATING MARKED ON THESE SMALL POWER SUPPLYS ARE NOT THAT ACCURATE. THE PROBLEM IS COMPOUNDED BY THE 5V REGULATOR DROPING OVER 3 VOLTS OUT OF THE CIRCUIT.

NOW THAT I HAVE WRITTEN THIS IN FIRST PERSON TENSE, I AM COMPELLED TO GIVE JUST CREDIT TO THOSE WHO WERE INSTRUMENTAL IN PROVIDING THIS SOLUTION. FIRST TO JOHN WILLFORTH, WHO DIAGNOSED THE PROBLEM AND SECOND TO FRANK SHOEMAKER WHO SAT IN HIS WORKSHOP AND FIGURED ALL THIS OUT AND ACTUALLY DID THE SOLDERING. I DID LOOK ON THOUGH. I THINK I HAVE A TOTAL OF $8.00 IN THIS CIRCUIT.

## MULTIPLAN PART 11

### By Audrey Bucher

This month we will have a little fun learning to deal with the Index command, the IF statement and using Work Tables to hold intermediate information.

Suppose you are having a party and want to know what kind of drinks you can make with what you have in stock. MP can do the work for you.

First of all, you need to tell MP the recipes for the drinks you want to make. So we will make a table containing these recipes. The body of the table will show the quantity of each ingredient to be used for each drink. We will use ounces as the unit for each ingredient. Once you have entered and saved your table, you will have a recipe file for drinks. However, the main purpose of this model is to show what drinks can be prepared from the ingredients you have in stock. MP will put a ** in Row 1 above the name of each drink which can be made from these ingredients.

We want MP to compare the amount of each ingredient below the name of the drink to the amount of the corresponding ingredient in the IN STOCK column. If all of these comparisons are successful, then MP should put ** above the name of the drink, otherwise it will put a blank.

MP has a powerful IF statement which we need to use in the first row of the model. The syntax of the IF statement is IF(condition,value-if-true,value-if-false). We want to say IF(drink can be made, "**"," ");eg if the drink can be made,"**"," ") or if the drink can be made,put ** in this cell, otherwise place 2 blanks in this cell.

The model uses a "work table" to hold the result of each comparison. There is a cell in the work table corresponding to each cell in the drinks table. When an ingredient needed for a drink is compared to the corresponding ingredient in stock, MP places the result of the comparison in the work table. If there is enough of the ingredient,it will put a 0 in the work table. if there is not enough it will put a 1 in the work table. With this approach, a drink for which all ingredients are in stock would have all 0's in it's column in the work table after all comparisons have been made. If we sum the column for a drink in the work table, this sum will 0 for possible drinks and greater than 0 for impossible drinks. This sum in the work table will be exactly the number of missing ingredients for each drink. Now the IF statement becomes very simple:IF(sum of same column in work table=0,"**"," ").

Now let's construct the model. Turn off recalc and format the column widths to 10 using the Format Default command. Also make the default alignment Center. Begin by placing the words IN STOCK at R4C1. We need to leave room above for the row containing the asterisks and the rows containing the names of the drinks. Use the Name command to assign the name STOCK to the in stock table so we can refer to it later. Name R1:16C1 as STOCK.

Set off the work area from the rest of the worksheet by placing 10 dashes in R17C1. then copy right for 9 cells. Now put the label WORK TABLE in R18C1.

Next we'll set up the work table. Start with R18C3. This cell will be the work cell corresponding to the first ingredient for the first drink. This cell should contain a 0 if there is enough of this ingredient, otherwise it should contain a 1. The formula for this cell is IF(R[-13]C<=INDEX(STOCK,ROW( )-17),0,1). In other words, compare the contents of the cell which is 13 rows above this work cell to the contents of the cell in STOCK on the same row; if the drink cell's number is less than or equal to the amount in stock, then put a 0 in the work cell, otherwise put a 1. Because the work table is the same shape as the drinks table, the expression R[-13] will give the correspinding cell of the drinks table for every position of the work table. Now let's look at the expression INDEX(STOCK),ROW( )-17. ROW( ) means "the number of the row where this formula resides". When this formula is placed at R18C3, ROW( ) is evaluated as 18. So for the cell we are building, ROW( )-17 comes out to 1. INDEX(STOCK,1) means just the first cell of STOCK or the amount of the first ingredient in stock.

It's simple to construct the rest of the work table after you have entered the formula in R18C3. Since we have 12 ingredients just copy that cell down for 11 cells. Then put the label # MISSING at R30C2, and put the formula Sum(R[-12]C:R[-1]C) in R30C3. This formula adds the column in the work table to show if there are any missing ingredients. The rest of the work table consists of 6 more columns that look exactly like the one we just finished. So use the Copy Right command to copy 6 columns starting at R18C3:R30C3.

