

Winnipeg 063
Oct 86



Newsletter

October's Newsletter

The Winnipeg 99/4 Users Group is a non-profit organization created for users by users of Texas Instruments 99/4A Home Computers and compatibles. The content of this publication doesn't necessarily represent the view of this user group.

Next General Meeting - Date : T.B.A. | Contact Paul
Time : T.B.A. | Degner for more
Place: T.B.A. | information.

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EDITORIAL COMMENTS:

Mike Swiridenko has resigned his duties as the newsletter editor. He says his university work and part time job make it impossible to create a newsletter each month. I have agreed to take over as newsletter editor.

MISCELLANEA:

Miscellaneous news and reminders.

One of our members, Gordon Richards, has sold his whole TI system. I'm sorry to hear of his departure from the TI world and I wish him all the best. The public domain library is in need of a home. Those people wishing to expand their software library should get in touch with me. I feel many of you are losing interest because of the lack of software for your computer and I hope to keep you with your computer. MICROpendium, a monthly publication for the TI-99/4A computer, can be had through a subscription. Send \$20.50 (U.S. funds) for 12 issues to MICROpendium, P.O. Box 1343, Round Rock, TX 78680.

PROGRAM OF THE MONTH:

HOW TO PRINT DOUBLE COLUMN TEXT by Tom Freeman

Have you ever wished you could print text using compressed print, thereby getting more on a page, but found reading 132 or 136 columns across too hard? Newspapers use several columns - why not us? What follows is a method of creating double columned text, right and left justified. Equipment required is TI-Writer and XBasic. The underscores and overstrike capabilities of the TI-Writer can be used, as well as any special codes that your printer uses. (See below for special instructions for the latter.) First of all, of course, create your text! If you want to see how many lines there will be in the end, you can use the appropriate margins in the Editor, but this isn't necessary. Next add the following line, before the first line!

```
.LM @IRM 56:FIIAD:IN +SIPL 200
```

Be sure to end the line with a carriage return (Word Wrap Mode). The right margin can be whatever you want, but you should be sure to leave enough room for the margins of your final printout (i.e. two lines, left margin, right margin, and space between should be less than or equal to the maximum column capacity of your printer in condensed mode). Note that the width of the printed line will be one greater than the RM since the LM is 0. PL is a "page length" and should be more than the maximum number of lines that will be put out. Indenting, of course, is optional. Now save your file using BF and go to the Formatter. As the output device DO NOT use your printer, but give the name of a disk file. I usually add a "1" to the name of the original file. When the Formatter is finished, go back to the Editor and load the newly created file. At the top you will see three little LF's representing the first three blank lines the Formatter puts on each page. Unless you particularly want them, delete them with FCTN 3. If you don't, the tops of the first two columns won't line up. Now scan down the file until you find the end of your text. It will be followed by a whole string of LF's. Delete from here to the end (FCTN 9, D <ENTER>), number of first line to be deleted, comma, E <ENTER>. Note how all the right margins are lined up. Now save this file, using the FF function, not BF. You may use the same filename if you wish, since the one you modified is no longer necessary, but to be safe you should probably use a third name. Now you will need to go to XBasic and run the following program.

```
100 CALL CLEAR :: DIM A$(200),C(200) :: CR=CHR$(13) :: LF=CHR$(10) :: FF=CHR$(12) :: TS=CHR$(9) :: LT=CR&TS ::
RT=LT&LT
110 DISPLAY AT(9,1):"INPUT FILE?":"DBK": "PRINTER NAME?":"PIO" :: ACCEPT AT(10,4)SIZE(12)BEEP:FF :: OPEN
@1:"DBK"&FF INPUT :: ACCEPT AT(13,1)SIZE(-2)BEEP:P
120 OPEN @2:P&".CR"
130 DISPLAY AT(6,1):"ERASE ALL: IN THE NEXT 3 INPUTS, BE SURE THAT TWO TIMES WIDTH LEFT MARGIN + SPACE BETWEEN DOES NOT
EXCEED YOUR PRINTER'S CAPACITY"
140 DISPLAY AT(12,1):"HOW MANY SPACES LEFT MARGIN?": "HOW MANY BETWEEN COLUMNS? 6": "WIDTH OF COLUMN? 57": "LINES
PER COLUMN? 33"
150 A="" AT(13,1)SIZE(-2)BEEP:LEFT :: ACCEPT AT(16,1)SIZE(-2)BEEP:BTW :: ACCEPT AT(18,18)SIZE(-2)BEEP:WIDTH :: ACCEPT
AT(20,19)R :: (-2)BEEP:CL
160 LF=LEFT+1 :: RIGHT=LEFT+BTW+WIDTH
170 PRINT @2:CHR$(15);CHR$(27);"D";CHR$(LEFT);CHR$(RIGHT);CHR$(0) "SET CONDENSED PRINT AND TABS
180 IF EOF(1)THEN CLOSE @1 :: CLOSE @2 :: STOP ELSE X=Y=0
190 X=X+1 :: INPUT @1:A$(X):: B=POS(A$(X),LF,1):: IF B THEN A$(X)=SEG$(A$(X),1,B-1):: Y=Y+1 :: C(X)=# ELSE C(X)=1
200 PRINT X;Y
210 IF X1 THEN 230
220 IF Y=CL THEN X1=X
230 IF Y<2*CL AND EOF(1)=# THEN 190
240 IF Y<2*CL THEN CLOSE @1 :: BOTO 260
250 RDRUB 300 :: BOTO 180
260 Z=0 :: FOR Z=1 TO X :: EX=EX+C(Z):: IF Z-EX=INT((Y+1)/2)THEN X1=Z :: BOTO 280
270 X1=Z
280 B=F B=300
290 CLUSE @2 :: STOP
300 X=0 :: Y=1
310 X=X+1 :: PRINT @2:T@A$(X):: IF C(X) THEN PRINT @2:CR :: BOTO 310
320 Y=Y+1 :: PRINT @2:T@A$(Y):: IF C(Y) THEN PRINT @2:LT :: BOTO 320
330 PRINT @2:LF :: IF X<X1 THEN 310 ELSE PRINT @2:FF :: RETURN
```

