

DECEMBER 1986 ISSUE NO.15

FOR THE RECORD

by Ed Bittner
Recording Secretary

Well ,if you weren't there you missed it ! (Obvious excess verbage). Tuesday the 18th was the November meeting of the West Penn 99 er's. Elections were held and were moving into a new year with double the membership of last. Recently elected Scott Coleman re-enforced his platform commitment by proclaiming that, despite age, we are both organizationally and enthusiastically young!!(tell my arthritic keyboard fingers, Scott).

Since this report needs to be submitted yesterday, I will simply list the newly elected officers and what they are doing for the club.

- President Scott Coleman- Attended TI Faire Chicago, Nov 1 1986. He has for us a video tape for the Nov and Dec.meetings. He also demoed the TI SINGS program, if you haven't seen it come to the Dec meeting.It's neat.
- U.Pres. Mickey Schmitt- Brought and distributed copies of our cassette and disk library catalog with more to come.
- Corres.Sec.Gene Kelly- Continues to stay in the "upper room" but spent some time on contest rules. DON'T FORGET Dec 17 our Dec. meeting date is the last date for submission.
- Rec-Sec Ed Bittner- Distributed what he considered worthy materials reproduced from newsletters from around the country. Also, available is the "borrow a newsletter library. "
- Librarian Clyde Colledge- continues his never ending battle with about 3000K programs (Heeeeeee111111ppppppp!!!!!!).
- Treasure Jan Trayers- Besides peddling her diskettes and memberships and keeping track of \$I/O\$, Jan does coffee tea and hot chocolate, not to mention munchies and pumpkin cake. Thanks Jan.!
- Editor John Willforth- John does nothing except make it all happen. Enough said.

Merrily submitted,
Scoops Bittner



TREASURER'S REPORT FOR NOVEMBER

RECEIVED		PAID	
11/4	\$ 60.00	DISKS	11/7 44.00
	10.00	MEMBERSHIP	72.00
11/17	112.50	MEMBERSHIP	11/17 26.00
	24.00	LIBRARY	
	4.00	PDF SALE	
	9.00	MICROPENDIUM	
	107.50	DISKS & DATA CASES	
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\$ 327.00	TOTAL	142.00	TOTAL
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AS OF NOVEMBER THE BANK BALANCE IS \$390.48
AND THE CASH BALANCE (CASH ON HAND) 50.00

440.48 TOTAL ASSETS

I HAVE ORDERED 800 DISKS FOR THE CLUB. I KNOW I WAS TO ORDER 1000, BUT AFTER SENDING JOHN \$46.20 FOR POSTAGE WITH THIS REPORT, THAT WOULD TAKE OUR TOTAL ASSETS DOWN UNDER \$100, AND I DO NOT FEEL THAT IT WOULD BE A WISE MOVE. SINCE YOU ALL HAVE ELECTED (???) ME TREASURER, I WOULD HOPE THAT MEANS THAT YOU TRUST MY JUDGEMENT -- SO I DECIDED THAT WE SHOULD KEEP A BALANCE OF \$100 (OR AS CLOSE AS POSSIBLE) IN OUR ACCOUNT. SINCE THIS WAS MY DECISION, I WILL ACCEPT THE FLAK GLADLY, KNOWING THAT WE CAN HANDLE MOST EMERGENCIES THAT WOULD COME ALONG. OH YES, THE MONEY THAT WAS DONATED TO THE "GOODIE FUND" IS NOT IN THE REPORT BECAUSE IT WILL KEPT COMPLETELY SEPARATE AND USED FOR JUST GOODIES, PERIOD. TO SATISFY THE CURIOUS, WE COLLECTED \$13 AND SOME ODD CENTS (PROBABLY FROM ED). THIS WILL INSURE SOME SORT OF MUNCHIES FOR THE NEXT MEETING. SEE YOU THERE!

JAN TRAYERS, TREASURER

MY BUTTONS ARE POPPING, AND I KNOW THAT SOME OF YOU WILL SAY THAT HAS TO DO WITH MY WEIGHT, BUT SERIOUSLY, HERE WE ARE IN DECEMBER OF THE FIRST FULL YEAR OF THIS CLUB'S EXISTANCE, AND WE HAVE GROWN FROM ABOUT 23 MEMBERS IN JANUARY, TO OVER 60 AS I WRITE THIS. NUMBERS, ARE NOT THE IMPORTANT THING HERE EITHER, BUT I BELIEVE THAT WE NOW KNOW THAT "WE WILL" SUCCEED!