Now to finish it up. Make R1C1:R1C2 continuous (by the Format Cells command) and then fill in the comment YOU CAN MAKE THESE. Then move over to R1C3 and enter the formula IF(R[+29]C=0,"**"," "). Now Copy this formula Right for 6 cells and you are ready to go. To make the sheet look nicer, I did reformat the alignment of C2 to General. Happy Bartending.

| YOU CAN MAKE THESE | | ** | | ** | ** | | ** | ** |
|---|---|---|---|---|---|---|---|---|
| IN STOCK | | ROB ROY | DRY MARTINI | GIMLET | SCREW-DRIVER | BLOODY MARY | BRANDY ALEXANDER | MAN-HATTAN |
| 4 | SCOTCH | 1.5 | | | | | | |
| 2 | GIN | | 2 | 2 | | | | |
| 3 | VODKA | | | | 1 | 1.5 | | |
| 2 | VO | | | | | | | 1.5 |
| 2 | OR JCE | | | | 3 | | | |
| 0 | TOM JCE | | | | | 3 | | |
| 2 | LIME JCE | | | 0.75 | | | | |
| 5 | D VERMOUTH | | 0.5 | | | | | |
| 4 | S VERMOUTH | 1 | | | | | | 0.5 |
| 4 | BRANDY | | | | | | 1 | |
| 2 | C D COCOA | | | | | | 0.75 | |
| 1 | CREAM | | | | | | 0.75 | |
| ----------- | | | | | | | | |
| WORK TABLE | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 1 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 1 | 1 | 0 | 0 |
| | | 0 | 1 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | # MISSING | 0 | 1 | 0 | 0 | 1 | 0 | 0 |

GETTING THE MOST FROM YOUR CASSETTE SYSTEM
BY MICKEY SCHMITT

NUMBER 18

UNDERSTANDING - CREATING - AND USING - CASSETTE FILES
PART VII

This month I am continuing with the topic of Understanding - Creating - and Using - Cassette Files. More specifically, I will be concentrating on using cassette files... as we are now ready to move on into an area of the cassette that I'm sure we've all been waiting for.  finally...  you will be able to see "first-hand" just how a cassette file operates.

Although this program will work as written - you are encouraged to make any changes that you may want - in order to meet your own specific personal needs.  don't be afraid to do a little experimenting.  It can't hurt and you just may learn a thing or two in the process.

```
100 CALL CLEAR
110 PRINT "CASSETTE: DATA FILE PROGRAM":::::::
120 PRINT TAB(4);"1  CREATE A DATA FILE"::
130 PRINT TAB(4);"2  LOAD A DATA FILE"::
140 PRINT TAB(4);"3  QUIT THE PROGRAM":::::::
150 INPUT "YOUR CHOICE? ":CHOICE
160 ON CHOICE GOTO 170,330,550
170 FOR FILE=1 TO 5
180 CALL CLEAR
190 INPUT "NAME     ":NAME$(FILE)
200 INPUT "ADDRESS ":ADDRESS$(FILE)
210 INPUT "CITY    ":CITY$(FILE)
220 INPUT "STATE   ":STATE$(FILE)
230 INPUT "ZIP     ":ZIP$(FILE)
240 INPUT "PHONE   ":PHONE$(FILE)
250 NEXT FILE
260 CALL CLEAR
270 OPEN #1:"CS1",INTERNAL,FIXED,OUTPUT
280 FOR FILE=1 TO 5
290 PRINT #1:NAME$(FILE),ADDRESS$(FILE),CITY$(FILE),STATE
$(FILE),ZIP$(FILE),PHONE$(FILE)
300 NEXT FILE
310 CLOSE #1
320 GOTO 100
330 CALL CLEAR
340 OPEN #1:"CS1",INTERNAL,FIXED,INPUT
350 FOR FILE=1 TO 5
360 INPUT #1:NAME$(FILE),ADDRESS$(FILE),CITY$(FILE),STATE
$(FILE),ZIP$(FILE),PHONE$(FILE)
370 NEXT FILE
380 CLOSE #1
390 FOR FILE=1 TO 5
400 CALL CLEAR
410 PRINT NAME$(FILE)
420 PRINT ADDRESS$(FILE)
430 PRINT CITY$(FILE)
440 PRINT STATE$(FILE)
450 PRINT ZIP$(FILE)
460 PRINT PHONE$(FILE)
470 PRINT :::::::
480 PRINT " PRESS: ANY KEY TO CONTINUE
490 CALL KEY(0,K,S)
500 IF S=0 THEN 490
510 IF FILE<5 THEN 520 ELSE 540
520 NEXT FILE
530 GOTO 410
540 GOTO 100
550 CALL CLEAR
560 END
```

This concludes my series on "GETTING THE MOST FROM YOUR CASSETTE SYSTEM." However... if you need any help or have any questions concerning your cassette system - just give me a call ( 412-335-0163 ) and I'll try to help.

## T.  I.  Writer
### (Part 9)
### Stan Katzman

This time I wish to discuss the "dot" commands. These commands format the text in the text Formatter. They are entered in the document, and for the sake of brevity, occupy a line of their own.  The commands I want to discuss are for setting margins, right adjust, indenting the beginning of a paragraph and centering text headings.  All dot commands and text formatting commands (even those discussed last time) do not show up in the final document when put through the text Formatter.

All dot commands must start with a period and end with a carriage return symbol.

