G.A.BOBKER. 29 Chadderton Drive, Unsworth, Bury, Lancs, BL9 8NL (Tel: 061-766 5712)

HEADERLESS-FILES

The following WILL be a bit complex to members not familiar with such things. Do read it all and try out the various examples.

First a description of what Headerless-Files are:
When you Load a program normally you get thick red lines around side of screen, followed immediately by a very short burst of multi-coloured lines & program name appears...this is the HEADER just loaded in....after a one second pause thick red lines again appear, followed immediately by the main body of the program loading in (and appears as multi-coloured lines down side of screen).

The Header is actually 17 Bytes long and tells Spectrum the type of program; Basic, Bytes or Arrays, Length of program and if Basic, the autostart Line number. If Bytes, would be address the machine-code is to start Loading into. The very first part of any program MUST have a Header on it. Later sections could be "Headerless" but as the Spectrum doesn't know how to Load them, a previous section on the tape MUST contain a LOADER specially made to Load in the Headerless program which follows.This Loader has to tell Spectrum address program is to start Loading into, the Length of program & sometimes ends by a Jump into program to RUN it.

The Loader is a machine-code routine which causes a jump in to the LOAD section of the Spectrum ROM itself. There are three methods of doing this:

    a/. By using an actual Bytes program on the tape.
    b/. Putting the codes for the Loader into a REM statement in a
        Basic program.
    c/. By putting the machine-code for the Loader as numbers in a
        DATA statement.

It is essential to be able to recognise such programs in order to get the info required. If Basic prior to the Headerless part is Listed, and a DATA statement found, then numbers can be checked agained those listed below. If in Bytes program, or in a REM, then need to use a Dissassembler program or SEARCH program on TAPE 3.

Assumimg the Loader itself was in location 23296 and it was to Load a Headerless program of 10000 Bytes into location 30000 and then Jump to 30050. On video you'd see:

USING A DISSASSEMBLER	USING TAPE 3 SEARCH	ACTUAL VALUES
005F 111027 LD DE,2710	30004 LD DE,10000 length	17 20 39
005B DD213075 LD IX,7530	30000 LD IX,30000 [START]	221 33 48 117
0062 3EFF LD A, FF	30007 LD A, 255	62 255
0064 37 SCF	30009 SCF	55
0065 CD5605 CALL 0556	30010 CALL 1366	205 86 5
0068 C36275 JR 7562	30013 JUMP 30050 "RUN"	195 74 121

NOTE: Dissassemblers vary & some would give values in decimal in the last column. The "SEARCH" program on TAPE 3 is NOT designed as a full Dissassembler, but is purpose built purely to "Search-out" blocks of codes as above. This is why it can actually print the messages START, etc. (Actual would print THIS IS START).

Loaders may differ slightly from the above, and instead of JUMP at end, may have a RET which means return to Basic.

Note also that such Headerless-Files are usually the actual program and anything before it is simple the Loader & a SCREEN$. This means we ONLY need to put the Headerless-File to Microdrive and RUN it. Now for a few examples:

CYRUS IS CHESS is simplest to do as the Loader is conveniently held on the tape in short Bytes program called "CLoad48"

1/. Load in your Dissassembler, or SEARCH.
2/. Load in the Loader from tape by LOAD "CLoad48" CODE 30000
     (It is usually best to always put into say 30000 each time)
3/. Active your Dissassembler, or SEARCH program.
Let's assume values are displayed in decimal on video:

ON VIDEO	WHAT THEY REALLY MEAN
LD DE,16384	Value in the DE is the CODE LENGTH
SCF	
LD IX,24576	Value in the IX is the CODE START
LD A, 255	
CALL 1366	This is a jump into ROM to do the Loading.
JPNC 0	Jump to 0 is same as NEW. (This guards against a bad load and can be ignored).
JP 24576	This tells us that to RUN this file after Loading it, we must do a RANDOMIZE USR 24576

Note: The LD IX, LD DE, LD A & SCF may be in a different order.

MAJOR SNAG: How do we make the File so we can LOAD/SAVE it?
ANSWER: Either use the program on TAPE 3 called "FILER" or else you need to Load it into Spectrum using its own Loader, suitably modified, then SAVE it with a Header. This is not that difficult, In this example, reload CLoad48 into a "safe" area...the Printer Buffer is ideal, by LOAD "CLoad48" CODE 23296. Obviously need to make sure that program doesn't start running after we've used it to Load in the File. Since we only want the Loader part of this "Loader", we don't want anything after the CALL 1366. This means putting a RET command (RETurn to Basic) after it. As we've put this Loader into 23296 onwards, all we do is: POKE 23309,201. Set you tape to start of the File, enter RANDOMIZE USR 23296 & then press Play on your tape player. When the File has Loaded in Spectrum will return to Basic and give the usual O.K. message. The File is in computer. All we need do now is to simply SAVE it to Microdrive by standard method quoting CODE START & LENGTH; SAVE*"m";1;"CHESSc" CODE 24576,16384 . A simple Loader for this can be: 10 LOAD*"m";1;"CHESSc" CODE 24576: RANDOMIZE USR 24576 Save this to Microdrive by; SAVE*"m";1;"CHESS" LINE 10

PLEASE DO NOT SIMPLY USE THE FIGURES I HAVE QUOTED BUT DO CHECK THEM OUT YOURSELF AS METHOD APPLIES TO MAJORITY OF FILES.