THE FIRST MONTHS OF EFFORT BACK IN SEPT. THROUGH DEC. 1985, WERE FILLED WITH UNCERTAINTIES, BUT THE RIGHT COMBINATION OF PEOPLE, WITH THE RIGHT MOTIVATIONS, CAME TOGETHER, AND THE "WEST PENN 99'ERS" WAS BORN.

WE NOW MEET "EVERY" THIRD TUESDAY AT THE PRESBYTERIAN CHURCH OF THE COVENANT, AT 4TH AND OAK STREETS, IN DOWNTOWN IRWIN, PENNSYLVANIA, AT 7:00 PM. IF ANYONE COMES UPON THIS NEWSLETTER, AND WOULD LIKE TO ATTEND, YOU ARE WELCOME TO COME AND VISIT WITH US. WE HAVE BOTH ASSOCIATE AND FAMILY TYPES OF MEMBERSHIP. THE FAMILY MEMBERSHIP IS \$15. A YEAR, FROM JAN. 1, OF ANY ONE YEAR, TO DEC. 31, OF THAT YEAR, AND INCLUDES ALL BENIFITS, WHILE THE ASSOCIATE MEMBERSHIP IS FOR THE SAME DURATION, YOU ARE ENTITLED TO RECEIVE ONLY THE NEWSLETTER, AND THE YEARLY MEMBERSHIP IS \$10.

FOR FURTHER INFORMATION CONTACT: SCOTT COLEMAN (412) 271-6283

GETTING THE MOST FROM YOUR CASSETTE SYSTEM
BY MICKEY SCHMITT
NUMBER 8
CLYDE COLLEDGE'S: HIGH-SPEED CASSETTE LOADER
PART II

AS PROMISED... THIS MONTH I AM CONTINUING WITH THE TOPIC OF CLYDE COLLEDGE'S: HIGH-SPEED CASSETTE LOADER. FOR THOSE OF YOU WHO ARE NOT YET FAMILIAR WITH THIS PARTICULAR PROGRAM... LET ME SAY ONCE AGAIN... IF YOU ARE STILL USING A CASSETTE SYSTEM... THIS PROGRAM IS A MUST! IT IS BY FAR ONE OF THE MOST IMPRESSIVE CASSETTE UTILITIES AVAILABLE TO DATE! WHILE LOADING CLYDE'S PROGRAM IS NOT A DIFFICULT PROCESS IN ITSELF... UNDERSTANDING THE PROCEDURE FOR THE VERY FIRST TIME CAN BE A LITTLE CONFUSING. WITH THAT THOUGHT IN MIND I HAVE TRIED TO KEEP THE "LOAD" INSTRUCTIONS AS SIMPLE AS POSSIBLE.

INSTRUCTIONS FOR LOADING CLYDE'S LOADER

1. INSERT THE EXTENDED BASIC MODULE INTO THE COMPUTER
2. SELECT OPTION 2 - EXTENDED BASIC
3. TYPE: OLD CS1
4. THEN: PRESS ENTER
5. FOLLOW THE DIRECTIONS AS THEY APPEAR ON YOUR MONITOR OR TV SCREEN:
 - 5.1 * FEW:ND CASSETTE TAPE CS1
THEN PRESS ENTER
 - 5.2 * PRESS CASSETTE PLAY CS1
THEN PRESS ENTER
 - 5.3 COMPUTER DISPLAYS MESSAGE:
* READING
 - 5.4 COMPUTER DISPLAYS MESSAGE:
* DATA OK
 - 5.5 * PRESS CASSETTE STOP CS1
THEN PRESS ENTER
6. WAIT FOR THE FLASHING CURSOR TO APPEAR IN THE LOWER LEFT-HAND CORNER OF YOUR MONITOR OR TV SCREEN
7. TYPE: RUN
8. THEN: PRESS ENTER
9. THE COMPUTER WILL THEN RETURN BACK TO THE EXTENDED BASIC SCREEN WITH THE MESSAGE: * READY * AND THE CURSOR WILL ONCE AGAIN BE FLASHING IN THE LOWER LEFT-HAND CORNER OF YOUR MONITOR OR TV SCREEN
CLYDE COLLEDGE'S: HIGH-SPEED CASSETTE LOADER IS NOW LOADED

INSTRUCTIONS FOR USING CLYDE'S LOADER

1. AFTER YOU HAVE LOADED CLYDE'S LOADER
TYPE: CALL LINK("OLD")
2. THEN: PRESS ENTER
3. YOU CAN NOW LOAD IN ANY PROGRAM WHICH YOU HAVE ON CASSETTE IN HALF THE AMOUNT OF TIME THAT IT WOULD HAVE TAKEN YOU NORMALLY!
4. JUST FOLLOW THE DIRECTIONS AS THEY APPEAR ON YOUR MONITOR OR TV SCREEN: THAT'S ALL THERE IS TO IT!

