

Home computer
USers SロOtIight
a monthly publication of the
Milwaukee Area 99/4 Users Group


Routine to put TEZ into 1200 EAUD GY FAUL CHARLTON
Foutine requires Laad Interrupt Switch

1. As semble source code
2. Load program with E/A option 3
3. Switch modules from E/A to TE2
4. Fun TEZ normally with cursor in upper left hand gereen corner
5. Fress Load Interrupt Switch

* Load Interrupt Routine
* to convert tE2 to 1200 EAUD


4:22 No. Elenkay - hawnetes w: gara

| dent........さers: Irink! | 3270170 |
| :---: | :---: |
|  | 264-4755 |
|  | 482-2054 |
| Ercretary........jim Etenharét | 475-002E |
| Librarians.......E.J. MenderEhe | 545-4505 |
| Fred Fabian | - $27-3618$ |
| Newsletter....... 6 ene Hitz |  |
| Assembjy SiF.....lis yincent | - -0, |

FLRTH info........Eens !it:
 is upen to ali interestac in using, playing with. learning acout or progr inmino in the still-kicking



in the !ower level of Mithatach

$<I D S$ ，you vant your childran to learn to glay the giano，but can＇t afford one pighe now？Here is an inexpensive substituet：the il -9 ／hA piano．
you play only．the boteon thret rows，essentially all of the letezr kays．You can olay
thee with the ghift key up or down．In one case you play whole notes，in the other one you play half notes，which repeat when you hold domn the key．
The very bottom row plays noise tonks when the shift key is locked down，very amusing to liette ehildren．
To keep the pregram stmple，she sersen is left blank．But that does not inoede all you budding programers to ereate gom ntce graphics to entiven this matic progran，and anke it even mors attractive to enfldren．
This program was published in Miteinian，the Suedish newsletter for 99－pis，by an unknown author．The transhation was done by murtes E．T．Suimen of the Washington dC Area g9－er computer ciub．

SB REI PIAND，NITTINIAN 84－2
188 CALI KET（B，K，5）：IF S®A THEN 188
118 IF K＝45 THEM 180
128 IF K＜44 THEN 188 EISE IF K＞ 48 ANO Kく 58 THEN 108 ELSE IF KS 68 MO K KES THEN \＆ 88
138 IF K）Sg ANO K（SO THEN 190 ESE IF K） 96 THEN 208 IOAEDX IF LOHER OR LHPER CAS E LETTER HAS EEEN PRESSED
140 if $K=44$ THEN CALL SOMNOR－180，1588，8 1：GOTO 188
158 IF K＝40 THEM CAL SOMNOT－188，1780，8 ：：GOTO 188
188 IF K＝SE THEN CML SOMOE－189，898，8j： ：GOTO 19a
178 If $K=58$ THEM cel soungt－18e，lsed，al ：：GOTO 188
 GOTO 188
185 REM LPPER CASE LETTERS ASEIIRES－）99
198 ON K－84 GOTO 210，228，238，240，259， 280 $, 278,288,298,388,318,328,330,348,759,368$ $, 378,380,358,488,418,428,430,448,450,460$ 19S REM LOHER CASE LETTERS ASE11＝S7－）122 280 ON K－96 GOTO 470，40，490，590，519， 320 $, 530,540,550,560,570,580,590,880,610,820$ ，839，848，858，889，670，684，888，780，718，728 283 KET LPPER CRSE LETTERSHMNF TONES＋NO 15E

228 CALL SOLNOC－128，－0，91：：GOTO 188
298 CALL SOLNDC－128，－1，8j： 26070188
240 CALL SOUNDE－128．822．8j：3070 188
290 CALL SOUNOP－128，150，8j：：GOTD 189
289 CML SmanO（－129，740，8111 G070 180
270 CML SOANO $-128,831,8 j 11$ G070 180

285 CAL Sounct $-128,311,93: 1$ G070 180
380 CML SOUNOC－128，1189，91：166070 180
318 CAL SONOL－128，1245，81：$:$ coto 100
328 CML SCLNOC－128，1489，9J：：6010 180