A brief explanation of the program. 100 sets up an array to hold print lines in memory while the program figures out what to do with them, and sets up variables so I don't have to write so much. 110-150 displays messages and accepts answers with defaults. You can change these to ones of your choosing and thereby easily press enter each time you use the program. 170 sends the code for condensed print to the printer, and sets up the tabs. Check this out with your printer manual, in case the code is different. Now comes the meat of the program. 190 inputs each line and numbers it. B tells the computer whether there is a line feed coming and, if so, eliminates it, and increases Y which is counting the print lines. If there is no line feed then C(X) keeps track of which ones. 200 isn't necessary at all - just keeps your interest on the screen! 220 holds the place for the top of the 2nd column, and 230 makes sure this only happens once. 230 checks if there is more to do, either at all or for this page, and 240 makes sure the columns are both full (if not, 260 performs a recount). The sub-routine at 300 actually does all the printing.



I had done a
Winnipeg Texas
Instruments
User's Group
meeting and now
I'm thinking of
rejoining! How
about you????

A T1 RETROSPECT by Paul Degner

This month we are reverting back to our old ways and are cohabitating in members' basements for general meetings. We apologize for the long delay since our last meeting! It was hard to decide on a date which was convient for most people. For up-to-date information on our meetings please call the 9999BOARD at 204-887-1432. This past month seems to have been extremely busy for our little computer. Mike Heuser of the T199er Workshop Rheinland in Koin, West Germany got in contact with us. It was quite a surprise hearing from our TI friends on the other side of the ocean. They are quite an active group with fifty members dedicating themselves in hardware and software development. We hopefullly should be reporting some new things from them in the near future. The Timeline activity seems to have dropped off a bit. I guess most of them are employed! News from the up and coming Chicago TI faire is starting to appear in various newsletters that the faire is going to be twice as big as last years. Another member, Doug Howe, has bought a Horizon RAMdisk. It seems we will have a slew of them soon. We received version 4 of RDB (RAMdisk Operating System) and it is a big improvement over version 3. We also have another version of RDB about to come in that will knock your socks off! Charles Carlson downloaded a little gem of a program off of a Minnesota BBS that is called Archiver 1.1 (freeware) by Barry Traver of Genial Trivia fame. It is a disk archiving utility that runs from Extended Basic that can PACK or UNPACK files selectively. This utility was reviewed by Terry Atkinson in the last newsletter. A copy of Archiver can be had off of the 9999BOARD.