CLYDE'S LOADER HAS TWO VERY SPECIAL FEATURES THAT SHOULD NOT GO WITHOUT MENTION. FIRST OF ALL... THE HIGH-SPEED CASSETTE ROUTINES ARE EXACTLY THE SAME AS TEXAS INSTRUMENTS CASSETTE ROUTINES - MAKING THIS PROGRAM VERY USER FRIENDLY. SECONDLY... ONCE THE LOAD PROGRAM HAS BEEN PLACED IN THE 32K MEMORY... IT WILL STAY IN MEMORY... EVEN IF YOU ACCIDENTLY HIT "FUNCTION QUIT". JUST RETYPE "CALL LINK("ON")" AND YOU ARE READY TO GO. YOU CAN'T LOSE THE "LOAD PROGRAM" UNLESS YOU TURN OFF THE CONSOLE!

IF YOU WISH TO PURCHASE THIS PROGRAM PLEASE SEND \$5.00 TO:

WEST PENN 99'ERS
C/O JOHN F. WILLFORTH
R.D. #1 BOX 73A
JEANNETTE, PA. 15644

ATTN: WEST PENN LIBRARIAN

ED. NOTE:

THIS PROGRAM IS THE ENHANCED VERSION OF THE ONE THAT SOME OF YOU U.G.'S HAVE RECEIVED FROM ME TO SAMPLE. CLYDE HAS REFINED THIS PROGRAM EVEN MORE THAN THE COPY YOU HAVE. IF YOU WANT THE "BEST" CASSETTE LOADER PROGRAM IN EXISTANCE, SEND FOR THIS UNIQUE UTILITY.

A local electronics supply house had a sale on dot matrix printers so I grabbed one for "the kids'" TI(or so I told the salesman). In reality I fully intended to keep it for myself, but what self respecting adult would want a slow(saleman's word), not nearly letter quality(him again), cheap(my word) printer? I did. The Smith-Corona D100 can do more tricks than a monkey on a stick, prints at 120cps, has built in tractor feed and friction feed. The sale price was \$188. I thought I would miss the near letter quality feature, but the proportional space feature more than makes up for it and runs full tilt to boot(no double typing and much faster than 20-30 cps).

The interface with the parallel port turned out to be almost easy. The pinout suggested by Jack Mathis(July 86 Newsletter) was correct in most details but I didn't have that to go by. The D100 Busy(pin 11) works best if you pull it up to +5V with a jumper from pin 10 to pin 15 on the PIO port of the RS232 card or the RS232 connector. The D100 manual is a gem. It gives you all of the dope you need to use the thing. The TI manual is the opposite. To give you a head start I have tried many of the features and give examples below for use of the D100 with TI-WRITER.

The Printer is PIO

*ESC 4 selects italics. the keypress sequence is CTRL(red dot)U FCTN(black dot)R CTRL U, 4(that is number four). In the following I will show CTRL as ^ and FCTN as *.*

ESC 5 turns off the italics. The keypress sequence is ^U*R^U5.

ESC W1 selects enlarged letters.

ESC W0 turns off the large letters(need I repeat (^U*R^UW0)?

ESC E selects emphasized mode, while ESC F turns it off. This mode can be used with certain other modes for such things as

TITLES

ESC M selects elite type(12 cpi). I will leave the key sequence to your imagination(see the above examples if your memory erased in the last 100 ms).

ESC P cancels the elite type by setting the normal mode (10cpi).

This is my favorite mode, **PROPORTIONAL MODE**. It is nearer letter quality than most NLQ modes I have seen on Cheap Dot Matrix Printers. It is selected by ESC p1 that is a lower case p and a numeral one.

ESC p0 that is a lower case p and a zero will turn it off

Underlined text is selected by ESC -1, turned off by ESC -0

Condensed mode(16.7cpi) and elongated mode can be set and reset by single control characters. They are entered by keystroke sequences ^U0^U, ^UR^U, ^UN^U, and ^UT^U (go ahead and try them out).

The printer also gives you complete control over the line spacing through five escape sequences. ESC 0 is the 1/8 inch space, ESC 1 is the 7/72 inch space, ESC 2 is the default 1/6 inch space. The two remaining codes let you set n/144 inch(ESC 3,n), and n/72 inch (ESC A,n) linespaces. Both require a bit of thinking to get them right. Remember, each is a three character code. The first is easy, remember old ^U*R^U), the next is on the keyboard(3 or A). the third is scattered all over the place. What you need to do is get the TI-WRITER to generate a code with a value of n.

