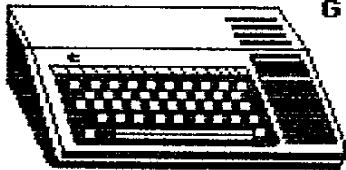


GUILFORD 99'ERS NEWSLETTER



SUPPORTING THE TEXAS INSTRUMENTS TI-99/4A COMPUTER



GUILFORD 99'ERS UG
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TO:

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The Guilford 99'er Users' Group Newsletter is free to dues paying members (One copy per family, please). Dues are \$12.00 per family, per year. Send check to: LF Jones, 3202 Canterbury Dr., Greensboro, NC 27408. The Software Library is for dues paying members only. (George von Seth, Ed.: 292-2035)
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OUR NEXT MEETING

DATE: July 3, 1990 Time: 7:30 PM. Place: Glenwood Recreation Center, 2010 S. Chapman Street.

Program for this meeting will be a demonstration of the newly released version of TI-BASE. This version is 3.0 and is another step in the evolution of the "perfect" data base for our little orphan. Our resident expert Tony Kleen will present the demo.

MINUTES

The June meeting of the Guilford 99er Users' Group was held on Tuesday the 5th at the Glenwood Recreation Center on Chapman Street in Greensboro, N.C.

There were 6 members present.

The meeting room was being used by the voter personnel so we met in an alternate room. President Carmany called the meeting to order at 7:54 P.M. as it was evident no more members would arrive.

OLD BUSINESS:

1. Bill says the club drive that was to be a second drive for the club is now "eating" disks. He made a motion that the club scrap the drive as it seems to be beyond repair.
2. Tony says he may have an extra Shugate drive that the club can use and he would check it out and let us know at the next meeting.
3. Tony advised that only the DSR was lost on his Rave ramdisk and there was no electrical damage done. The accident happened when Tony plugged his card into the club's P-Box last May and it shorted against the P-Box.
4. Bob mentioned that there was an excellent article on the 3-slot P-Box in the Hunter Valley newsletter a few years back if anyone was interested in a smaller box.

NEW BUSINESS:

1. The Secretary read letters from Lynn Gardner of the PUG and also Paul Fischer from Austria. Lynn was nice enough to inform us that the BBS number that I had given earlier has been changed. The new number is (412) 341-4820. Thanks Lynn!
2. The members elected to answer the letter from Austria and to send Paul the programs he wished. We await his reply.
3. The auction was held as planned. The MG book and disk was purchased by Tony Kleen and the two TI keyboards were taken by Bill Woodruff.

The program was given by Bob and included ways to change drive numbers in a program by using a DV/80 file. Bob showed the old way by having to execute each line number and changing the drive number compared to the much faster DV/80 way. A good demo Bob and thanks.

Tony agreed to have the program in July and will pertain to his TI-Base interests.

The meeting was adjourned at 9:00 P.M.

Respectfully submitted
L.F. "Mac" Jones, Sec./Treas.
Guilford 99er Users' Group

CALL PEEK (PRES)

If you have been following the "expanding your TI" stuff in MICROpendium, you will notice that the May issue dealt with RAMdisks. They belonged somewhere in the scheme of things after modems and such. I would have to disagree with that. If I were starting again from scratch, a RAMdisk would be the first purchase after a PE-Box, disk drive, 32K card, and a printer interface. That's right, even before a modem or any of the other "extras". The increase in overall speed and flexibility is astonishing!

RAMdisks are really amazing!! My Quest has opened up new horizons (pun intended) for me. Everything is so much faster and more convenient. Using a program like SPELLCHECK or MULTIPLAN is no longer a marathon affair. But, I still can't overcome the insurmountable drawback that they present --- sheer, raw greed! That's right, if one is good, just think what you could do with two of them! Anyway, by the time you read this, I should have in hand a second Quest for me PE-Box. I even have it on good authority that one will soon be on it's way to George as well.

The software keeps rolling in from Oz. The latest is Tony McGovern's latest version of Funnelweb. Version 4.30 is another upgrade of this fine program. I did manage to find one bug in the program but only through abusing it as much as I could. In normal use, you will probably never discover it so I'll keep it a secret for now.