To set the left margin, at the head of your document, type .LM 15 followed immediately by enter.   To set the right margin type .RM 70 followed by enter.  This sets the left margin at 15 and the right margin at 70. Then type .FI enter.  The .FI (fill command) says to fill the line with as much text as possible between the margins.  You must have the .FI command in to have the margin commands effective.

If you want to indent a paragraph, type .IN +5 and this will indent the start of a paragraph five spaces. The indent command must follow the margin settings.

To center a line of text, type .CE (enter) before the line of text to be centered.  If you want two lines of text centered type .CE 2 (enter).

In order to right adjust your margin type .AD (enter).  In order to right adjust you must also have the .FI command on also.

Now I realize this might be a bit abstract so I have provided some copy that I used in my work in order to illustrate these commands.  At the top of page 2 you will see the dot commands at the top.  On the screen the carriage return symbols show but they do not show on the printed copy.  The centering command works only for the line designated while the margin, and adjust commands work until turned off.  (To turn off the right adjust enter a .NF command in the area where you do not want the margin right adjusted.) To change margins just type the appropriate changes on a separate line of text using the numbers for the margins that you want.

Page 2 shows the final copy after being put to the text Formatter.

```
.LM 6
.RM 70
.FI
.IN +5
.AD
    .CE
```

## OPTICAL ROTATION EXPERIMENT

In this experiment we will determine the optical rotation of two substances. One of these substances will be studied in different concentrations to determine the effect of concentration on optical rotation. The second substance will be studied in different solvents and different concentrations to see the effect of solvent and concentration on its optical rotation.
In our first experiment we will study the effect of concentration versus the optical rotation.
Accurately weigh out three samples of sucrose (table sugar) in order to make three 100 ml solutions. The first solution will be approximately 0.2 M, the second solution will be approximately 0.4 M and the third solution will be approximately 0.8 M.
For our second experiment we will use camphor in different solvents and concentration as a subject of a polarimetry study in order to study the effect of solvent and concentration versus optical rotation.
In the case of camphor, accurately weigh out six (6) samples with the following approximate molarities, two at 0.2 M, two at 0.4 M and two at 0.8 M. Again weigh out enough camphor to make 100 ml of each solution. Three of the samples (0.2M, 0.4M and 0.8M) will be dissolved in acetone and three of the samples (0.2M, 0.4M and 0.8M) will be dissolved in 95% ethanol.
Place each solution (made from the sucrose and the camphor) in a dry polarimeter tube (dry the tube between readings) and take its optical rotation in the polarimeter. (Your instructor will show you how to use the polarimeter.) Record the concentration and the optical rotation (Be sure to include the sign of the rotation, (+) for dextrorotory and (-) for levorotory.) in your notebooks. When you have finished be sure to wash the polarimeter tube thoroughly, including the screw caps and threads on the ends of the tube.
For this experiment we want to do three things 1) compute the specific rotation of each solution, 2) make a plot of optical rotation vs. concentration and 3) make a plot of specific rotation vs. concentration.
The formula for computing specific rotation is

```
.NF
.CE
a=(a)lc
```

where

```
a=observed rotation (degrees of arc)
(a)=specific rotation (deg ml/dm g)
l=length of cell (decimeters)
c=concentration (g/ml)
```

---

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In our first experiment we will study the effect of concentration versus the optical rotation. Accurately weigh out three samples of sucrose (table sugar) in order to make three 100 ml solutions. The first solution will be approximately 0.2 M, the second solution will be approximately 0.4 M and the third solution will be approximately 0.8 M.
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$$a=(a)lc$$

where

```
a=observed rotation (degrees of arc)
(a)=specific rotation (deg ml/dm g)
l=length of cell (decimeters)
c=concentration (g/ml)
```

# FORTH

## THIRD TUTORIAL ON FORTH FOR THE NOVICE.

NOTE: THIS AND FUTURE SESSIONS WILL COME TO  YOU  IN
64 COL WIDTH TO ACCOMMODATE FORTH SCREENS

As  mentioned  there  is  an elegant way to autoboot
whatever you want your system disk to do, but  before  we
can   proceed  with  that  we'll  have  to  consider  the
following :

Since FORTH  is  a  disk-based  system  it  occupies
memory   which   otherwise   would   be   available   for
programming.  That - in my opinion - is the  reason  TI
provided  many of the utilities as LOAD OPTIONS.  Look at
the menu and also Appendix F.  Some  of  the  options,  i.
e.   the editor, are essential, others are rarely needed.
For instance, if you are not programming in Code there is
no   need  to  clutter  up  the  memory  with  -CODE  and
-ASSEMBLER.  Similarly, if you aren't  going  to  operate
with  graphics  then  there is no need for -VDPMODES etc.
It is not very likely that you will  run  out  of  memory
while   still   in  the  learning  process  but  why boot
unneccessary stuff? I  consider  only  -DUMP,  -COPY  and
-PRINT  along  with the editor as essential.  To show you
how fast memory is occupied even with your extra 32K,  do
this (assuming you are in FORTH): enter

: FREE SP HERE - . ; (colon FREE SP HERE minus dot
semicolon)