If n is less than 32 look on page 146 of the quick reference guide in the TI-WRITER manual. IF n is between 31 and 127 look on page 145. The codes you might want above 127 for the n/144 inch mode are not available within TI-WRITER. They would be available within BASIC by a call to CHR\$(n).

The printer will respond to a large variety of form control codes. ESC j,n feeds paper n/144 inch, ESC N,n skips n lines at the bottom of the page, ESC j,n feed in reverse n/144 inch(don't do it if tractor feed or across perfs) ESC B,n,n,n,n,NULL sets vertical tabs, ESC C,n sets the form length in number of lines, ESC D,n,n,n,NULL set horizontal tabs, ESC l,n sets left margin.

As you can see, this is a full function printer. I will not try to go into the graphics capabilities except to say that three densities are offered, 60, 72, and 120 dpi and full pin mapping is available.

Rich (DOC) Sprecher

notes:

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TO LOAD THE CORECOMP DISK MANAGER FROM WITHIN A PROGRAM,  
>100 CALL INIT  
>110 DELETE "LD-CMDS"  
>120 CALL LINK("MGR")
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TO OREDER A **REPLACEMENT** T.I. WRITER MANUAL, CALL 1-800-TI-CARES. YOU CAN PLACE AN ORDER FOR ONE AND THEY WILL SEND YOU ONE FOR "NUTHIN", + \$3.00 TO COVER SHIPPING AND HANDLING.

TO GET A REPLACEMENT "GROM EXT. ASSEMBLY", ORDER PART # 1049693-001, AND BE ADVISED THAT THE UNIT WILL COST \$5.86 + \$2.50 S/H.

TO **STOP** AN ACCIDENTALLY STARTED " **OLD CS1** " , (BEFORE THE CASSETTE STARTS TO ACTUALLY READ THE NEW FILE FROM TAPE), PRESS "**FCIN**" AND "E" KEYS, AND WHILE HOLDING THEM DOWN, PRESS "**ENTER**".

TO MAKE YOUR SPEECH SYNTHESIZER SPEAK A LISTING OF YOUR PROGRAM, FIRST SAVE THE PROGRAM TO SOME DEVICE, IF THE PROGRAM IS EXTENDED BASIC THIS IS REQUIRED, THEN USING THE "**BASIC**" OPTION ON THE TE-2, LOAD THE PROGRAM BACK INTO YOUR COMPUTER, (DON'T RUN IT), IN THE COMMAND MODE, TYPE: LIST"SPEECH".

I WILL TRY TO INCLUDE MORE HELPFUL HINTS NEXT MONTH, AND IF ANY OF YOU WOULD LIKE TO CONTRIBUTE SOMETHING THAT YOU HAVE LEARNED ABOUT YOUR T.I.99, FEEL FREE TO SEND IT TO ME.

MEETING INFORMATION:

AT THE UNITED PRESBYTERIAN CHURCH OF THE COVENANT
4TH AND OAK STREETS
IRWIN, PA
TIME 7:00 PM
DATE DECEMBER 16, 1986

THE LIBRARY MAY BE OPEN AT 6:45 PM , DEPENDING ON VARIABLES THAT MAY AFFECT THE PROGRAM FLOW, WHICH ARE INFLUENCED BY WEATHER AND TRAFFIC.

BY THE WAY THE ARTICLE ON PAGES 4 AND 5 WAS CONTRIBUTED BY ONE OF OUR NEWEST MEMBERS, RICH SPRECHER. I FOUND THE ARTICLE TO BE INFORMATIVE, INTERESTING, AND WELL WRITTEN.

PRINTER COMMANDS

(energizes or turns on)