Briefs:

The CHARA1 and the PEEKS AND POKES articles I promised you will have to wait a while because I didn't have the time to format them for TI Writer. Here instead is a review on the CorComp 512K Card by Terry Atkinson. It was downloaded off of Timeline.

CorComp 512K Readisk: A first-impression report. by Terry Atkinson. 17 Jul 86.

Having received the readisk this past Monday, I have not yet had the opportunity for a comprehensive test of the readisk, hence, this is merely a first-impression report. A more comprehensive report will follow in due course. The version number on the bottom of the unit is 060630. Bear this in mind as it may be important to others at a later date.

The 512K readisk is about 9"(11x3")x2"(h) and fits neatly alongside the console, with other peripherals such as 9900 clock synthesizer and 9900 system chained outward. The preceding system is that which this report is based upon. Moreover, a good friend of mine, Tony McCabe received his readisk just before I received mine, and has the same system less the clock. In comparing notes, we arrived at basically the same conclusions. The 512K actually has 524,288 bytes of memory, and formats like a disk drive, except it has 2048 sectors. (A D5DD disk has 1448 sectors). I have not yet "pushed it to it's limit" to see if all of those sectors are useable, but that is on my list of things-to-do. Recall that for a D5DD disk, sector 8 (AUE=bitmap) is completely filled if all sectors are used. To overcome this, I think CorComp has used AUE and AUI for the bitmap. This poses certain problems for cataloguers. I copied as you might expect. Even Xbasic Cataloguers will "bomb-out" if you try to get a listing of the programs contained in the Readisk. Supplied with the readisk is a resident cataloguer with features such as: Copy, Catalog, Rename, Protection, Format and Delete. There is no provision for printing the catalog to a printer, but DMI000 seems to work well with the readisk for most purposes.

The resident manager is not very impressive. Using the Copy function, three sub-options are presented. I find these features "archaic", somewhat like the old DH 11 module. Option one allows you to specify a single filename to copy, and you can copy from any drive to RD or RD to any drive (except for the second option which scan through all the filenames on the source drive (one-at-a-time) and lets you select Y/N to copy (or not). The disk-copy (3rd option) allows you to copy a whole disk to RD. But here's the hitch. If the source disk is D5DD, then so will be your RD, therefore, only 360 sectors in the RD can be used. So, to utilize all 2048 sectors of the readisk, you must copy files either singly or selectively. If CorComp had been smart, they would have used DMI000 for the resident manager as Horizon had the foresight to do. I'm sure the OUB would not have complained in the least. As I mentioned, DMI000 does work well with RD. The comprehensive report I intend to prepare will give more details.

The resident manager can be called from basic or Xbasic by a simple command "CALL RMBR". Loading is very fast. Additional commands are: DELETE "BD.1" which tells the readisk that it is now to respond to DBK1. at which point the REAL DBK1 is inoperable. It can be configured to any drive from 1 to 5. The default is DBK5. In addition, it can always be accessed as "DBKR", and also by disk-name. In fact, you can do anything with the readisk that can be done with a "real" disk-drive, from opening files to "running" a program from it. Of course, loading of programs is almost instantaneous...which is standard for any readisk I have seen, and is one of the big reasons for buying such a peripheral in the first place (my opinion, naturally).

Another command is DELETE "LOWER", which loads a lower-case character set with true decoders. The charset is not bad, and the command should be used in a program. For those who like to have a different character set in the command mode, type this in Xbasic command mode: DELETE "LOWER":ACCEPT AT(1,1):A...then, when the cursor jumps to the top of the screen, hit FCTN 4. Your charset will be changed. However, if you make an error, it will reset to normal. And that concludes the new commands available. Not an impressive list, to be sure.