Most of the improvements are in the 80-column version but there are some significant changes in the configuration program as well. For example, you can now choose an immediate load of DISKREVIEW, USER LIST, or the FW file. Your choice will boot at load and be the first thing that you see on the screen. It makes customizing the program more flexible and powerful.

It also now boots a clone of the C2 (E/A side) character set from FW. If you don't like that particular character set, alterations can be made with an appropriate sector editor to the FW file itself. See the article a bit later in the newsletter for the details.

It is another excellent programming effort from Funnelweb Farm!

RAMBLING BYTES

by "Mac"

Since the heat has finally set in for good, there just isn't a whole lot of hacking going on around the Jones household! It seems that there is just so much needing to be done outside that when darkness does finally come, I am just too bushed to "pute".

There is one thing that I had not tried on my TI and that is SD when using FW. I really don't know why I hadn't because it sure beats loading the DM and then having to go back to FW after finding out what was on disk. I don't know how many of you, like I, just never bothered trying SD, but we have been really missing out on a good thing. At the beginning of FW if you just type SD (show directory), you will be asked which drive. Just type in the number of drive you wish to be catalogued and it will be done for you. I really can't say why I was not using this feature, but you can bet I am now. I have Bill to thank for the tip on using it.

Another thing that I hadn't tried was what Bob was showing us the last meeting. That was how to go into a program and change one or more things such as disk drive numbers by using a DV/80 format. Before, I would break into the program with F/4 and then using the F/X, go through the program line by line to change statements that I needed changing. With the DV/80 format, you can let the computer do this for you. It gives you the option of changing one or all of the statements needing changing. So you see, an old dog can learn new tricks after all!!

We got an interesting letter from Austria from Frank Fischer wishing to get programs for the TI and Geneve. We really couldn't tell from his letter just which programs he wanted as he listed quite a few from MICROpendium that we don't know whether he wants or has. He says he has a father in chikago (sic) and would like to get friends over here as the TI'ers are limited there. I do know that they have some very good programmers over that way.

Since the young lady next door has come home from college for the summer and is out in a bathing suitless strap, my keyboard letters seem to be changing places on the keyboard and is ruining my typing skill! I find that I am more human than hacker so I had better go out and see if there isn't something that needs doing in the yard, or garden, or something!! Anyhow, see you at the July meeting and enjoy the good TIaes.

CHARS AND F'WEB

by Bob Carmany

I have never been completely happy with the character set that is loaded when F'WEB is used to assemble source code. I had altered the word processing character set long ago but the other was one of those "I'll get around to it" jobs. Finally,

the introduction of Vn 4.30 forced me to do something about it. This version, it seems, loads a character set very similar to the C2 set loaded by the PROGRAM EDITOR. So, unless I wanted to look at those characters whenever the FW file booted (which really isn't too bad) I had to do something about it. It is a matter of personal taste -- sort of like the inverse video control characters that I added to the word processing character set.

The F'WEB docs said that FW loaded a character set similar to C2. OK, I can handle that!! Step 1 was to look at both character sets and see if the individual characters that I objected to looked the same in both cases. They did! Next, I had to find a way to see what the character looked like and simultaneously what the hexadecimal code for the character was. Wayne Stith's CHARA/FIX program was just the ticket! Step 2 consisted of renaming C2 to CHARA1 and looking at the individual "offending" characters and writing down the 16 character hexadecimal code for each. I reasoned that if the characters in the FW file looked the same, the hex code should be identical as well. Step 3 consisted of altering the chosen characters and writing the new codes under the old ones.

All of the preparations had been made. I had shortened the "hook" on the numbers "2" and "3", altered "5" and "9", and made "D" and "S" a bit more pleasing to my eye at least. Now, it was time for the actual alterations. The character codes, I had reasoned, should be unique within the FW program. I used John Birdwell's DISK UTILITIES and used FIND STRING to find the "old 16 character hex code for the first character --- in my case "2". The character code 3844440810207C00 was indeed unique. I used REPLACE to change it to 3844040810207C00 which shortened the "hook" at the top of the character. <CTRL>-W took me to the "write" mode and a couple presses of <ENTER> wrote the new code directly to the FW file. Each of the chosen characters was changed in turn by the same method.

The final step was to go back and alter the C2 file as well. I decided not to use CHARA/FIX to re-write the C2 file because it created a 9-sector file instead of the more compact 5-sector file used by F'WEB. Either length can be used but I was a bit pressed for disk space on my Quest. With C2 finished, I had my completely customized version of F'WEB 4.30.