	10X	5G-10	MX-80	FX-80	KX-P1091	DKIDATA
ITALICS	27 52	27 52	*****	27 52	27 52	*****
ELITE	27 66 2	27 66 2	*****	27 77	27 77	28
CONDENSED	27 15	27 15	27 15	27 15	27 15	29
PICA	27 66 1	27 66 1	*****	*****	27 80	30
EXPANDED	27 87 1	27 87 1	27 14	27 87 1	27 87 1	31
SUPERSCRIFT	27 83 0	27 83 0	*****	27 83 0	27 83 0	27 74
SUBSCRIPT	27 83 1	27 83 1	*****	27 83 1	27 83 1	27 76
NEAR LETTER	*****	27 64 4	*****	27 120 1	27 110	27 49
EMPHASIZED	27 69	27 69	*****	27 69	27 69	27 84
UNDERLINE	27 45 1	27 45 1	*****	27 45 1	27 45 1	27 67
DOUBLE STRIKE	27 71	27 71	27 71	27 71	27 71	27 72
SLASHED ZERO	*****	27 92 1	*****	*****	*****	*****
1/8 LINE SP.	27 48	27 48	27 48	27 48	27 48	27 56
1/6 LINE SP.	27 50	27 50	27 50	27 50	27 50	27 54
7/72 LINE SP.	27 49	27 49	27 49	27 49	27 49	*****
n/72 LINE SP.	27 65 n	27 65 n	27 65 n	27 65 n	*****	*****
n/144 LINE SP.	27 51 n	27 51 n	*****	*****	*****	27 37 57 n
n/216 LINE SP.	*****	*****	*****	27 51 n	*****	*****
TOP MARGIN	27 82 n	27 82 n	*****	*****	*****	*****
BOTTOM MARGIN	27 78 n	27 78 n	27 78 n	27 78 n	*****	*****
LEFT MARGIN	27 77 n	27 77 n	*****	27 108 n	*****	*****
RIGHT MARGIN	27 81 n	27 81 n	*****	27 81 n	*****	*****
COLUMN WIDTH	*****	*****	27 81 n	*****	*****	*****
PAGE LTH. LINES	27 67 n	27 67 n	27 67 n	27 67 n	*****	*****
PAGE LTH. INCHES	27 67 0 n	27 67 0 n	*****	27 67 0 n	*****	*****
PAPER OUT "OFF"	27 56	27 56	27 56	27 56	27 56	*****
PROPORTIONAL	*****	27 112	*****	27 112	27 111	*****
RESET PRINTER	27 64	27 64	*****	27 64	*****	24

THE ABOVE ARTICLE COULD NOT HAVE COME AT A BETTER TIME. I HAVE RECEIVED MANY QUERIES ON HOW TO CONTROL A PARTICULAR PRINTER, WELL WHAT DO I KNOW ABOUT EVERY PRINTER UNDER THE SUN, SO WHEN THIS ARTICLE ARRIVED IN THE " BRAZOS VALLEY 99'ERS ", I WAS ELATED ! SO YOU HAVE ALONG WITH RICH SPRECHER'S ARTICLE QUITE A BIT OF NEW PRINTER INFO TO CHEW ON.

IDENTIFICATION OF 5 1/4" DISKS

DM1000 REVISION RECORD

MODIFIED BY RALPH ROMANS:

VER 3.0 FIXES TO VER 2.4:

- INCORRECT FILE COUNT WHEN GOING FROM 'M' TO 'C'
- FILE COPY WOULD GIVE YOU A BAD COPY IF THE FILE BEING COPIED WAS STORED ON THE MASTER DISK AS A NON CONTIGUOUS FILE AND THE SIZE OF THE FIRST SEGMENT WAS EXACTLY 39 SECTORS WITH ADDITIONAL SECTORS IN ANOTHER SEGMENT ON THE DISK.

VER 3.1 FIXES TO VER 3.0:

- FILE COPY WOULD GIVE YOU A BAD COPY IF THE MASTER FILE WAS A FRAGMENTED FILE OF EXACTLY 39 SECTORS AND THE SAME FILE NAME WAS ON THE COPY DISK.
- WHEN ENTERING A FILE NAME IN VARIOUS MODES, IT WAS POSSIBLE TO MESS IT UP.

UNFIXED BUGS IN VER 3.1 - UNABLE TO DISPLAY SOME DISK/VAR 80 FILES THAT ARE FULL OF CONTROL CHARACTERS. COMPUTER HANGS UP!

VER 3.3-CHANGED DEFAULTS ON SWEEP AND DISK INITIALIZATION

- DISK INITIALIZATION WORKS FOR MYARC AND CORCOM
- READ/WRITE ERRORS GETS CLEARED AFTER 1ST USE ON DISK COPY
- FILE 'MGR1' MAY NOW BE CALLED ANY NAME AND ALL FEATURES OF DM1000 WILL WORK.!! THIS WILL ONLY WORK WITH TI CONTROLLER AND CORCOM CONTROLLER
- THE LOADER FOR MYARC CONTROLLER IS CALLED LOADMY
- DURING DISK INITIALIZATION MENU, YOU CAN USE THE UP ARROW TO GO BACK TO PREVIOUS QUESTION.