If you have a Loader which has a RET after the CALL 1366 then do check if there is a RANDOMIZE USR xxxxx or a PRINT USR xxxxx in the Basic section. If so, the xxxxx is the address program RUNs from. If there is NO address in the Loader or the Basic, then the File would be one which loads into BELOW 23296 and is of the autostart type. This would also mean that you CANNOT simply use its own Loader but need to relocate the program when loading it. In our example of CHESS, the LD IX,24576 said Load program from the tape into 24576 onwards. If we changed this to LD IX,30000 then the program from the tape would have been loaded into 30000 upwards instead. Obviously we'd have to this time SAVE from this address. Why bother doing this? It is necessary if File was one which Loaded normally too low in memory. (The Basic program used

would then Load this later into the 30000 onwards, and we then
have to use the NEWSFLASH to pull it back. (The FILER on TAPE 3
always relocates anyway).

YES, I ADMIT IT. I keep plugging TAPE 3. Reason for this, & the
reason TAPE 3 is offered at reduced price to members is simply
that it is virtually the ONLY way members not familiar with the
machine-code programs, will be able to put Headerless-Files onto
microdrive. Of course a full Dissassembler would be better and
is more versatile. But these are much more expensive and in most
cases, extremely complicated.

ALTERNATIVE METHOD OF LOADING FILES FROM TAPE.

If you can find out the length of the FILE you can simply make a
"false Header" of required length, then simply Load this Header
then play in the File. Let's assume we want to "pull" a file
from off a tape, and the length is 2000 Bytes and we want to put
the File into location 30000 in the Spectrum. Make a "header" as
follows.
1. Place a Blank tape in tape recorder.
2. Enter SAVE "nowt" CODE 30000,2000   then press Enter key.
3. Set recorder to record, then press Enter key again.
4. STOP TAPE IMMEDIATELY after the "header" has been Saved.
We now have a "false header" on the tape.
Clear Spectrum by NEW. Load the new tape just made by usual:
LOAD "" CODE. Then play in the File from your tape. Spectrum sees
this simply as normal Machine-Code program, albeit that the
Header & main part was on two tapes. Could then save this "File"
to microdrive as a normal Code program.

NOW TO BE PRACTICAL

In the Loader there is a LD A,255. In practise, some awkward so-
&-so could have used ANY value between 0-255. This "CODE" Byte
is the very first Byte of a File and awkward values are used to
fool copiers. (Doesn't fool 007). It does mean that the "False-
Header" method of Loading-in a File will ONLY work if this was a
Code 255.
     Very long Headerless-Files will require special techniques
to transfer them.

This issue is extremely late and does not contain half the stuff
it was intended to. To avoid further delays, more about Files &
superlong programs will appear in next issue.

NEWFLASH AND REMOVER

The program on the right is strictly copyright and is ONLY for members of MICRODRIVE-EXCHANGE. It is strongly recommended that you save it on your microdrive as it makes calulating values for NEWSFLASH dead easy, AND it incorporates the REMOVER program. To ensure correct screen layout, the screen should look precisely as per the Listing on the right.

NEWSFLASH is called "MOVer" and the REMOVER is called "DELete" & this dual program is called "MOVDEL" on the NEW 007MD tape. It does NOT auto run as we require to MERGE it later. Line 9020 is the MOV with values for A,B,C,D,E & F being calculated by line 9000. Line 9010 is the DEL and this deletes/reclaims md map area.

```
9000 INPUT "YOUR START ";Y: LE
     B=INT (Y/256): LET A=Y-B*256:
     INPUT "TRUE START ";T: LET D=IN
     (T/256): LET C=T-D*256: INPUT
     "LENGTH ";L: LET F=INT (L/256):
     LET E=L-F*256: CLS : PRINT Y;TA
     7;"B=";A;TAB 13;"B=";B   T;TAB
     7;"B=";C;TAB 13;"B=";D   L;TAB
     ;"B=";E;TAB 13;"B=";F: PRINT
     LIST 9020: STOP

9010 DATA VAL "33",VAL "240",VA
     "92",VAL "17",VAL "182",VAL "9
     ",VAL "195",VAL "229",VAL "25"
     FOR X=VAL "65000" TO VAL "65008
     : READ Z: POKE X,Z: NEXT X: RAN
     OMIZE USR VAL "65000"

9020 DATA VAL "33",A,B,VAL "17"
     C,D,VAL "1",E,F,VAL "237",VAL "
     76",VAL "201": FOR X=VAL "65009
     TO VAL "65020": READ Z: POKE X
     Z: NEXT X: RANDOMIZE USR VAL "6
     009"
```