The RD is er, backward. It DOES have it's own power supply so that you can turn off your peripherals and console and still have the programs intact in the RD when you re-boot your system. Power up/down must follow a prescribed sequence. The RD had a toggle switch on the front (which simulates a write-protect), and a power indicator light. Power down: RD switch down, off console, off peripherals. Power up: RD switch up, on peripherals, on console. Correct sequence ensures your program will be intact in RD. Incorrect sequence will most definitely blow one or more programs away...and may cause the RD to re-initialize. I have also found that when my console locks-up (for whatever reason) some programs are "wiped" too. A power failure will also wipe programs away, and if it's not backed up, it's not backed up.

More good features include the ability of having two 512K RD's on the same system, bring the total RAM (disk) to over 1 megabyte. For use on TI systems, one RD must be the CARD version and the 32K card MUST be removed. Then, the other RD MUST be a Stand-Alone-Unit (SAU). With the CorComp 9900 system, the RD is IN ADDITION to the 32K of the 9900 system. A second RD can be chained. However, if two RD's are used, one MUST be configured as DBK6 by repositioning a jumper wire either on the SAU or on the card. From then on, it can only be accessed as DBK6. If you purchase a 256K readisk (card or sa) you can upgrade it yourself to 512K by installing the appropriate chips (8K/256K) dynamic ram). However, the card/sau will only be warranted as 256K if this (simple) operation is carried out.

The RD is initially selected at CRU >1000, and can be changed to CRU >1499 to allow for the use of other readisks. This is why most assembly language loaders will not work, as they do not follow the "standard" TI method of DBR links. Later, I will describe some of the loaders which do work, and some that don't.

That's about all the good points of the system. Now, on to the bad points. First and foremost is the "manual". CorComp has NEVER produced a good manual, at least, on the first run. They seem to "push" the hardware on the marketplace while largely neglecting the manual. This is not a different, it is merely six pages printed both sides in two columns, folded and punched (the holes are punched right through the text on a couple of pages). They didn't even bother to staple it together. The above method provides for 24 pages of condensed print, of which 5 sides are blank. Moreover, pages 6 through 12 are essentially reproductions of the TI Xbasic manual regarding file accessing, loading and running programs. Since 1 page is the cover, 1 page is warranty info, 1 page is a disclaimer and 1 page is a table of contents, this leaves only 8 pages of "new" information. However, those 8 pages give you everything to know, even if you need a magnifying glass to read it.

"Other" managers such as DMI000 and the 5D command of TI-WRITER do not return the true number of sectors used/free. In fact, mine shows 192# sectors (48K) total, even though the format showed 2048 sectors initialized. Now 512-48=32K (missing). Remember that the SAU RD, when used with the 9900 system is supposed to give the full 512K IN ADDITION to the 32K of the 9900. Is this a coincidence or have I misread the documents? I will also note at this point that at one part in the manual, it states 1990 sectors are available. Here's a table of those "inconsistancies":

RMBR	DMI000	TI-W (8D)
FREE	1292	1823 1600
USED	628	77 318
TOTAL	1920	1920 1918

I don't know why they come out this way, but I'm sure someone out there will figure it out. I can't. The actual program size count is 625 sectors. 628+3=631, so therefore I can only assume the accurate one is the resident RMBR. In case you are wondering what the +3 is all about...recall I suspected that there were two AUE's (disk bit-map) set aside to accommodate the extra sectors. This supports that theory. Finally, the RD does NOT act as a print-spooler. I was hoping it would have this feature, and was disappointed when I found that it was not the case. At any rate those are my three main peevs. The remaining complaints I have will assume the RD is configured as DBK1.