340 CAML SOUNQ（－120，－5，aj：：GOTO 189
359 CALL SOUNO（－120，378，a）：：GOTO 1a日
368 CALL SOLMOT－120，415，aj：：GOTO 180
378 CALL SOLNO $-120,177,9\}:$ ：GOTO 188
389 EAL SOHNO［－128，185，8）：：G0T0 189
390 CAL SOUND（－120，554，8）：：GOTO 188
480 CRL SOUNO（－120，208，8）：：GOTD 188
410 CML SOUND（－120，277，8）：：60T0 109
429 CAL SOLNO $(-120,-7,8):$ ：6010 180
430 CML SOLNOE－120，139，a $:$ ：G0T0 189
440 CML SOLNO（－120，－2，81：：GOTO 189
458 CML SOLND（－128，233，8）：：GOTO 188
480 Cal SOLNO（－120，－3，aj：：60T0 198
4ES REM LOLER CASE LETTERSILHOLE TONES
479 CRLS SOLNO $-188,294$, a $:$ ：GOTO 188
48e CML SCLME（－198，11フs，e）．：：coro 189
430 CML SOUNO（－108，988，8）：：GOTO 189
580 CALL SOUND（－18B，349，aj：：GOTD 188
318 CAL SOUND（－188，131，8）：GOTO 189
528 CALL SOLPD（－180，392，a）：：GOTD 189
539 CML SOLNO（－180，440，8）：：GOTO 108
540 Crll SOUNO（－180，494，8）：：3010．188
558 CML SOUMO（－189，229，8）：：G0TO 188
369 CAL SOUMO（－189，323，8）：：GOTO 188
578 CALL SOLNOT－108，587，181：：G0TD 188
SE8 CAL SOLNO（－188，859，83：：GOTD 188
558 CALL SOLNO（－18B，1397，8）：：GOTO 19g
639 CML SOLNOP－188，1319，8j：：G0T0 198
619 CML SOLNOC－180，247，日）：GOTO 190
628 CAL SOLNOP－18日，282，aj：：GOTO 188
639 CML SOLNO（－18a，118，a）：：GUTO 189
648 CML SOLNOC－108，147，8）：：GOTO 188
850 CML SOLNOT－189，338，83：：GOTO 188
880 CALL SOLND（－188，165，a\}: : GOTO 188
070 CALL SCLNAO－189，196，8\}: : GOTD 188
680 CAL SOLNO（－189，1845，8）：：GOTD 188
038 CAL SOUNDC－180，123，81：：GOTO 188
780 Call SOUNOC－180，880，81：：GOTO 188
710 CRL SOUNO（－189，175，18）：：G0T0 188
228 cmb SOUMO（－190，784，8）：：GOTD 189

```
DOCUMENT F.F:INTEF: . . . . -
```

Ey: George Cet:is

The following extended basic program allows you to print out instruction or help files without using E／A or TI－Writer．Simply place the disk containing the files into your drive after loading the prooram．This program will scan the disk：for Dubo type files and offers a menu selection for the files to be printed．

EDITORS NOTE：If you do not wish to type this program in，it will be available on the Disl：of the Month．

## 100 DIM FNE（127）

101 FEM FESEFVE SFACE FOF MAX NLMEEF OF FILES ON DISKETTE
110 DISFLAY AT（5，B）EFASE ALL：＂ENTEF DISK DFI＇VE WHEFE FILE IS LOCATED： $1 "$
120 ACCEFT AT（7，19）VALIDATE（＂1234＂）SIZE（－1）：N
170 CALL CLEAF
140 D生＝＂DSK＂\＆STF\＄（N）\＆＂．＂
150 OFEN \＃1：D $\ddagger$ INFUT ，FELATIVE，INTEFINAL
160 INFUTT \＃1：G末，G，G，G
161 FEM FEAD FECOFD \＃O ON DISK WHICH IS DISK NAME ETC
$170 \mathrm{I}=1$
180 INFUT \＃1：A $\Phi_{,} T, X, X$
181 FEM FEAD FILENAME，TYFE，SIZE AND \＃OF FECOFDS NOT USED
190 IF $\operatorname{LEN}(\hat{A} s)=0$ THEN $2 \sigma 1$
171 FEM TEST FOF LAST FILENAME
200 IF $T=2$ THEN FNs（I）$=A$ S
201 FEM TEST FQF DISFLAY／VAFIAELE FILEE，ONLY ACCEFT DV FILES
210 DISFLAY AT（I＋E， 3 ）：I：＂．＂：FN\＄（I）
220 IF $T=2$ THEN $I=I+1$
2－0 GOTO 180
$2 \Xi 1$ CLOSE \＃1