Now enter FREE.  You should get an answer  of  about
14140  (9790  if you opted for the 64-column editor).  If
you want to see how fast memory shrinks  with  each  LOAD
OPTION  boot  a few more, but enter FREE in between them.
(If  you  are  convinced  enter  COLD.)  Here  is  what  I
autoboot and why : 1.  -PRINT so l can list the screens I
am working on 2.  -COPY so I can copy  disks  screens  3.
-DUMP  which  allows me to look at the parameter stack 4.
-BSAVE a must to enable the quick autoboot If you want to
use  a  printer there is one more item to check.  Look at
SCREEN 72 in the manual or - for  practice  -  call  it  up
from  your disk.  Look at where it says " RS232.BA=9600".
This routine is written for a serial printer operating at
9600  BAUD.   If  yours is on the parallel port (PIO) you
must modify #72 as shown  below  and  FLUSH  it  to  your
system disk.  SCR# 72

```
    0  ( ALTERNATE I/O SUPPORT FOR PIO PRNTR 04/27/84 LW
)
    1 0 CLOAD INDEX BASE->R  DECIMAL  68  R->BASE  CLOAD
STAT
    2 0 0 0 FILE >PIO BASE->R HEX
    3 : SWCH >PIO PABS 10 + DUP PAB-ADDR ! 1- PAB-VBUF !
    4 SET-PAB OUTPT F-D" PIO" OPN 3
    5  PAB-ADDR VSBW 1 PAB-ADDR 5 + VSBW PAB-ADDR ALTOUT !
    6 : UNSWCH 0 ALTOUT ! CLSE ;
    7 : ?ASCII ( BLOCK# --- FLAG )
    8 BLOCK 0 SWAP DUP 400 + SWAP
    9 DO I C 20 > + I C DUP 20 < SWAP 7F > OR
```

```
   10 IF DROP 0 LEAVE ENDIF LOOP ;
   11 : TRIAO 0 SWAP SWCH 3 / 3 * DUP 3 + SWAP
   12 DO I ?ASCII IF 1+ I LIST CR ENDIF LOOP
   13 -DUP IF 3 SWAP - 14 * 0 DO CR LOOP
   14 OF MESSAGE OC EMIT ENDIF UNSWCH ;
   15 R->BASE -->
```

To make sure that everything is  ok  with  your  new
version of #72, enter

-PRINT

turn on your  printer  and enter SWCH ." THIS IS A
TEST" CR UNSWCH Make sure there is  a  space  between  ."
(DOT-QUOTE) and THIS.  If your printer responds with THIS
IS A TEST, pat yourself on the back and  play  with  SWCH
start  over  again,  and  this  time pay close attention,
particularly to spaces!

Before we proceed with the actual  set-up  for  your
autoboot  take  a  quick look at any SCREEN between 8 and
19, no not in the manual, on your  display  (remember  nn
EDIT).   Not much there that's legible, but believe it or
not on those few SCREENS resides every FORTH  word  that is
identified  in the Glossary as a RESIDENT word, only they
are saved in a binary form.  We will do the same with the
LOAD  OPTIONS  you  decide  upon by the use of BSAVE.  So
let's go.  First, start off with COLD,  then  boot  your
options  by  entering the appropriate words (-PRINT, etc)
and as the final one -BSAVE.   Find  the  apostrophy  key
(FUNCT  O  -  that's  O not ZERO!).  This is also a FORTH
word pronounced TICK (page 3, Glossary).  Now enter:

' TASK 22 BSAVE .

(tick TASK 22 BSAVE dot)

Here is what's happening: We are  saving  in  binary
form  all  that  has  been  added  to  the dictionary (by
booting the LOAD OPTIONS) starting at screen 22.  We  can
afford  to  wipe out 22 and some of the following screens
because they contain the 64 column editor which you  have
either   booted   already   (so   it's  in  the  autoboot
dictionary) or you aren't going to use it.  The final dot
will  print  on  your  display the first screen after the
BSAVE is done.  All other LOAD OPTIONS remain intact  and
can be booted when needed.

Now for the finishing touches.  Enter

EMPTY-BUFFERS 3 EDIT

and  carefully  erase all but lines 0,1,2,13 15.  On
line 2 take out  the  parenthesis  around  84  LOAD.  and
change  20  LOAD  to  read  22 BLOAD.  You might want to
replace the word BOOTING on line 0 with some other phrase
which  would  let  you  know  that you are using your new
system-disk.  On line 5 put: 0 DISK_LO ! and depending on
how  many  drives you have and whether they are single or
double  sided  enter  ONE  of  the  following:  (for  one

(Forth, continued)

FUNNELWEB TIP

single-sided drive skip this)

    90  DISK_SIZE  !  180 DISK_HI ! ( for 2 single sided drives)
    180 DISK_SIZE ! 180 DISK_HI ! (for  1  double sided drive)
    180 DISK_SIZE !  360 DISK_HI ! (for 2 double sided drives)

    Note that these words use the underline, not the hyphen. (If you have double DENSITY drives it is not quite that easy, you have to make several modifications to screens 33 and 40 as well as define a new word to install a proper disk header.)