1. Many "load" will not work if "run" from DBK1. In all fairness though, I would not have expected otherwise. Strangely, DMI000 loader DOES work, although once loaded, the screen APPEARS to have frozen. But, just hit FCTN 4 (TWICE) and the program is there! Strange! Remember, this is using the DMI000 loader!
2. Even though DMI000 "MGR1" is in RD, you cannot make a permanent change to the color scheme and output file attributes. Boot-up will be in the (ugh) white-on-blue default, and if you want them changed, you must do so each session.
3. Standard Xbasic disk-cataloguers (CATB) cannot catalog the readisk. Some investigation reveals that the opening attributes do not fit on the disk. DMI000: INPUT, LPRIVE, INTNAME.
4. Both Tony and I have been having trouble "running" Xbasic programs which have been "loaded" from RD. I suspect that some (or all) of these programs have had "glitches" intru...ed...perhaps from improper flash-up or shut-down of the system.
5. Sometimes, when programs are "saved" to the ram-disk, a file will be over-written. I am not sure about this, but it may have been due to the fact that the programs on the ram-disk were loaded there with DMI000 and not RMBR. It will take a lot more experimentation to find out where the bug creeps in.
6. Tony has had trouble loading a "session" to RD with Fast-Term. I have not yet had that problem. Since we are on the subject of Fast-Term, I hope to be able to find a way to print-spool to RD by finding where the appropriate PAR is and altering it to specify DBK1, as a filename, rather than those available at this time. (See the DEFAULTSET program). Maybe Paul Cariton will put out a change when he is finished his 1001 other projects.
7. While the FUNNELWRITER version 2 loader works well, version 3 does not. I will test version 3.3 when I get it.

I phoned CorComp already, and explained some of the problems I was having. A day later, Tony did the same. Although the party at CorComp didn't alleviate my frustrations, he told Tony that new software would be shipped to Tony and I. Guess there is already a version change. Remember that number 1 gave you at the beginning? Well, that is the initial version. I will give another go at it when I install the new sprm.

Now, to end on a positive note before my conclusion. All TI software such as TI-WRITER, Multiplan, Editor Assembler, etc run extremely well in RD. For example, TI-WRITER loads in less than a second. Saving files is very rapid indeed, as is loading of files. DMI000 loads as quickly as TI-W when loaded through TI-W option 3, as does Fast-Term. Program files and DBR assembly programs which load through the EA options 5 and 3 again load very quickly. Conclusion, I cannot, at this time, recommend the CorComp 512K Memory Plus Readisk, because of the "faults" in the system. Hopefully, the new sprm will change my mind. As everyone knows, I am a staunch supporter of CorComp, and I am not out to "sear" them. But, again, they have left themselves open to criticism by "pushing" a product out on the marketplace before it has been thoroughly tested. Again, both Tony's unit and mine react in a similar manner. Inconsistancies in the manual 244# sectors (format) vs 192# sectors (format), 1990 sectors (in manual) is just one example, and could have been explained further. I will keep everyone posted on new developments as I discover them, or, as they are brought to my attention.

PARTIIB NOTE: This file was saved to DBK2 in 29 seconds. It took only 4.5 seconds to save it to the readisk. Total: 36 Sectors.

The following was taken from May-June 86 issue of TINS.

```

100 : DIRECT SOUND CONTROL
110 : DEMO PROGRAM
120 : BY Tim MacEachern
130 : PO Box 1180
140 : Dartmouth, NS
150 : Canada B2Y 4B8
160 :
170 S=-31744 : ADDRESS OF SOUND CHIP >B400
180 V1=0 : VOICE 1 FLAG
190 V2=32 : VOICE 2 FLAG
200 V3=64 : VOICE 3 FLAG
210 N=96 : NOISE FLAG
220 C=128 : COMMAND FLAG
230 F=0 : FREQUENCY FLAG
240 A=16 : ATTENUATION FLAG
250 WHITE=0 : WHITE NOISE FLAG
260 PERIODIC=4 : PERIODIC NOISE FLAG
270 CALL INIT :: CALL CLEAR
280 : DEMO--START VOICE ONE
290 PRINT "LEFT VOICE 1 IN THREE LOADS"
300 : L L = S,C+V1+A+0 : SET ATTENUATION TO 0
310 : L L = S,C+V1+F+0 : SET BOTTOM FOUR BITS OF COUNTDOWN RATE TO 0
320 : L L = S,C+V1+F+0,0,221 : SET TOP 6 BITS OF COUNTDOWN RATE
330 : L L = S,C+V1+A+0,0,C+V1+F+0,0,221
340 : L L = S,C+V1+A+0,0,C+V1+F+0,0,221
350 : L L = S,C+V1+A+0,0,C+V1+F+0,0,221
360 : L L = S,C+V1+A+0,0,C+V1+F+0,0,221
370 : L L = S,C+V1+A+0,0,C+V1+F+0,0,221
380 : L L = S,C+V1+A+0,0,C+V1+F+0,0,221
390 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
400 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
410 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
420 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
430 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
440 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
450 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
460 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
470 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
480 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
490 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
500 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
510 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
520 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
530 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
540 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
550 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
560 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
570 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
580 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
590 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
600 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
610 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
620 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
630 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
640 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
650 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
660 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
670 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
680 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
690 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
700 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
710 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
720 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
730 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
740 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
750 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
760 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
770 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
780 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
790 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
800 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
810 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
820 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
830 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
840 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
850 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
860 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
870 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
880 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
890 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481
900 : L L = S,C+V2+A+10,0,C+V2+F+0,0,481