USING NEW MOVDEL PROGRAM

After transferring the machine-code sections of your games to md, MERGE in the Basic of the game. If there's a RANDOMIZE or PRINT USR xxxxx in it, put it in line 9999 on its own. Change all the Load "" CODE as usual. MERGE in MOVDEL then enter GO TO 9000. It then asks you for YOUR START, TRUE START & LENGTH of section you want to move (by "NEWSFLASH" method). After you enter these, program will stop with the values neatly tabulated AND with line 9020 LISTed ready for you to EDIT it down and substitute values for its A,B,C,D,E & F. When done, delete line 9000 as it's ONLY purpose was to calculate the values. Save this new Basic for the game. Action now is the Basic Loads in the CODEs, then line 9010 reclaims md map area, then line 9020 Moves the section requiring to be moved, then line 9999 will start the game. If no sections to be be moved, delete line 9020.
DO TRY IT. IT GREATLY INCREASES THE SPEED OF TRANSFERRING GAMES.

CHUKIE-EGG TO MICRODRIVE

Checking the Headerless-File in its Loader (in Basic part) shows that it is TWO Files, with no gaps inbetween. First is TWO Bytes and second is 33300 Bytes. "Start" is by a JP 42000. Could adapt original Loader, but it's easier to use the following:
1. Enter this program;
```
10 RESTORE: DATA 221,33,0,0,17,2,0,55,62,255,205,86,5,
   221,33,20,130,17,180,70,55,62,255,205,86,5,201
20 FOR J=30000 TO 30026: READ A: POKE J,A: NEXT J
30 RANDOMIZE USR 30000
```
2. Set CHUKI tape to start of the FILE(s), press RUN then ENTER then press Play on tape machine.
3. Save to m/drive by;   SAVE*"m";1;"CHUCKIEc" CODE 33300,18100
4. Type in and save this Basic as;   SAVE*"m";1;"CHUKIE" LINE 10
```
10 PAPER 0: INK 0: BORDER 0: CLS: | The Loader discarded the
   LOAD*"m";1;"CHUKIEc" CODE 33300| 2-Byte File but we need
20 POKE 23613,1: POKE 23614,0:    | them or program will not
   RANDOMIZE USR 42000            | work. (These are the POKEs).
```

ADJUSTING MICRODRIVES FOR MAXIMUM K

It is NOT necessary to remove the screw on base of microdrive if you want to open it. Results from adjusting motor drive tension varied from extra 10K max to LESS K if tension too much. ONLY do this adjusting if your cartridges give less than 90K each. A few members reported getting anything upto 112K! BUT, I suggest they should check reliability by SAVEing then VERIFYing upto the max K it gives. For example, if 103K try this program:
```
10 FOR I=1 TO 10            For odd few K change program
20 LET A$=CHR$(I+64)        lines 10 & 30 to be:
30 SAVE*"m";1;A$CODE 0,10240  10 FOR I=11 TO 13
40 VERIFY*"m";1;A$CODE        30 SAVE*"m";1;A$CODE 0,1024
50 NEXT I                    (Note that 1K=1024 Bytes)
```

JET-SET WILLY codes, ATIC-ATTACK map, etc,etc. Such things are appearing regularly in the SPECTRUM USER magazine.

A large backlog of hints/tips and methods of transferring games to microdrive have built-up. A large selection, including the transferring of LORDS OF MIDNIGHT will appear in next issue. Sorry, didn't manage to check-out Ant-Attack in time for MDX5.
****
* WARNING: If buying a printer, check cost of the Interface it *
* requires. Interfaces can set you back between £15 to £90.   *
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TAPE 3

This unique suite of three programs is designed to supplement the 007 SPY tape. Consists

1. STOP......Copies Basic ONLY but removes the autostart from them. Only really useful f
   Basic you cannot normally stop and/or very long Basic programs.

2. SEARCH....This is a pseudo Dissassembler for Searching for the short Machine-Code loa
   used to Load Headerless-Files. Prints on video the Start, Length & the "Run
   location address of such. Essential if you want to Stop/Study such Headerle
   Files, OR if you want to put them to a Microdrive successfully.

3. FILER.....Turns Headerless-Files into normal Bytes programs. USELESS ON ITS OWN. henc
   must use SEARCH program to get the essential info about the 'File'.

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