VER 3.4- ABLE TO DELETE/MOVE/COPY 1 SECTOR FILES

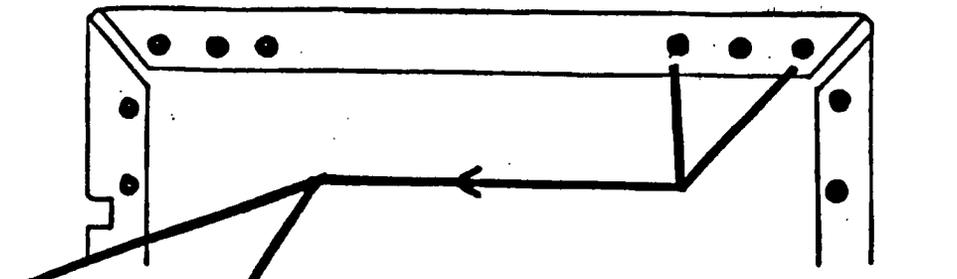
- ADDED 'UP ARROW ACTIVE' NOTICE WHEN UP ARROW WILL TAKE YOU BACK TO PREVIOUS QUESTION.

VER 3.5- ABLE TO TYPE/PRINT DISPLAY VAR 80/FIXED 80 FILES

- WHILE THE FILE LISTING IS ON THE SCREEN BY PRESSING A 'T' FOR TYPE(DISPLAY) FILE TO SCREEN OR 'P' FOR PRINT TO LIST DEVICE WITH OPTIONAL CONTROL CODES SENT TO PRINTER FIRST.
- THE 'P' AND 'T' FOR PRINT OR TYPE ARE ONLY VALID IN THE LEFT MOST FIELD.
- 'EOF' noticed added in lower left corner of screen
- DISPLAY VAR 80/FIXED 80 MENU REMOVED

THE LATEST VERSION OF DISK MANAGER 1000, IS 3.5, AND IT IS TRULY REMARKABLE. THE ABOVE IS A LISTING OF THE VERSION 3.x HISTORY SHOWING THE ADDITIONS, IMPROVEMENTS, AND THE ENHANCEMENTS.

THIS LATEST VERSION HAS TWO SIGNIFICANT ENHANCEMENTS, WHICH INVOLVE THE DISPLAYING AND **PRINTING** OF DV/80 FILES DIRECTLY TO THE PRINTER FROM THE [CMD] PROMPT AS THE CURSER IS SITTING THERE A "t" FOR TYPE (TO DISPLAY), OR A "p" FOR THE PRINTER MAY BE TYPED INSTEAD OF THE NORMAL Copy, Move, OR Delete.



SEAL	COMPANY	COMMENTS
● ● ●	MAXELL	
COMPLETE SEAL	MEMOREX	ALSO ALBINA (BEST Co)
● ⊕	VERBATIM	
● ⊖	NASHUA	6 dots down each side
■ ■	BASF	
●●●●●●●●	ELEPHANT	
—————	3M	2 bars down each side
	WABASH	6 SETS OF 8 SRS. PER SIDE
	FUJI	
■ ■ ■	CONTROL DATA	STORAGE MASTER
—————	SYNCOM	3 bars down each side
● ●	CERTRON	8 dots down each side
● ●	BONUS	
— —		

THIS CHART SHOWS THE NAME OF THE MANUFACTURER WHO MAY HAVE PRODUCED THAT DISKETTE YOU NOW HAVE IN YOUR DISKETTE DRIVE. I WOULD LIKE TO THANK THE N.O.V.A. USERS GROUP OF VANCOUVER, WA. FOR THIS CHART PRINTED IN THEIR NOV. ISSUE.

COPYING A CARTRIDGE TO DISK

The following is for non-modem users and was released to the Spirit of 99 through the courtesy of Bud Wright, SysOp of T.A.B.B.S.

TO DO THIS, MAKE SURE YOU HAVE THE T.I. DISASSEMBLER, A CARTRIDGE WITH ROM CHIPS ONLY (YOU CAN FIND OUT BY OPENING IT UP, THEN LOOK IF IT HAS LARGE CHIPS ONLY. IF IT DOES, IT IS ROM ONLY. IF IT HAS ANY SMALL CHIPS, TOO BAD, YOU HAVE GROM WHICH HASN'T WORKED FOR ME YET SINCE IT IS IN GPL.