240 ACCEFT AT（24，3）BEEF VALIDATE（NUMEFIC）：CHOICE
241 F\＄＝FN\＆（CHOICE）
260 Dま＝＂DSK＂
270 OFEN \＃1：D\＄，DISFLAY ，VARIAELE BO，INFUT
280 DISFLAY AT（S，J）ERASE ALL：＂FRINTER DECRIFTION＂
284 FEM INSERT DEFAULT FRINTEF IN LINE 285
$285 \mathrm{~F} \ddagger=" \mathrm{FS232} / 2 . \mathrm{EA}=4800 . \mathrm{DA}=8 "$
290 DISFLAY AT $(6, \overline{3})$ ：F＇$\$$
300 ACCEFT AT（ $6, \mathbf{3}) S I Z E(-L E N(R \neq)): F \$$
310 OFEN \＃2：F\＄，OUTFUT
उ20 FFINT \＃2：＂＂：＂＂：＂＂
350 LC＝
340 LINPUT \＃1：A\＄
E50 FRINT \＃2：A\＄
360 LC＝LC＋1
361 FEM SETUF FRINTEF OUTFUT FOF 66 LINES FER FAGE，Z ELANK LINES AT TOF
362 REM 55 LINES OF TEXT，SKIF PERFORATION
S6S REM CAN BE DEFEATED BY FILES CONTAINING PFINTEF CONTROL CODES
370 IF LC＝58 THEN 380 ELSE 400
380 FOR I＝1 TO 11 ：：FRINT \＃2：＂＂：NEXT I
390 LC＝J
400 IF EOF（1）＝1 THEN 410 ELSE 340
401 REM TEST FOF END OF FILE
410 CLOSE \＃1 ：：CLOSE \＃2
420 END

## POOR MAES DS.DD DISK COMPROLLER

or how to get jbak. per drive using the II disk controller card and 96 (p) double side drives. (e.g. TEAC 55F, TANDOH TMIBO-4)

The icllowing cade, when substituted for the existing DSR code, converts disk 11 and disk 12 into $48 / 80$ track interlace node and disk 13 to $48 ; 88$ track non-interlace (single-side). The nodification has been completely conpatible with all soitware tested including
P-Systea, Disk Manager, Editor/Asseabler and BASiC. Note however that files can only be exchanged with "noraal" forat disks using the disk capy routines or DSK?.

Any Questions way be directed to the zuthor at:
Andi Coeser
12: Clearatet Drive
Domnington, Fa. 197.
Cospuser e 71816,1743


Delphi Aridy482a

## 

| CLR | R7 | ; Existihg CODE |
| :---: | :---: | :---: |
| Cl | R1.1440 | ;1440 IS MAX SECTOR ; |
| JHE | \$+15: | ; Jump to error if greater |
| C1 | R1.1 | ;CHECL: FOR SECTOR=8 |
| JH | 55 | ; JUMP IF NOT |
| 8 L | 0:4:24 | ; IF SECTOR=8 THEN RESTORE |
| CLf Fib |  |  |
| C8 |  | ;COMPARE DRIVE : 103 |
| U | $\$ 18$ | ; JUMP IF 1 OR 2 |
| DI: | $8: 441 E, R 8$ | i IF DRIVE=3 USE 9 SECTORS PER TRACL |

;if drive < J use la sectors per track
;Rg MSE COHTAIMS INYERTED TRACK
;SET UP YDP WRITE
; STORE NEN TRACK 1
; WRITE TRACX I TO 177! DISK CONTROLLER
;CHECX FOR SECTOR >8 (SIDE TMO)
; If if Subianct hine and....
;SELECT SIDE TWO (HEAD 2)

$$
\text { L] R7, } 2 ; 8180
$$

538 SMPE $\$ 1$
(N) RI

MOYR K1, © 15 SFF C
JHP 348
$\$ 18$ CB RB, BSSFF2
;al msp contains inverted sectof I ; HRIIE to liti sector register ; WASIE A WORD'!!!!!! ; BACK TU ORIGINAL CODE.
; IF DRIVE=3 USE 9 sECTORS PER TRACK.

BL 1:3614
MOUK FR, eiffFE(RI5)

Cl KI, 9
UL $\$ 30$
Al inl.-9
SEO 7

To install a 2732 or 2732A PROM on the II disk controller card with the atoue chinges pertors the following steps.

Fenove the ROM at location U2S.
On the back (non-component) of the board cut the nide ( +5 y ) etch between 426 pins 21 and 24.