    After you have FLUSHed your edit go COLD and with any luck you will have a working system disk. You are ready for FORTH. It's time to start learning and for that read Chapters 1 and 2 of STARTING FORTH. I went through the book first and annotated each page with the corresponding remarks from the manual's read 22 BLOAD. You might want to replace the word BOOTING on line 0 with some other phrase which would let you know that you are using your new system-disk. On line 5 put: 0 DISK_LO ' and depending on how many drives you have and whether they are single or double sided enter ONE of the following: (for one single-sided drive skip this)

    90  DISK_SIZE  !  180 DISK_HI ! ( for 2 single sided drives)
    180 DISK_SIZE ! 180 DISK_HI ! (for  1  double sided drive)
    180 DISK_SIZE !  360 DISK_HI ! (for 2 double sided drives)

    Note that these words use the underline, not the hyphen. (If you have double DENSITY drives it is not quite that easy, you have to make several modifications to screens 33 and 40 as well as define a new word to install a proper disk header.)

    After you have FLUSHed your edit go COLD and with any luck you will have a working system disk. You are ready for FORTH. It's time to start learning and for that read Chapters 1 and 2 of STARTING FORTH. I went through the book first and annotated each page with the corresponding remarks from the manual's Appendix C (Notes on STARTING FORTH).

    Enjoy.                    End Session 3

            By Lutz Winkler

    From Bits, Bytes & Pixels comes this tip. DM1000 has again been improved in FW 4.11. When you COPY DISK you can now copy 105 sectors per pass rather than 103 sectors as before. And after displaying a disk directory from FILE UTILITIES you can now press A(ll) and have a "C" appear next to all files. THis is very handy if you want to C(opy) all, or most files to another disk, file by file, and provides a convenient way to make a backup disk that does not contain any fractured files. Another new feature is immediate rollover to the next or previous page of files when you reach the bottom or top of the currently displayed page. You no longer have to answer "N" to EXECUTE FILE COMMANDS before going to another page. To execute file commands press FCTN/6 (PROC'D).

    The new FW allows immediate screen display of the UL menu when UTIL1 is booted, bypassing the TI-Writer and E/A central menus. Since the UL menu can handle the largest variety of assembly language programs, this allows you to customize a disk with several assembly programs and have a menu of these programs immediately availalble. The FW 4.11 environment is transparent. Just put UTIL1, UL, EA, LL and SL if needed, and your assembly programs on a new disk, and you are ready to go. It is not necessary to have SYSCON or the configuration program (CF/CG) on the new disk. Lots of assembly games are available. With the new FW you can create custom game disks with your favorite games.

    It is not possible to directly boot UTIL1 from XBASIC. You can instead use any of several XBASIC EA5 loader programs and call the loader program LOAD. You can also configure UL into the FW XBASIC user list as an option 2 (GPL) PROGRAM file.

    The CONFIGURE program of FW 4.11 lets you configure from the LOADing window the UL immediate ON features described above. CONFIGURE also has some new warning messages that among other things, warn you if you are about to Q(uit) CONFIGURE without first I(nstalling) your new configuration. Installing v4.10 configurations into v4.11 takes about 30 seconds. Using the v4.11 CONFIGURE program, L(oad) your v4.10 SYSCON file and then I(nstall) this file into the v4.11 LOAD and UTIL1 files.

    Funnelweb v4.11 is now available in the Club Library. Be sure to take advantage of this wonderful program from our friends in Australia. Please remember that this is a Shareware Disk and send a donation to Tony and Will McGovern. You can also make a donation to them through the Club.

****WELCOME***WELCOME***WELCOME****

The PUG would like to extend a warm welcome to our newest members...Marlene Curran and Paul Brucker.

THE KIDDIE CORNER

by Sue Harper

For kids of all ages - a series of articles on how to get started making your own computer programs.

In the last two articles we talked about how to get the computer to erase the screen - use CALL CLEAR - how to print anything we want - use PRINT and " " around the words - and how to get the computer to do math - use PRINT and + to add, - to subtract, * to multiply, and / to divide.

Now let's put this together in a program.

Programs are very simple. You use the same commands - PRINT, CALL CLEAR and others. The only difference is that you put a number in front of the command. This number is called the LINE NUMBER, and it tells the computer to wait until you use another command - RUN. Type in the program below:

```
10 CALL CLEAR
20 PRINT "HELLO"
30 PRINT "I AM A COMPUTER"
40 PRINT "I AM SMART"
50 END
```

Be sure to press ENTER at the end of each line. Now, with no line number type the word RUN and press ENTER. The screen will clear, and this will appear at the bottom of the screen:

```
HELLO
I AM A COMPUTER
I AM SMART
```

**DONE**

DONE tells you the computer is finished and ready for the next command. Change the program above, and make the computer print other things. Write a program that will print your name and address. Write a program that will print the names of your classmates, or friends, or people in your family.

Now, let me give you another program. It has one new command.

```
10 CALL CLEAR
20 PRINT "WHAT IS YOUR NAME?"
30 INPUT A$
40 CALL CLEAR
50 PRINT "HI";A$;"HOW'S IT GOING?"
60 END
```

Make sure you get the punctuation right on line 50. RUN the program. What does it do? It asks you what your name is and remembers your name as A$. Then it uses your name whenever it is asked to print A$, as long as A$ is NOT inside quotation marks!