HARDWARE MOD

The following download came by-way-of Delphi:

May 8, 1990

Tales of a Power Supply

Ever noticed your PEB gets really hot? Wished for a hard drive mounted in the PEB but know your PEB power supply can't handle it? Tired of your GENEVE LED winking out and your GENEVE and HFDC cards slowly turning brown around the power regulators?

I've been worried about it for quite some time... Tony Lewis advised me a while ago that the PEB power supply wasn't really designed for all of these new cards and drives which are being mounted in them. After losing a power supply (and sending \$50.00 to TI to get a new one) I decided that the way to go was to replace the power supply totally with a new "switching" supply.

TI designed the power supply around the technology of the time. The power supply is a "linear" supply. That means that your PEB has inside a huge power transformer, with simple regulating circuits that provide the power to the bus in the 11 computer.

A switching supply avoids the huge transformer and heat problems by switching the power on and off very quickly (this has caused some interesting problems in offices that contain a large amount of PC based equipment). Switching supplies are very cheap due to their wide applicability to PC's.

One mistake (in terms that it has caused untold grief for board designers of the PEB) is that the TI linear power supply is underpowered and generates too high a voltage for the cards on the PEB bus.

This is what the TI PEB manual says the voltages going to the PEB bus should be out of the power supply:

BROWN - +16V

YELLOW - -16V

GREEN - +8V

BLACK - GROUND

Per the TI design, the cards that you plug into the PEB must drop these voltages to something they can tolerate with their circuits:

+16V drops to +12V

-16V drops to -12V

+8V drops to +5V

This isn't too bad, but the actual voltages I measured coming out of the TI supply were even higher than listed (I measure +20V instead of +16V, etc.). The drop in voltage means the cards must get rid of the excess energy somehow, and that means HEAT.

Also, the power going to the floppy drive(s) is inadequate for two full height drives, or even one 5 1/4" hard drive. I wanted to mount a 5 1/4" drive along side a 1/2 height floppy drive or a complete self-contained machine.

A New Supply

=====

Browsing at the Trenton Computer Fair (in pouring rain) I found a Highlandbrand new power supply for \$50.00. Not a bargain, but I didn't want to trust this project to a used supply or one without a guarantee. The supply I picked up came mounted in a metal case ready to drop into an IBM AT compatible. Because it was mounted in a metal case, it came with a few extra goodies, like a new power connector for the back of the PEB and a low-voltage (and quieter) fan.

The supply I picked is a 200 watt supply, which I decided would have enough for my PEB with full complement of cards.

I started this project on a Sunday evening by opening up my PEB (I have a spare so I wasn't too worried about destroying this PEB) and removing the following from the left hand power section of the PEB:

- a. Power Transformer (remove four nuts)
- b. Terminal Strip (remove two nuts)
- c. Power Connector (unscrew two screws)
- d. Power Supply (remove two screws and unsolder wires to PEB bus)
- e. Fan (remove four nuts)

I kept all of the wiring to the front power switch and to the fuse (new model PEB's seem to have removed the fuse on the rear of the PEB). I carefully cut two wires from the front power switch and soldered the 120VAC power connections to the power plug which goes to the new power supply.

Working on the new power supply, I unscrewed the low voltage fan and mounted it to the back of the PEB (after cleaning everything in the PCU, amazing how dirty it gets after six years) using the four nuts which held the previous fan. I unsoldered the 110/220 VAC switch on the power supply and soldered the wires together (to force 110vac) and taped the wires to prevent a short.

Deciding how to mount the new power supply took much of my time. I finally decided to use the plastic vertical mounting unit from the old TI PEB power supply, and drill a couple of holes and mount the new power supply board to it. The new power supply then mounted vertically in the same manner as the old power supply.

Fortunately the new power supply came with disk drive connectors (four to be exact). I removed one of the disk drive cables (cut it off).

The power supply also comes with connectors which are intended to plug into an IBM PC Compatible motherboard. I also cut these off and removed all of the wires except for the wires which had the voltages:

+12V

-12V

+5V

ground

I then soldered these wires to the bus in the same place as:

+12V went to BROWN

-12V went to YELLOW

+5V went to GREEN

GROUND went to BLACK

(Warning: If you decide to try this yourself, try and make sure that the cables going to the drive connectors are long enough to run behind the cards in the PEB. Mine were a bit short but ere still usable).