On the tront of the board cut the wide etch going to $\mathrm{U}_{2} 6$ pin 21
On the front (component side) of the board cut the etch gaing to $\mathrm{V}_{2}$ : pan 18.

NOIE: to ensure that the etch is cut 1 recosenend that two cuts l'is inch apart be ade and the capper trace te reaved between the cuts.

Install a 24 pin socket at 426
On the back (non-coaponent) side of the board add the following wira
U26 pin 18 to U 26 pit: 28
U2: pin 18 to U 26 pin 21
Via hole in center of chip area between 426 pin 21,22 to junction oi C26 and 436 pin 24 ( $+5 \%$ )
lnstall proe in socket and thats all!!!







ONE－ 9 pin D－plug（joystick pluq）

TWO－lengtis（your chaice）of 2 conductor ware

TWO－CUS photacells
TWO－junk Flair pen w／cap for anything big enough to hold the EDS cells

Now that you have the above， lets get to the fun part．First off gut the pens out and cut off the end that the tip was $2 n$ ，and then punch out the end of the cap．Feed the wire thru the bottom of the pen out the tip． Ealder the the two wares to the leads of the CDS cell．and place the cell into the cap and put it on the old pen body．Tape the wire around the pen to help prevent it from pulling out by act：oent．

Grab the $D-p l u g$ and hard wire the leads（pin layout is below） for pen 11 to pin 77 and $\# 9$ （this would be the rignt direction with CALL JOYST），with pen 22 solder it to pins 42 and ＊S（CALL JOYST left oirection）． If you have not figured it out yet，you can add up to four more pens using the other moves of the joystick routine．Wrap tape around the plug to protect the wiring．

Now if you have not vet converted the included program ラミこ with ：t．su you can test your new light pens．As yout can tell the program name is＂DOT＂ ind you gust touch the cots on the screen with the pen． Depending upon your TVimonitor． you may need to adgust the ＝untrastibrigntness．

Dne more thing before you get too busy with the pens I have to give credit to Edwin Mcfall of Aberdeen，Wast．Thru his work thas 15 possible．Hopefuly he will be joinang us here soon． If you have any questions direct them to me：Garry Noel IDW 75136，324


$=4$ THEN CALL MAGNIFY（1）：GD
TO 61D
590 NEXT I
6OO GITO 520
610 CALL CLEAR
620 CALL SPRITEIM1，96，16，92， 124）
GIO DISPLAY AT $(16,6)$ BEEP：TO
UCH DOT TD START．－
641）CALL JUYST $(1, X, Y)$ I：IF $X$
＜4 THEN 640
650 CALL SOUND $(-100,220,5)$ i：
CALL SDUND（－100，880，0）
660 CALL CLEAR
670 FDR L $=1$ TO 20
680 CALL SPRITE（＊1，96，16，INT
（RNDO）＋1，INT（RNDO）＋10）
$690 \mathrm{~N}=0$
TOO CALL JOYST $(1, X, Y)$
710 IF $x=4$ THEN 730
$720 \mathrm{~N}:=\mathrm{N}+1$ ：：GOTO 700
730 SC＝SC＋N： 2 CALL SOUND（－1
$00,441,5)$
740 DISFLAY AT $(1,1):$＂SCORE $=$ ；SC
750 FDR $x=1$ TO $100:$ ：NEXT $x$
760 NEXT L
770 FDR $Z=1$ TO SC STEP 10
780 CALL SOUND（－100， $2+110,0)$
790 NEXT 2
BDO CALL CLEAR ：：CALL SFRIT E（\％1，176，16，150，123）
E10 DISPLAY AT $(10,6):$＂YOUR 5 CORE $15{ }^{\circ}$ ；SC ：$: ~ D I S P L A Y$ ATII B，З）：＂TOUCH DOT TO PLAYA GAIN．
820 IF $5 C>150$ THEN BJO ELSE DISFLAY AT 12,6 ）：＂YOU CA N．T FOOL ME：YOU CHEATED
！＂：：GOTD 900
GこO IF SC＞200 THEN E40 ELSE
DISPLAY AT（12，1）：＂VERY GOOD
！YOU＇VE MASTERED THE
DOTS．＂：＝GOTD 9OO
840 IF SCン225 THEN 850 ELSE
DISPLAY AT（12，1）：＂GEE WIZ！I
DIDN＇T KNDW THAT HUMAN
COULD MOVE THAT FAST：＂：：GD TO 900
850 IF SC 3250 THEN 860 ELSE DISFLAY AT（12，1）：NOT BAD，B UT YOIJLL NEVER SWAT F LY AT THAT SFEED．＂：$:$ GOTO 9 00
860 IF SC $>300$ THEN 870 ELSE
DISPLAY AT：12，i）：＂YOL ：$A E E D$ A LOT MIJRE PRACTICE＊：：GT 0900
870 IF SC＞JSO THEN 880 ELSE DISFLAY AT（12，1）：＂I THINK YO U NEEIS A SLOWER EAME．M AYBE CHECKERS．＂：G GOTO 9OO 880 IF SCン400 THEN 890 ELSE DISFLAY AT（12，1）：＂DIDN＂T ANY ONE TELL YOU THAT YOUFFY
ING FOR A LOW SCORE！＂：GUT 0900
日90 DISFLAY AT $(12,1)=" L O O K . S$
LIKE YDU NEED HELP．TRY PD
INTINT；THE FEN AT THE DT
STUFYD！＂
QOO FOR $Z=1$ TD $500=:$ CALL $J$ QYST $(1, X, Y)::$ IF $X=4$ THEN 93