Next month, more programs, more math! See you then!!!!

FROM THE LIBRARIAN. . .

Welcome to fall, and a perfect time to computerize your life!

We hope you all have had the time to play with your new FUNNELWEB and your new ARCHIVER from last month's meeting. For those who could not be there, as you know we promised FUNNELWEB 4.11 and ARCHIVER 3.0. Well, since improvements keep coming, we had available FUNNELWEB 4.12 and ARCHIVER 3.01. We don't waste time around here! If it's hot, we've got it.

For this month there will be some additions to the games section of the library. Gary has found for us THE BEST OF BRITAIN volumes one and two. As of the writing of this article, I haven't had the chance to look at them, but I am sure they will be good. My husband will undoubtedly field test them for us before the October meeting!

I have received an unbelievable number of disks from a number of sources in the past few months. I have tried to put the utility fairware stuff in the library as quickly as possible. So, I can tell you I have quite a backlog of stuff for the library. DO come check out what's new there. By the way, did you know that we already have 181 disks in the library? Not too bad, eh?

The new catalog is coming along VERY SLOWLY. I have the sections for the utilities and the professional. That means that there are seven sections still undone. If any of you have time, please talk to me about helping with this project. Of course, as we add new disks (and there will be lots of new stuff) we will need to update the listing. To be honest, I am currently going back to school for my Masters Degree, and for some reason all the profs think they are the only course giving homework! I don't have the time for all of the new catalog work. Thanks a million to those of you helping - please call me just to check in. I need to know you haven't forgotten me!!!!

See you at the meeting!!!!!

MEETING MINUTES OF PITTSBURGH
USERS GROUP
Date: Sept. 18, 1988

Location: South Campus, Allegheny Community College

Meeting called to order by Pres. Taylor at :00 P.M.

Minutes of the last meeting were read by Secretary Reich. Approval of them was moved, seconded & passed.

Treasurer Shoemaker gave a Report. Balance on hand at the start of August was $614.00. After expenses for August, balance was $588.47. Against that balance, there is a reserve amount for the account of Funnelweb in the amount of 47.00. The treasurer announced that he had some miscellaneous items for sale--2 TI Writer books, overlay strips & joy sticks.

Librarian Harper gave her Report. Certain discs were ordered & not picked-up. "M" Copy is a new disc available from the library. It is advantageous to have for copying a disc which will run-off very quickly. Best of Brittain is another new disc available. The Dallas Library arrived--discs & catalogue. The catalogue is available to PUG members--either SS or DS. Members will have to replace the discs. Four sections of the new catalogue of our library have been completed.

SYSOP Kelly reported that the BBS is running well. At that time, there had been 1400 calls. 71 users had registered A new console will be used to speed operation. The speed of the CPU has been doubled. Best of Brittain, Part I was going to be put on the BBS; also GPS Assembler & Disassembler.

Newsletter Editor Bucher reported that the problem with the printing of our Newsletter is that our copy is done on an NX-1000 printer which uses blue ink. Everyone at the meeting received the Sept. Newsletter Audrey was congratulated by those present for doing a fine job.

Pres. Taylor gave his Report:
The "Would Like To Buy And Sell Book" was passed around.

Rick Keppler will loan a printer to the PUG for loaning to members.

Paul Brucker and Susan Harper's Alma Mater, St. Norbert School, were welcomed as new members.

A new Gram Kracker drive for the P-box is to be available soon at the price of approx. $150.00.

The Chicago fair will be Nov. 12, 1988

OLD BUSINESS:

Inscebot orders have been accumulating for TI Base, TI Artist, Artists' Extras & Display Master. Final orders & money were collected at the meeting.

Purchase of a machine for re-inking printer ribbons was discussed again particularly because the printer for the newsletter needs to use black ink. Re-inker will cost $57.95. Four adapters for the most popular printers will cost $16.00. Ink is an additonal cost. Motion was made, seconded & passed that the re-inker with accessories and ink be purchased by the PUG.

John Willforth announced that there have been problems with the Grand Ram Card. He doesn't recommend buying it at this time. He recommended buying the Myarc or Horizon card.

$57.00 has been collected for Funnelweb. It will be sent to the Authors.

NEW BUSINESS:

Pres. Taylor passed around information at a disc controller up-date kit to provide 4 drives and faster access time. It sells for $19.95. He also passed around information about an RS-232 up-date kit which adds a TF command. If a program calls for a thermal printer, it will convert it to PIO. For serial output, can use letters SIO instead of RS-232; for $14.95.

There is an up-date for the Triton Super Extended B cartridge that sells for $22.95.

Pres. Taylor read a letter from Texment which made additional offerings.

Mickey Schmitt announced that Oliver Twist is now available. She is selling advanced copies at a reduced price.

Bingo was played for the raffle. The prize was TI/Base.

The following demonstrations were given:

Gary Taylor--Displaymaster & Archiver.

Meeting adjourned at 8:20 PM.

Respectfully Submitted
Herbert H. Reich, Recording Secy.

The following article was taken from the September issue of the St. Louis
99'ers newsletter "The Computer Bridge".