Next came the hard drive. I just mounted a hard drive and a floppy drive side by side in the PEB and ran the cables out of the box before putting the whole thing back together.

Card Modifications

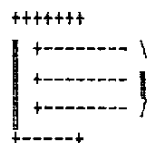
=====

Here is the nasty part of the power supply changeout, every card that you plug into the PEB will require a modification and the card without the modification cannot be plugged into a standard PEB without blowing out the card (time for a nice big caution sticker on the card).

The modification is quite simple, and is because the cards no longer need to do their own power regulation, the power on the bus (+12V, -12V, and +5V) is the right power that the cards need to run. The modification involves jumpering out all power regulators on the boards.

One way to do this is to remove all power regulators and then jumper across the contacts. I choose a simpler way which lets me remove the modification in the future if I so desire (remember also, at this point I wasn't quite sure this was all going to work!).

The power regulators have three prongs connected to a square body, and are usually located near the bottom of the card (usually one or two right next to the LED which sticks out the front):



The middle connection is ground, and should be left alone. I made up small jumpers for the outer two connections, and soldered all of them on the PC-side of the board.

(WARNING: These modifications should be tried at your own risk. The Guilford 99'ers assume no responsibility for the results or lack thereof from this downloaded file. In short, if you screw something up tough luck!!)

```

1 ! ACE : Assembly Object to : 120 CALL KEY(0,KY,ST):: IF S : 240 CALL PEEK(18196,A,8):: NS : 360 FOR T=1 TO 8 :: DISPLAY
Extended Basic CALL LOADS : T=0 THEN 120 ELSE CALL CLEAR : T=0 :: INDEF=A#256+B :: FOR : AT(20,1)BEEP:L$:TAB(6);"Driv
Converter 8/3/1984 : 130 DISPLAY AT(1,1):L$:TAB(5 : T=16376 TO INDEF STEP -8 :: : e error or":TAB(6);"Program
2 ! By : );"Are the Assembly":Object : NL=T :: GOSUB 870 :: NST=NST : name error":L$:L$ :: FOR I=1
Paolo Bagnaresi : s already loaded ?": " Ans : +1 :: STDEF(NST)=DEF$ :: NE : TO 100
Tel.(02)-514.202 : wer: (Y/N) N":L$ : XT T : 365 NEXT I :: CALL HCHAR(20,
Address: : 140 ACCEPT AT(5,17)SIZE(-1)Y : 250 CALL CLEAR :: A=0 :: D$= : 1,32,128):: NEXT T :: RETURN
3 ! Via J.F. Kennedy 17 : ALIDATE("YN")BEEP:RI$ :: IF : "I" : 150
20097 San Donato Milanese : RI$="" THEN 50 ELSE IF RI$="" : 260 DISPLAY AT(1,1):L$:"List : 370 CALL CLEAR
(Milan)- Italy : Y" THEN CALL CLEAR :: GOTO 3 : of DEFS to choose from":fo : 380 ON ERROR 400 :: CALL PEE