0
910 NE：XT Z
920 CALL CLEAR ：：DISFLAY AT
（12．1）：＂DOTS ALL FOLKS．．．．＂
：：ENC
930 CALL DELSFFITE（ALL）：：ED TO 48\％




 belanare 1980 EXCEL ENT disk cloner; features atility ta copy te $=$ drives at grea and uses the foundation : a3k ard ta copy a disk in dik pase!
(ij) MISAEM Fred Howkins 0220 North sth Strest,
 feitures and terrific uccurentation for those thet fay
 Scisenville. FL. zann hllows inputting start and stof secter numer for capining disks.
 xi ar Eih. No tartridge needed!

 pranter or tisi for easy readiag and referenese pragrat yar:athes ta line muter used.
 Epsolk cunatitio printer nath touble ar singiz size and yertacal or herizontel page priateut.
 Sotes xe progran detajase that allows cetaloging disk-based prograis.
(?) PAET TE:K Piu! Chariton ilio Pinehurst Court Chalotteeville, yn z2opl Siafly, THE BEST TEFMDHA EMLATER : : ine morla!

〔!0] EfRite dullite jenn Tayior 2170 Estaline Drive florence, AL. Xebzo is graphics generating prograi mith aseently language routines for speed at crucia! places. includes a ful! disk uf freforaed graphics.
[:!1 fllat 39 ithade heithefer 1000 Harbury orive Cincinnati, oh. iEnNO An EkTIPE language for the it that is the siaplest programing larguage known to us for snyone a! se !
[12] TETTH Ken Carruthars jeju Faberge hay, Sicraaentu, Ca. geast. A is ininal Enuliator Progran written in Forth Language. A nust for persons interasted in Forth

 Palisades, CA 90272 An extrexely fast $x$ prograo with dsseably routines to create graphics sprites with easy sursor centrol gaving for progrial insertion.
 Fittshurg, $F$. 5527 Super-fast disasseabler, 1005 aEsent? y and full teatured.

## FAIRWAFE

 5jinj Fresare gis Eystes for the 9\%/4A.
 langauge progran that takes in uncearoesea zifai ai
 yi=id faster tase tixes.
 sbove.

 transfar cijetilites.

 forget IIPS M2
 Ehicago ! 1. bubzt


 Managesent Modula -ilse.

 inferastion !ater.

 Trivia fans.

 graphics draning prourai written in forthe mith an sutstanding deap, and documentation.
[25] CATEIS, Marty Krall, 210 Kaplen AVE. fitteturgh. Pa. 15227. A catalogirg librey prograw, capasity diske, gop files with sany good teitures.
 Place, Lake vilia, !1. 60046. À55Efilly !etiguege Tersinal Eaulator, andu driven, a-acden transfers.
 tisk and staped asler.
[27] CHECYBCOK and gUDGET MAMAGER, Jahn Tzylor, 21:0
 efficient prooria for both chect book and budget azintenante. itio plus disk and stsaped aajler.
!29] Stperaus II, Edgar L. Dchaann, foute 5, Sü at, Alvin, Tx. 775li. Enhanceast e! il's Euperbug, inc!udes changeof gutput device fros screan, coltr toggles, added comende, and wore. $\$ 10$