- (1) COVER PIN 1 OF THE CARTRIDGE BEING COPIED (IF YOU HAVE A WIDGIT, THIS IS NOT NECESSARY)
- (2) IF YOU HAVE A WIDGIT, PLUG E/A IN SLOT 1, THE CARTRIDGE YOU WANT COPIED IN IN SLOT 2, TI EXTENDED BASIC IN SLOT 3.
- (3) MAKE SURE YOU HAVE A TOTALLY BLANK DISK TO COPY THE CARTRIDGE ON.
- (4) SWITCH OVER TO THE E/A CARTRIDGE (EITHER WITH THE WIDGIT OR JUST INSERT IT), INSERT E/A DISKETTE 'A', PRESS 2 (3 ON 99/4) TO SELECT LOAD AND RUN, FOR FILENAME TYPE 'DSK1.DEBUG' AND PRESS ENTER. WHEN IT IS LOADED, PRESS ENTER AGAIN, AND TYPE 'DEBUG' FOR PROGRAM NAME.
- (5) WHEN THE DEBUGGER PROMPT APPEARS, SWITCH OVER TO SLOT 2 (FOR THE CARTRIDGE BEING COPIED) OR INSERT THE CARTRIDGE BEING COPIED. MAKE SURE THE COMPUTER DOESN'T RESET. IF IT DOES, MAKE SURE PIN 1 IS DEACTIVATED AND START OVER. (WITH THE WIDGIT, DON'T PRESS RESET). NOW MAKE SURE THE DEBUGGER IS STILL OPERATIVE (PRESS ENTER A COUPLE OF TIMES).
- (6) NOW TYPE IN 'M6000 8000' AND PRESS ENTER. THE SCREEN SHOULD START SCROLLING UPWARD AND DISPLAY DIFFERENT KINDS OF NUMBERS. IF ALL YOU GET IS '6000=00 00 00 00 00 00 00 00 *****', ETC. OR ZEROS ONLY, MAKE SURE YOU HAVE A ROM CARTRIDGE ONLY, AND THAT YOU ARE SWITCHED OVER TO THE CARTRIDGE BEING COPIED (OR IS INSERTED). OTHERWISE, YOU SHOULD BE GETTING ALL KINDS OF NUMBERS. YOU WILL PROBABLY SEE THE TITLE OF THE CARTRIDGE IN THE FEW FIRST LINE AT THE RIGHT. NOW LET THE SCREEN DISPLAY THE NUMBERS FOR A WHILE, AND MAKE SURE THAT EVERYTHING IS O.K.
- (7) PRESS QUIT, (FCTN =) TO GO BACK TO THE MAIN TITLE SCREEN.
- (8) SELECT 2 FOR THE E/A AGAIN, 3 FOR LOAD AND RUN, THEN INSERT THE DISKETTE WITH THE T.I. DISASSEMBLER ON IT, AND LOAD IT.
- (9) PRESS ENTER ONCE, THEN TYPE 'START' & ENTER. NOW THE DISASSEMBLER TITLE SCREEN SHOULD APPEAR. NOW SWITCH OVER TO THE CARTRIDGE BEING COPIED OR PLUG IT IN. AGAIN, MAKE SURE IT DOESN'T RESET OR OTHERWISE STOP YOU. FOR STARTING ADDRESS, PRESS '6000'. FOR ENDING ADDRESS, PRESS '6500'. NOW INSERT THE DISKETTE YOU WANT TO COPY IT ON AND TYPE IN 'DSK1.CART1' FOR DEVICE NAME. PRESS ENTER TO START THE DISASSEMBLY PROCESS. THE DISK DRIVE COMES ON, ETC. THE DISASSEMBLED CODE SHOULD APPEAR ON THE SCREEN. FOR EXAMPLE, THIS MIGHT APPEAR:

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'61FC      JNE >6F64          >16F4'
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TO PAUSE DISASSEMBLING, PRESS A KEY TO PAUSE. PRESS IT AGAIN TO CONTINUE. THE PROCESS WILL CONTINUE FOR A WHILE. WHEN THE NUMBER ON THE LEFT='>6500' OR AROUND THAT NUMBER, THE SCREEN WILL STOP SCROLLING. PRESS ENTER TWICE FOR E/A MENU.

- (10) NOW PRESS QUIT. EITHER PLUG IN EXTENDED BASIC OR SWITCH OVER TO IT, AND SELECT EXTENDED BASIC. NOW ENTER THE FOLLOWING PROGRAM:

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-----  
100 CALL CLEAR  
110 INPUT "SOURCE FILE?>DSK1.":A#  
120 INPUT "OBJECT FILE?>DSK1.":B#  
130 OPEN #1:"DSK1."&A#,VARIABLE 80,INPUT  
140 OPEN #2:"DSK1."&B#,VARIABLE 80,OUTPUT  
150 LINPUT #1:C#
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THIS ARTICLE REPRINTED FROM THE NOVEMBER ISSUE OF THE----- SPIRIT OF 99