10 GOTO 40 :: DIM STDEF$(100 : 70 ELSE N$="I" :: CT$="Y" : r checking purposes":L$ : K(18194,A,B,C,D):: FINELOC=A#
): D$,N$,F$,DEF$,PB$,SC$,RI : 145 GOSUB 900 : 270 FOR T=5 TO 20 STEP 2 :: : 256+B :: NL,INDEF=C#256+D ::
$,CT$,L$,HEX$,H$,DSC$,DECC$, : 150 DISPLAY AT(6,1):L$:"Inse : FOR Z=1 TO 19 STEP 9 :: A=A+ : GOSUB 870 :: IF ASC(DEF$)=2
PROG$ : rt the diskette with the":A : 1 :: DISPLAY AT(T,Z)BEEP:A;S : 55 THEN 400 ELSE INIZLOC=DBM
20 CALL LOAD :: CALL INIT :: ssembly Object and enter":t : TDEF$(A):: IF A>NST THEN 28 : #256+DBL
CALL LINK :: CALL PEEK :: C : he object progr. name": "Na : 0 ELSE NEXT Z :: NEXT T : 390 ON ERROR STOP :: GOTO 43
ALL CHAR :: CALL HCHAR :: CA : me : ";PROG$:L$ : 280 DISPLAY AT(T+1,1):L$ :: : 0
LL KEY : 160 DISPLAY AT(22,1):L$:"era : DISPLAY AT(20,1):L$:"DEF No. : 400 CALL CLEAR :: FOR I=1 TO
30 N,AUT,A,B,C,D,E,F,b,H,I,L : se and press ENTER if you":f : ? (I-";NSI;") ":L$:"Press E : 10 :: DISPLAY AT(10,1)BEEP:
,M,N,CT,NS,LS,DBM,DBL,FINELO : AB(9);"are through" : ENTER when finished":L$ : L$:L$:" The Assembly Progra
C,LOC,INIZLOC,INDEF,NDEF,NLI : 170 ACCEPT AT(11,9)SIZE(-10) : 285 ACCEPT AT(21,21)VALIDATE : ms": " have not been load
NK,NL,NLINE,NST,KY,ST,DEC,PO : BEEP:PROG$ :: IF PROG$="" TH : (DIGIT)SIZE(-2)BEEP:D$ :: IF : ed": :TAD(10);"LOAD THEM!":L
,Z : EN CALL CLEAR :: GOTO 320 : D$(<)" THEN 340 : $:L$
40 CALL CLEAR :: CALL SCREEN : 180 DISPLAY AT(13,1):"Disk D : 290 CALL CLEAR :: DISPLAY AT : 410 FOR T=1 TO 100 :: NEXT T
(16):: FOR T=0 TO 14 :: CALL : rive ? (I-3) ";N$:L$ :: ACCE : (1,1):L$:"Are the programs l : :: CALL HCHAR(12,1,32,160):
COLOR(T,13,16):: NEXT T :: : PT AT(13,20)SIZE(-1)VALIDATE : oaded": "so far OK. ? (Y/N) : NEXT I :: GOSUB 900 :: GOT
!BP- : ("123")BEEP:N$ :: IF N$="" T : Y":L$ :: ACCEPT AT(4,20)VAL : D 150
50 CALL CHAR(128,"00282828" : HEN 130 : IDATE("YN")SIZE(-1)BEEP:SC$ : 420 !Disk-printing routine
131,"000000FF"):: L$=RPT$(CH : 190 ON ERROR 360 :: CALL LDA : 295 IF SC$="Y" THEN 320 : 430 CALL CLEAR :: GOSUB 790
R$(131),28):: H$="0123456789 : D("DSK"&N$&". "&PROG$):: ON E : rtunately in this case": "i : :: IF F$="" OR N$="" THEN 32
ABCDE" :: CALL CLEAR : RROR STOP : t's not possible to": "elim : 767 :: ON ERROR 840 :: GOSUB
60 PB$="By Paolo Bagnaresi : 200 DISPLAY AT(15,1):"Do you : inate just one program": "b : 920 :: OPEN #2:"DSK"&N$&".
Via J.F. Kennedy : want to check the":loaded : ut it's necessary to load" : &F$,VARIABLE 163 :: ON ERROR
17 20097 San Donato : program ? (Y/N) ";CT$:L$ :: : 310 DISPLAY AT(15,1):"all th : STOP :: N=0
Milanese (Milan)- Italy" : ACCEPT AT(16,24)SIZE(-1)VALI : e program(s) all": "over ag :
70 DISPLAY AT(1,1):L$:L$ : T : DATE("YN")BEEP:CT$ : ain.": "DK? (Y) Y":L$ :: AC : 440 !Address of the program