TIPS FROM THE TIGERCUB

## 126

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The entire contents of Tips from the Tigercub Nos． 1 through 14，with more added， are avallable as a full disk of 5 prograns，routines and files for just $\$ 15 . \mathrm{ll}$ postoaid．
$\rangle\rangle\rangle>\rangle>$ NOW AVAILABLE $\langle\langle\lll \lll \lll \lll$
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＞＞）＞ALSO NOW AVAILABLE《＜＜＜＜＜＜
New Catalog $\%$ for $\$ 1$ which is deductable from your first order．Describes 14i original prograss for only $\$ 3$ each（plus $\$ 1.5 \$$ per order for casette or disk， package and postage）．

If you have ny previous catalog，the following are now avallable in Extended Basic versions－Fast Addition Practace，Submarine Hunt，Fithatik；Hawaland falso now avallable in Basic with Speech），Long Division Cryptogras，Miss Spell， Scraabulation，Bargraffer， Squinch，Dry Gulch，Name That Tune，Scrun，Hidnight Trall，Nimbo，kindertiaes， Optical Hlusion，Bazoo， Synonyay，Speeder Reader， Changerdo，Elunk，Fraction Math，Three Euckets Fuzzle， Rowan Numbers，Match $A$

Patch，Kinderannus，I E Spelling，Casting Dut Nines， Haunted Graveyard，Spalling Teacher，Hononyay，Antonyay， Old－Tiner Puzzle，Ten Thousand Sights，Mechanical Aptitude Test，Junior Speeder Feader，and Bars and Balls．

Due to reduced prices for disks and eailers，the PPM charge is now \＄1．58 for either disk or casette－BUT PLEASE BE SURE TO SPECIFY WHICH！

And by best seller－ NUTS \＆EOLTS；a full disk of lag lyes，I said 1月0） utility subprograns in MERGE format，ready for you to arge into your oun prograss． 13 type fonts， 14 text display routines，？ wipes， 8 pauses， 3 progranimg alds， 9 data saving and reading routines， 5 graphics routines， 4 tine and date， 6 ausic， 12 sorts and shuffles， 2 printer aids， 4 kev and joystick， 4 math， 2 protection and 7 siscellaneous，plus a tutorial on subprograns． With documentation，example of using each subprogran． All for only $\$ 19.95$ postpaid．

Naw for the old
business－
I was mortified to find an error in the Unprintable Unkeyable Progran in Tips ＊22．The last line should end with ELSE 181，not ELSE 139．In the Grocery Shopping prog̣an in Tips \＃21，your wife will never get to the zucchini unless you delete line 14 and change line 201 to－ 29 IF EDF（1）＜$>1$ THEN 13G

Sorry about that．And the update to the Menu Loader in Tips \＃22 will not list all listable files， just d／V8y files．I naw have a version to really list all listable files， 1 think，plus show protection，
duap the catalog to the printer，rescan，etc．，but an not sure all the bugs are out 50 will publish it next month．

Folks have been asking why their orders for II－WRITER COMPANION， aentioned in Tips \＃22，were being returned unopened， 50 I called Bill Brawning．He said he found he was going broke selling it for \＄2．5f， but he is now prepared to supply it for \＄6．5f．Still a，bargain，in ay opinion．

Barry Ensley warns that when FCTN $V$ is used for a blank in a filenane，as aentioned in Tips \＃25，it is not recognized by the Disk Manager．

In Tips \＃21，I said that the special characters available on the Geaini printer could not be accessed fron TI－Writer．I have since learned that Star Micronics hid a valuable feature of their printer in a paragraph of gobbledegook computerese in the manual． See＂Other Function Codes＂， ESC＂＞＂，ESC＂＝＂and ESC ＂\＃＂．In plain English，you can access these codes by CTRL U，FCTN $F$ ，CTRL U， SHIFT $>$ ，then type the character with an ASCII 128 less than the character you want．In other wards，if you want CHFs（168），hit the space bar（ASCII 32），etc． To get back to the nornal character mode，use CTRL $U$ ， FCTN R，CTRL U，SHIFT $\#$ ． Many thanks to David Aragon （San Antonio Area 99ers newsletter，Aug．1985），who described how to do the same by transliteration．

In Tips \＃25，I said that a progras which had been converted to I／V 254 fornat by adding REM lines could be converted back to program format by deleting
the REM lines and reSAVing． Hell，it usually can－but not almays！