---

|                                                                             |
| COMPUTING FOR YOUR RETIREMENT INCOME                                        |
|                                                                             |
| Dr. Roy Tamashiro                                                           |
|                                                                             |

---

Although many of us are quite a few years away from retirement, we might be hoping to retire early, or
to spend more years in retirement. To get a truly realistic picture of your financial future, you should
consult an expert in this field. The computer program below ("RETIREMENT INCOME ANALYSIS") gives a
very rough estimate of how you might be able enjoy a financially comfortable retirement.

"RETIREMENT INCOME ANALYSIS" works in TI-BASIC or EXTENDED BASIC. Type in the program,
proofread it, and SAVE it to a tape or disk. When the program is run you are prompted for the following
items:

```
This year is: 19__          [Look at a calendar if you don't know.]
Current Monthly Income: $___ [Enter your gross monthly income.]
Inflation Rate (%) ____      [Make an educated guess. The inflation rate is about 4 percent now.]
Years to Retirement:___      [Subtract your present age from your retirement age.]
Amount Invested for Retirement $____   [Include all of your retirement assets including IRAs, pension plans,
                              retirement annuities, etc., but do NOT include non-retirement investments,
                              checking or savings accounts, or Social Security.]
Assumed Interest Rate (%) ___ [Estimate an annual average of interest or dividends on your retirement investments
                              between now and your retirement age.]
Annual Additions to Retirement Investments: $_____   [Estimate how much you will add per year to your
                              investments.]
```

The program calculates how much income you will need when you retire. Many experts say that you need
about 75 percent of your pre-retirement income, but with inflation included in the calculation, the monthly
figure at retirement is likely to be higher than your present income.

Social Security benefits are not included in the analysis, nor are the taxes you will owe on your
various tax-deferred investments. You may want to adjust the recommendations given to account for
these and other omitted factors.

```
100 REM **************         )*(1+RATE)^YEARS)+.5)       o receive":"about $";FUTURE;   E)*12)/RATE)/(((1+RATE)^YEAR
110 REM * RETIREMENT *         230 INPUT "Amount Invested f "per month on"               S-1)/RATE)+.5)
120 REM *   INCOME   *         or retire- ment: $":B        300 PRINT "your investment i   360 PRINT "raise your annual
130 REM * ANALYSIS *           240 INPUT "Assumed Interest    nterest or dividends."       additions by $";MORE;
140 REM **************         Rate(%):":IT                  310 IF FUTURE>=NEEDED THEN 3   370 PRINT "to total ":"$";MO
150 REM 1988, ROY TAMASHIRO    250 INPUT "Annual additions    90                           RE+ADD;"per year."
160 DEF RATE=IT*.01            to retire- ment investment $   320 PRINT :"If you will have   380 GOTO 400
170 GOSUB 410                  ":ADD                          no other":"income, then you   390 PRINT :"You are in an ad
180 INPUT "This Year is: 19"   260 FUTURE=INT(((B*(1+RATE)^    should":"increase your inve    equeate     investment posit
:NOW                          YEARS+ADD*(((1+RATE)^YEARS-1   stments"                       ion for your retirement."
190 INPUT "Current Monthly I   )/RATE))*RATE)/12+.5)          330 FIX=INT(((12*(NEEDED-FUT   400 END
ncome:$":MONTHLY              270 GOSUB 410                   URE))/RATE)/(1+RATE)^YEARS+.   410 CALL CLEAR
200 INPUT "Inflation Factor    280 PRINT "You will need abo   5)                            420 PRINT " RETIREMENT INCOM
(%):":IT                      ut $";NEEDED:"per month when   340 PRINT "by about $";FIX;"   E ANALYSIS"
210 INPUT "Years to Retireme   you retire in";1900+NOW+YEA    to":"$";FIX+B;"this year, or   430 PRINT " ================
nt: ":YEARS                   RS                             "                              =========="
220 NEEDED=INT(((.75*MONTHLY   290 PRINT :"You can expect t   350 MORE=INT((((NEEDED-FUTUR   440 RETURN
```

## REMINDER :

## CHICAGO/MILWAUKEE FAIR
## NOVEMBER 11-13

# DISK DRIVES (#2)
## by John F. Willforth

Last month I rambled on about the function of disk drive in the scheme of things. This month I would like to show a tool to exercise and test most single and double sided 5 1/4" disk drives as well as later show modifications to enable it to support 3 1/2" drives. This unit is designed to support SA 455 (Shugart), TI, IBM, COMPACQ, Etc.. All clubs should at least have on to test and repair their drives.

This unit can check the selection of units, check the motor circuit, check all sensors, and write, read, step in or out, as well as select the head (side).          The use of this tool is increased with an oscilloscope. With next months article, I'll include a power supply schematic.