AB(13);"ACE" : :TAB(14);"by": : 205 IF CT$="N" THEN 150 : CEPT AT(19,9)VALIDATE("Y")SI : er
TAB(7);"Paolo Bagnaresi":TAB : 210 DISPLAY AT(18,1):"Does t : ZE(-1)BEEP:SC$ :: CALL INIT : 450 PRINT #2:CHR$(0)&CHR$(1N
(7);"Tel(02)-514.202": "San D : he program come back": "to Ex : 315 CALL CLEAR :: GOTO 150 : &CHR$(131)&CHR$(199)&CHR$(LE
onato Milanese-ITALY":L$ : tended Basic ? (Y/N) Y":L$ : 320 DISPLAY AT(6,1):L$:"Are : N(PB$)&PB$&CHR$(0):: N=1 ::
80 DISPLAY AT(11,1):TAB(10); : : ACCEPT AT(19,27)SIZE(-1)VA : all the programs": "loaded : GOSUB 940
"Assembly":TAB(10);"Converte : LIDATE("YN")BEEP:SC$ : already ? (Y/N) Y":L$ :: ACC :
r to":TAB(10);"Extended":L$ : 220 IF SC$="Y" THEN 240 ELSE : EPT AT(9,24)VALIDATE("YN")SI : 460 !Insert CALL INIT
90 DISPLAY AT(14,1):L$:"ACE : FOR T=1 TO 10 :: DISPLAY AT : ZE(-1)BEEP:SC$ : 470 PRINT #2:CHR$(0)&CHR$(N)
converts the Object": "of an : (21,1)BEEP:"In this case nu : 330 IF SC$="N" OR SC$="" THE : &CHR$(157)&CHR$(200)&CHR$(4)
Assembly Program into": "an E : check": "is possible "L$:L$ : N CALL CLEAR :: GOTO 150 ELS : "&INIT"&CHR$(0):: N=2 :: LOC
xtended Basic Program.": "The : 230 FOR I=1 TO 100 :: NEXT I : E 370 : =INDEF :: GOSUB 940
Assembly Program MUST be" : :: CALL HCHAR(21,1,32,96):: : 340 A=VAL(D$):: IF A>NST THE : 480 ! DEFS name printing
100 DISPLAY AT(19,1):"suitab : NEXT T :: GOTO 150 : N 280 ELSE CALL LINK(STDEF$( : 490 FOR NDEF=INDEF TO 16376
le for Extended Basic": "envi : : A):: GOTO 250 : 350 ! Error handling : STEP 8
ronment and MUST NOT": "conta : : : :
in any AORG.":L$ : : : :
110 DISPLAY AT(24,6)BEEP:"Pr : : : :
ess any key" : : : :

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500 PRINT #2:CHR$(0)&CHR$(N) : 620 PRINT #2:CHR$(0)&CHR$(N) : 745 DISPLAY AT(5,1)BEEP:L$: " : 830 ! Sub file error
&CHR$(157)&CHR$(200)&CHR$(4) : &CHR$(157)&CHR$(200)&CHR$(4) : The Assembly program ";DEF$: : 840 ON ERROR 850 :: CLOSE #2
&"LOAD"&CHR$(183)&CHR$(200)& : &"LOAD"&CHR$(183)&CHR$(200)& : : "has been recorded as a": : 850 RETURN 430
CHR$(LEN(STR$(NDEF)))&STR$(N : CHR$(LEN(STR$(LOC)))&STR$(LO : : "DIS/VAR 163 file. The name :
DEF); : C); : ": : "of this file is ";F$:L$: : 860 ! call peek DEF names
510 FOR LOC=NDEF TO NDEF+6 S : 630 FOR LOC=LOC TO LOC+20 ST : 750 DISPLAY AT(14,1):"You ca : 870 CALL PEEK(NL,E,F,G,H,I,L
TEP 2 : EP 2 : n merge this file": : "and ob : ,DBM,DBL):: DEF%=CHR$(E)&CHR
520 CALL PEEK(LOC,MS,LS):: P : 640 IF LOC>FINELOC THEN 670 : tain an Ext.8.Program":L$:"E : $(F)&CHR$(G)&CHR$(H)&CHR$(I)
RINT #2:CHR$(179)&CHR$(200)& : :: CALL PEEK(LOC,MS,LS) : xecute now in the command mo : &CHR$(L)
CHR$(LEN(STR$(MS)))&STR$(MS) : 645 PRINT #2:CHR$(179)&CHR$( : de:" : 880 PO=POS(DEF$, " ",1):: IF