I have been receiving inquiries as to whether ay programs published in the Tips are public donain prograns which can be placed in user group libraries and on BBS＇s．Well，the copyright notice on this newsletter is really only intended to keep anyone from reprinting it for personal profit．I have always thought that prograns published for the purpose of being keyed in should be OK to copy，and I don＇t intend to claie that＇you must ainn the sagazine＂！However，a peculiar situation has developed．The short prograns which 1 wrote to give away to promote ay other programs，have becone the bread and butter of ay business！If it was not for the sales of the Tips disk and the Nuts \＆Bolts disk，I would long ago have gone out of business．So，I would appreciate it if you would exercise some restrant in putting ay Tips prograns in your libraries or in downloadable fora on your BBS．

And I do consider ay two Tips disks，as complete collections of prograss，to be copyrighted aterial which should not be placed in libraries for capying．

In the Autonatic Mouse Mace in Tips \＃23，you can inprove the naze by adding these lines－
 $515 x=x+1$
$555 x=x+1$
$595 x=x+1$
$1325 x=1$
And the last word－I think－on the challenge to quackly scrable the numbers 1 to 255 ．Ian Swales sent me，from Belgiun，two
routines which beat everyone else－and then sent ne two aore which beat his first ones！His PEEK version－ 1日i dil A（255），C（255）：：FOR $\mathrm{K}=255$ TO 1 STEF－ $1:$ ：RANDOM IZE ：：CALL PEEK（－318Be，B）：： $\mathrm{J}=\operatorname{INT}($（BEK $/ 256+1):$ ： $\mathrm{C}(\mathrm{K})=\mathrm{HAX}$ （J，$A(J)):$ ：$A(J)=$ max（K，$A(K)$ ）： ：NEXT K

And see if you can unravel the logic of this truly elegant bit of code！ 109 DIM A（255）：：RANDOMIZE： ：FOR K＝255 TO 1 STEP－1 ：： J＝INT（RNDEK＋1）：：T＝AAX（J，AK 11：：$A(J)=\operatorname{MAX}(k, A(K)): A(k)$ $=\mathrm{T}$ ：：NEXT K

So，on to new business－

## announcing

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To give you an idea of Barry Traver＇s knowledge of our computer，try this one． I＇ve figured out the why， but I＇ll have to ask Harry to explain the why of the why！
108！Linput puizle／bug by E．A．Traver
11月：buESTIONS？Send SASE to Garry Traver
124！552 Seville 5t． Fhila．FA 19128
 put fuzzle／bug＂：＂iy Eakry th AUER ${ }^{\text {＂}}$
$14 i$ Print＂Can you figure ou $t$ why your computer mill not obey？＂
15月 PKINT＂why won＇t it stop
when you tell it to？＇：：：a progran to write a progran 16 LINPUT＂Hant ee to stop？ （YES／NO）＇：WS
179 IF Ws＝＂YES＂then stop el SE 168
188 END
It seens that any of you still haven＇t heard of Super 99 Monthly，published monthly（and on tise！）by Bytenaster Computer Services， 171 Mustang Street，Sulphur，LA 78663， for $\$ 12$ per year．The May 15sue contained a Word Frocessor Duap，to duap a graphics／text ecreen into a D／ves file which can be printed out of the TI－Writer Foratter－that progran alone is worth the annual subscription price！

I＇ve said it before， there is more than one way to skin that poor cat．This is ey routine to alternate between the \＃1 and＊2 joysticks．
l＝ $2+1+(\overline{2}=2) \neq 2:$ ：CALL（uOYST $(z, x, y)$
Coapact，isn＇t it？Now，the Keading－Eerks $99 e r s$ publish a newsletter called＂A Eyte of Infa＂，which is hardly more than a byte long，but the August byte was a mouthful！Check this－
1月鹃
11月 $2=1 / 2$ 玉2 ：：CALL JOYST 12. $x, y)$
And this！Elegant！
$l=l=11:$ ： $\operatorname{CALL} \operatorname{JOYST}(z+2, X, y)$
Here 15 another of those programs that write a progran．This one will read a screen of graphics andor text and convert it into a FULNable progran of DISPLAY AT statenents whicn will recreate the sereen．

First，we need a file of the hex codes of all the normal characters，to check against to see if any have been redefined．Kather than key in all 95 of the 1b－digit codes，let＇s write
of then－
11 OPEN \＃1：＂DSK1．HEXCODES＂，
 FOR D＝32 TD 124 STEP $8:$ ：FO R CH＝D TO D＋7：：CALL CHARPA T（CH，CHS）