### PARTS LIST

C1,C2= 470pf. Capacitor
C3= 1 ufd. Capacitor
Q1= 2N2222 Transistor
D1,D2,D3,D4= LEDS
R1,R2,R3,R4= 150ohm 1/4 W.
R5,R6,R7,R8= 1.5K  1/4 W.
R9,R10= 10K 1/4 W.
R11,R12,R13,R14= 4.7K 1/4 W.
VR1= 50 K Potentiometer
U1= 74LS04
U2= 74LS123
S1= 4-Position Rotary Switch
S2,S3,S4,S5,S7,S8= SPST Sw.
J1= 34-Pin Card Edge Conn.
J2= 4-Pin Power Conn.
TP1,TP2= Insulated Test Pts.
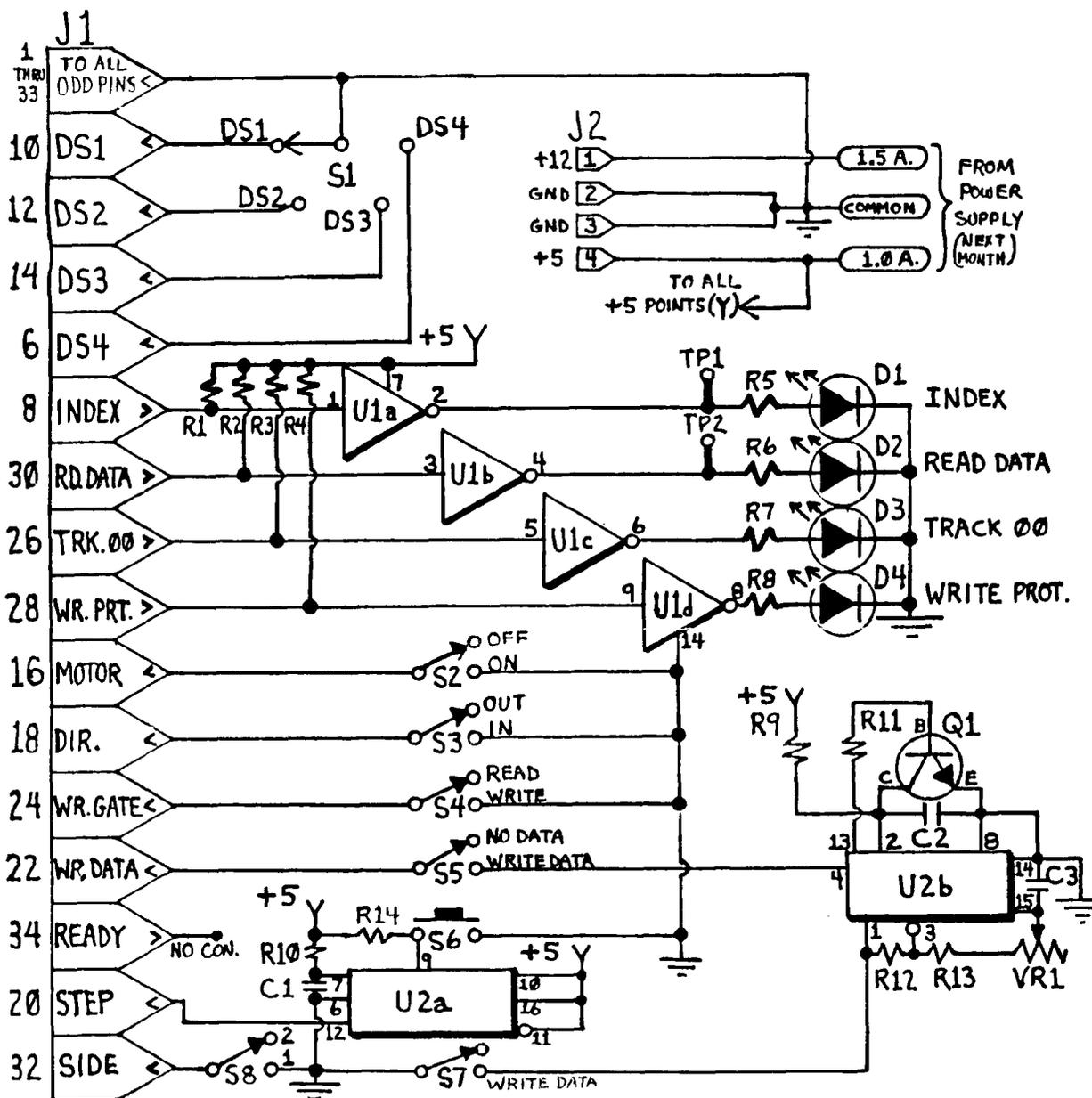
```
OCTOBER 1988
 S  M  T  W  T  F  S
                   1
 2  3  4  5  6  7  8
 9 10 11 12 13 14 15
(16)17 18 19 20 21 22
23 24 25 26 27 28 29
30 31
```

```
NOVEMBER 1988
 S  M  T  W  T  F  S
       1  2  3  4  5
 6  7  8  9 10 11 12
13 14 15 16 17 18 19
(20)21 22 23 24 25 26
27 28 29 30
```

# CCAC
# SOUTH CAMPUS
# 3 PM

### PUG OFFICERS

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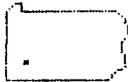
USER'S GROUP
P.O. Box 8043
Pittsburgh, PA 15216

EDMONTON 99'ER USER GROUP
P.O. Box 11983
Edmonton ALBERTA T5J3L1
CANADA

AIR MAIL

## DATED MATERIAL

DELIVER BY
OCTOBER 11TH

## PUG BBS

412-824-6779

300/1200/2400 BAUD
24 HRS