&CHR$(179)&CHR$(200)&CHR$(LE : 200)&CHR$(LEN(STR$(MS)))&STR : 755 DISPLAY AT(20,1):">NEW": : PO>0 THEN DEF%=SEG$(DEF$,1,P
N(STR$(LS)))&STR$(LS); : $(MS)&CHR$(179)&CHR$(200)&CH : ">MERGE DSK";N$;".";F$ : 0-1):: RETURN ELSE RETURN
530 NEXT LOC : R$(LEN(STR$(LS)))&STR$(LS); : 760 FOR T=1 TO 70 :: DISPLAY :
540 PRINT #2:CHR$(182)&CHR$( : 650 NEXT LOC : AT(23,1)BEEP:">SAVE DSK";N$ : 890 ! Sub CALL INIT once onl
0):: GOSUB 940 :: N=N+1 :: N : 660 PRINT #2:CHR$(182)&CHR$( : ;".";SEG$(F$,1,LEN(F$)-3)&"E : y
EXT NDEF : 0):: GOSUB 940 :: N=N+1 :: I : XT":L$ :: CALL KEY(0,KV,ST): : 900 IF CT=1 THEN RETURN ELSE
: F LOC<=FINELOC THEN 620 ELSE : : IF ST<>0 THEN STOP : CALL INIT :: CT=1 :: RETURN
550 !Print DEF pointer and F : 680 : 770 NEXT T :: END :
FALM : 670 PRINT #2:CHR$(182)&CHR$( : : 910 ! Sub # of necessary pri
560 PRINT #2:CHR$(0)&CHR$(N) : 0):: GOSUB 940 : 780 ! Open file: disk drive : ntings
&CHR$(157)&CHR$(200)&CHR$(4) : 680 N=N+1 : & name selection : 920 NLINE=ABS(INT(-(FINELOC
&"LOAD"&CHR$(183)&CHR$(200)& : : 690 ! CALL LINK printing : 790 DISPLAY AT(1,1):L$:"Name : -9460)/22+(16384-INDEF)/4+3)
CHR$(LEN(STR$(8194)))&STR$(8 : 700 FOR NLINK=INDEF TO 16376 : of the last DEF": "of the A : )):: DISPLAY AT(17,1)BEEP:"T
194); : STEP 8 :: NL=NLINK :: GOSUB : ssembly programs": : "loaded : he necessary Printing": "oper
570 FOR LOC=8194 TO 8196 STE : : 870 : in memory " ;DEF$:L$ : ations with Disk Drive": : "(
P 2 : : 800 F%=DEF$%2"HRG" :: DISPLAY : max 172) will be";NLINE:L$
580 CALL PEEK(LOC,MS,LS):: P : 710 PRINT #2:CHR$(0)&CHR$(N) : AT(8,1):L$:"proposed name f : 930 IF NLINE>172 THEN FOR T=
RINT #2:CHR$(179)&CHR$(200)& : &CHR$(157)&CHR$(200)&CHR$(4) : or the file": : "Max 10 chara : 1 TO 10 :: FOR I=1 TO 90 ::
CHR$(LEN(STR$(MS)))&STR$(MS) : &"LINK"&CHR$(183)&CHR$(199)& : cters ";F$: : L$ :: ACCEPT AT : NEXT I :: CALL HCHAR(23,1,32
&CHR$(179)&CHR$(200)&CHR$(LE : CHR$(LEN(DEF$))&DEF$&CHR$(18 : (11,19)SIZE(-10)BEEP:F$ : ,32):: DISPLAY AT(22,1)BEEP:
N(STR$(LS)))&STR$(LS); : 2)&CHR$(0):: GOSUB 940 : 810 IF F$="" THEN RETURN ELS : L$:"OBJECT SIZE IS TOO LARGE
590 NEXT LOC : 720 N=N+1 :: NEXT NLINK : E IF POS(F$, " ",1)>0 OR POS( : ":L$ :: NEXT T :: STOP ELSE
600 PRINT #2:CHR$(182)&CHR$( : 730 PRINT #2:CHR$(255)&CHR$( : F$,".",1)>0 THEN 800 : RETURN
0):: GOSUB 940 :: N=N+1 :: L : 255):: CLOSE #2 : 820 DISPLAY AT(14,1):L$:"Dis : 940 NLINE=NLINE-1 :: DISPLAY
OC=9460 : 740 CALL CLEAR : k drive? (1-3) ";N$:L$ :: AC : AT(21,1):L$:"# of printings
: : : CEPT AT(15,19)VALIDATE("123" : yet to be": "executed will b
610 ! Main program printing : : )SIZE(-1)BEEP:N$ :: RETURN : e";NLINE:L$ :: RETURN
: : : : :

```