```

The following is by Paul Charlton of Fast-Term fame. Here are two neat LOAD INTERRUPT routines. The first changes TEJC module to 1280 baud and second to change the printer name for the Tax Investment Record Keeping module.

```

REB5 885 32
ENTER CLR @LOADWP
LMP1 REB5
:
:
E1 I R0
JNL E1
LIMI 0
LI R)2,>1340
BBD 31
LDCR @CNTRL,8
LDCR @INTVL,8
LDCR @RDR,11
LDCR @XDR,12
BBD 10
E2 BTWP R0
MOV R0,@LOADWP
RTWP
CNTRL BYTE >B3
INTVL BYTE 1000/64
:
:
ADR DATA >1A1
ADR0 >FFFC
LOADWP DATA >1A5
DATA >1A7
END

REB5 885 32
NAME EN BYTE 3 : CHANGE FOR ANOTHER PRINT DEVICE
NAME TEXT 'PIO'
EVEN
ENTER CLR @ADWP
LMP1 REB5
:
:
E1 I R0
JNL E1
LIMI 0
LI R0,>05B9
DR R0,>4000 'FOR WRITE TO VDP
BBD 8
ML B R0,>0C02
SM B R0
MR B R0,>0C02
LI R1,NAMELEN
ML B @R1,R0
SM B R0
MR B @R1,>0C00
:
LOOP1 I R0
JNL LOOP1 'LEN + 1 0 BYTES TO REPEAT
R= R0
MOV R0,@LOADWP
RTWP
ADR0 >FFFC
LOADWP DATA REB5
DATA ENTER
END

```

The first one must be assembled then loaded from the E/A module option 3. Then you remove the E/A module (don't turn the PER off, and you insert the TEJC module. Then you go to terminal mode and press your load interrupt button. The second one must be then loaded for the E/A module option 3. Then you remove the E/A module (don't turn the PER off) and you insert the Tax Investment Record Keeping module. Then you go to the command "PRINTER (Y/N)", answer yes, type RB232 (or "T"), hit enter, and press your load interrupt button.

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In particular, the characterization of specific criteria requires considerable systems analysis and trade-off studies to arrive at the sophisticated hardware. As a resultant implication, initialization of critical subsystem development requires considerable systems analysis and trade-off studies to arrive at the greater flight-worthiness concept. Thus, a large portion of effective information maximizes the probability of project success and minimizes the cost and time required for the anticipated fifth generation equipment. Thus, the incorporation of additional mission constraints adds overriding performance constraints to the total system rational. On the other hand, the characterization of specific criteria maximizes the probability of project success and minimizes the cost and time required for the sophisticated hardware; As a resultant implication, the characterization of specific criteria presents extremely interesting challenges to the greater flight-worthiness concept. Based on integral subsystem considerations, a large portion of effective information adds explicit performance limits to the total system rational.

For example, a large portion of effective information requires considerable systems analysis and trade-off studies to arrive at the greater flight-worthiness concept. Similarly, initialization of critical subsystem development must utilize and be functionally interwoven with the evolution of specifications over a given time period. However, the fully integrated test program necessitates that urgent consideration be applied to the subsystem compatibility testing environment. Similarly, the product configuration baseline effects a significant implementation to the sophisticated hardware. However, any associated supporting element is further compounded, when taking into account the greater flight-worthiness concept. With respect to specific goals, the product configuration baseline adds overriding performance constraints to the sophisticated hardware. In particular, a primary interrelationship between system and/or subsystem technologies presents extremely interesting challenges to any discrete configuration mode.

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