14CHR $\$ 1$ 16）KCH ：：NEXT CH
139 PRINT 11：CHFS（INT（LN／256
1）\＆CHRs（LN－256ま1NT（LN／256））
CHRS（147）dSE6S（DS，2，LEN（DS））

：NEXT D
148 PRINT \＃1：CHES（255）4CHRS
255）：CLDSE 11 ：：END
RUN that to create a merbe format program of DATA statements．Now，key in the GRAFWRITER progran－
zhai gus grafuriter
31 III OPEN \＃1：${ }^{\text {DISKK．PG6＂，OUTP }}$ UT，IISFLAY，VARIAELE 163
31 Ha2 RESTORE 3日M99：：L＝3日g
明：：GOSUE 31018
31913 FOR CH＝32 TO $127:$ ： CA
LL CHAFFAT（CH，CH 3 ）：：READ A
 E gogub 31 1919：：GOSUE 31018 31984 NEXT CH
31 H85 FOR CH＝128 T0 143 ：：C ALL CHARFAT（CH，CHS）：IF CH ＝RPTs（ ${ }^{[8]}$＂，16）THEN 31986 ELSE 60SUB 31919 ：：60SUE 31818 31 月H6 NEXT CH
31 明 PRINT \＃：LS\＆CHF\＄（157）\＆

k 5 （1）：： g 0 SUB 31918
31 fide FOR $\mathrm{k}=1$ TD 24

4日）\＆CHF\＄（183）\＆CHEs（28日）\＆CHFs
（LEN（STES（R））\＆STRs（R）iCHEs（ 179）

gCHAR（f，C，G）：：CALL HCHAR（R．
C．42）：：IF $F=1$ AND $6=32$ THEN 31913
$31911 \mathrm{~F}=1$ ：：IF FF＝1 THEN 31 112 ELSE CC＝C－2 ：：FF＝1
31112 A $\$=A 58 C H E(6)$
31013 NEXT C：：IF CC＝A THEN CC＝1：：A $\$=$＂＂
31114 PFINT \＃1：Ms\＆CHRs（2HH） 4
CHES（LEN（GTR（CCC）IM\＆STR（CC）
\＆CHF\＄ 1882 ）\＆CHR $\$ 181$ ）\＆CHR\＄（19

$31015 \mathrm{~L}=\mathrm{L}+1 \mathrm{If}:$ ： $\mathrm{F}, \mathrm{FF}, \mathrm{CC}=\mathrm{B}:$ ：

NEXT R
31816 PRINT \＃1：LS\＆CHEs（134）\＆

CHF\＄（291）\＆L LsCHF\＄（1）：：GOSUB 31118
31917 PFINT \＃1：CHRs（255）\＆CHR （255）：：CLOSE 11 ：：SUBEXIT

 ）：L＝L＋11 ：：RETURN
31019 PRINT I：LStCHRS（157）\＆ CHF\＄（20）\＆CHRs（4）\＆＂CHAR＂\＆CHR （183）\＆CHF（291）\＆CHR\＄（LEN（ST
 CHR\＄（199）\＆CH $\$$（16）\＆CH\＆CHR\＄（ 182）\＆CHFS（d）：：RETURN 3192 SUEEND

Next，Enter MERGE DSK1． HEXCDOES to serge in those DATA statements．Then save the progras by save dSk1．GRAFMRITER，MEREE

Now，load any progran which has a screen you would like to copy．Kun the progra to the point where the screen display 15 ready， then break it with FCTN 4. Put in a teaporary line going to itself，such as 1981607019191 ，and run the program agam to be sure you found the right place．Then replace that temporary line with CALL GRAFWRITER：：STOp

Fut in the disk containing the Grafuriter progran and enter MER6E DSKI．6EAFWRITER．Then RUN the progran．When it stops， type NEW，then MER6E DSK1．PG and then RuN！
Now for a Tigercub chall－ enge that I can＇t answer！ Can one of you assenbly programars tell ae how to FEEK out of Extended Fasic for screen color and charac－ ter set colors， 50 I can reproduce the in that progra？

And，thanks to Jerry blaze in the Southern Nevada UG newsletter，by way of the Tidenater newsletter－you don＇t need sIle with disflay AT－just a senicolon！
 ＂，281：：DISPLAY AT（12，1）：＂SE E？＇；

MEMORY FULL！－Ji Feterson