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160 D*=SEG*(C*,6,27)
170 PRINT #2:D*
180 IF EOF(1)THEN 200
190 GOTO 150
200 PRINT "FINISHED."
210 CLOSE #1 :: CLOSE #2
220 DELETE "DSK1."&A*

```

NOTICE THIS CAN NOT BE DONE IN BASIC, SINCE THE 'LINPUT' STATEMENT IS USED.

(11) RUN THIS PROGRAM. FOR SOURCE FILE, INPUT 'CART1'. FOR OBJECT FILE, INPUT 'CART11'. NOW THE DISK DRIVE WILL COME ON, AND IT WILL TAKE A WHILE BEFORE IT IS FINISHED. WHEN IT IS FINISHED, IT WILL SAY SO. IF YOU RECEIVE AN ERROR, CHECK TO SEE IF YOU HAVE THE RIGHT DISK INSERTED AND THAT THE SOURCE AND OBJECT FILES ARE VALID. IF THAT ISN'T IT, CHECK TO SEE IF YOU HAVE ENOUGH DISK SPACE AVAILABLE. IF YOU DON'T, CHANGE LINE 140 FROM 'DSK1.' TO 'DSK2.' IF YOU HAVE A SECOND DRIVE. OTHER WISE, SORRY! YOU MIGHT WANT TO CHANGE LINE 160 SO THAT IT SAVES VARIABLE LENGTH LINES, THUS SHORTENING THE OUTPUT. WHEN DONE, PRESS QUIT AND INSERT THE E/A MODULE OR SWITCH OVER USING THE WIDGET.

(12) INSERT THE E/A DISKETTE 'A' AND SELECT 1 FOR EDITOR. PRESS 1 FOR LOAD FILE. FOR FILE NAME, USE CART11.

<13> WHEN LOADED, PRESS FCTN-9 FOR THE EDITOR COMMAND LIST (THIS ONE:)
Edit, Tabs, Files, Delete, Insert, Move, Copy, etc. then select R for replace. next type in V,1000/6/A/ AND PRESS ENTER. NOW PRESS 'Y' WHENEVER THE CURSOR IS ON A JMP 6??? OR A LI 6??? OR A SB,CB,B,BLWP ,LI, AND ALL OTHER ONES EXCEPT TWO-DIGIT (FOR EXAMPLE '6?' OR DATA STATEMENTS. WHEN YOU REACH THE LAST ONE, THE EDITOR WILL BE IN EDIT MODE. PRESS FCTN-9 AND TYPE R FOR REPLACE AGAIN. THIS TIME TYPE IN V,1000/7/B/ AND PRESS ENTER. DO THE SAME THING AS THE LAST TIME. WHEN FINISHED, SAVE THIS IN VARIABLE 80 FORMAT ON THE EDITOR COMMAND LIST.

(14) DO STEPS 8-13 AGAIN, CHANGING THE STARTING ADDRESS FOR DISASSEMBLY PROCESS SECOND TIME AROUND TO 6500 AND THE ENDING ADDRESS TO 7000 THE FILE NAME TO CART2, SHRINKED VERSION TO CART22 THE THIRD TIME 7000-7500, CART33, THE FOURTH TIME 7500-8000, CART44. WHEN YOU HAVE DONE THIS, GO ON TO NEXT STEP.

(15) TYPE IN THE FOLLOWING PROGRAM IN EDITOR OF THE E/A.

```

DEF START
ADR6 >A000
START
COPY 'DSK1.CART11'
COPY 'DSK1.CART22'
COPY 'DSK1.CART33'
COPY 'DSK1.CART44'
END

```

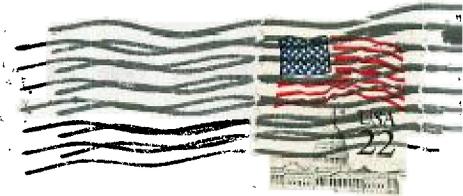
SAVE THIS AS CART55 IN VARIABLE 80 FORMAT NOW LOAD THE ASSEMBLER (OPTION 2) AND FOR SOURCE FILE NAME USE CART55, OBJECT FILE CART66. NOW ASSEMBLE UNDER THE 'R' OPTION. WHEN IT IS FINISHED, JUST LOAD AND RUN IT AND FOR PROGRAM NAME USE START. IF IT DOES NOT LOOK RIGHT, USE THE EDITOR TO LOOK AT THE FIRST AND LAST LINES OF THE DISASSEMBLED CODE TO SEE IF THE NEXT FILE NAME HAS IDENTICAL ONES OR IF ANY LINES ARE LEFT OUT. WHEN DONE WITH THIS, ASSEMBLE AGAIN, CHECK AGAIN UNTIL IT WORKS.

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