

NATGUG *NEWS*

Volume 6

Issue 1 July 1984

OFFICIAL JOURNAL OF THE
National TRS-80
& Genie Users
Group.

INFORMATION ON THE GROUP

Membership of the Group is by subscription to the Newsletter, which is published monthly. Membership details are obtainable from the Group Secretary. Membership of the Group is open to anyone with an interest in the TRS-80 range of microcomputers, and compatible systems such as the Video Genie.

Details of the Group accounts and the constitution of the Group are obtainable from the Secretary.

Members requiring assistance with problems related to the TRS-80/Video Genie may call the Secretary. An attempt will be made to put them in touch with a member who can help with the problem.

Workshops are arranged from time to time in various parts of the country.

Sub-groups exist in many areas. A list is provided at the back of the Newsletter from time to time.

The Group maintains two software libraries (Models I and II) which are free to members. Library lists are obtainable from the Secretary.

A membership list is obtainable on disk from the Secretary.

Back numbers of the Newsletter are available.

Please send all contributions for the Newsletter to the Editor.

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Minor notes from the secretary.

Blandford Forum 19th August 1984

PCW show - Hammersmith September 1984

Swindon Workshop November 1984

Lake District 25/26th August '84

Dunoon ?? September '84

Pyrenees July/Aug '85

Brian Pain.

EDITORIAL

My pessimistic comments about the future of NATGUG seem to have stung one or two of you into activity, resulting in at least one very interesting article that would not otherwise have been produced!

My thanks to Richard Marks for preparing a cumulative index going back to the first issue. We are publishing this separately, so that you do not need an index to find the index, if you see what I mean.

As I write this, we are getting ready for the Milton Keynes workshop, which promises to be a very interesting one, as it will be the first real combined IQLUG and NATGUG workshop, with a reasonable number of QLers present. A new concept is my course on the MC68000 processor, which has attracted a lot of interest from both groups, as well as several people who belong to neither group, but wish to learn about this powerful (and surprisingly easy to use) device.

Leon Heller

GUIDELINES FOR CONTRIBUTORS

1. If possible, send material in printed form.
2. Scriptit or Pencil disks/cassettes are acceptable.
3. Ensure your ribbon is in reasonable condition.
4. Printer output should be on A4 paper if possible.
5. If you send in hand-written material, write legibly.
6. Do not fold the sheets when posting them. Use a large envelope and keep them flat.

Leon Heller

LIBRARY INFORMATION

- Model I: Leighton Davies, 105 Caerau Road, Caerau,
 Glamorgan. Tel: (0656) 738337
- Model II: Jim Hutton, 25 High Street, Stroud, Glos.
 Tel: (045 36) 4423

MEMBERS' LETTERS

Congratulations on getting two Newsletters out in three weeks - from a reader who's got no complaints about them or the Group. I can't see that a society with still nearly 500 members is not viable, and I hope it won't fold soon. I couldn't afford another computer, and it would cost me a fortune in hardware & software to get a new system to equal the Performance of my Model III for the things I want to do. It's often much faster in Practice, though slower in theory, than the 16-bit machines we have in the office - and far more flexible.

I was interested to see comments on PROPASCAL in both newsletters. I've been using it for eight months on a DEC Rainbow, and I find I use it less and less. The time taken to get a short program compiled and debugged is far longer than with Basic, and the string handling facilities are poor. You can't set up a string array - you have to fool the compiler into thinking it's handling an array of record type. You can't use bit setting on strings, as in Basic, and the chr and ord functions (roughly equivalent to CHR\$ and ASC in Basic) don't work with dynamic strings. There's no equivalent to the Disk Basic MID\$ function; to replace a substring you have to delete the old substring and then insert the replacement at the correct position, which can be a little tricky. The manual doesn't even explain how to output to the line-printer! The Procedure, which involves setting up a dummy file, is pretty cumbersome; I might be able to help anyone who gets stuck with it.

I can see that the linking facilities would be useful to a Professional Programmer who wanted to create his own library for long and complex Programs. But an amateur needs to create such a library in order to get quite elementary Programs to work. I find I haven't the time.

Has any member tried using BASICODE on the TRS-80? For Model I users it's a bit of a fraud - you can't use it without building your own interface, for which the manual provides a largely illegible circuit diagram, no Parts list, and an address in the Netherlands from which you can order the Printed circuit board if the docks aren't on strike.

The manual doesn't make clear that this applies only to the Model I - although I guessed from the references to expansion interfaces and 40-Pin data buses that that was so, and tried loading the tape on the Model III (you have to use 500 baud).

It turned out that the Model III needs no interface (I suppose the Problem must be something to do with the cassette baud rate). The sample Programs wouldn't work, however, either under Newdos80 or using the Model III Basic with DOS disabled; the translation is supposed to supply the standard Basicode subroutines (lines below 1000) for the TRS-80, but didn't. I wrote my own subroutines from the Protocol in the manual, and most of the Programs now run adequately.

I should be grateful if anyone can supply a listing of the standard subroutines, as mine are pretty inefficient.

C.R.J. Currie 41 Elmar Road,
London N15 3DN.

Your editorial in the June issue of NATGUB News has struck home - more than once I have thought about writing something for the Newsletter and then done nothing about it. To rectify the situation forthwith I enclose the text of my talk about LeScript at the Edinburgh Workshop. I have modified it slightly to suit the Newsletter, and added the result of a comparative assessment I have had the opportunity to make since then.

The general tone of some of your editorials since the QL was announced, and IQLUG formed, has been somewhat anti-Tandy, and one gets the impression that you would not be too surprised or worried if NATGUB folded up. This steady defeatist attitude in the magazine is just the way to precipitate its demise.

The Tandy range is spreading and is now much more business oriented than it was, so, many of our new members are probably first time computer users who are not hobbyists, and are mainly interested in the problems of using software like spreadsheets and other commercial packages. This means that the kind of problems our members have are probably tending to be different. Your experience at workshops, etc., would tell you whether my guess is near or wildly off target, but if I am right, then it may be necessary to ask specific people for specific articles rather than waiting for them to come.

If our membership now has a smaller proportion of pure hobbyists than it used to then we will have more members who will not accept the standard of presentation some articles have. As one of the correspondents in the latest edition of the IQLUG Newsletter put it, when referring to the two issues he had just received, he "read them with interest but some difficulty". I know just how he feels. Sometimes I just skip an article because it is too difficult to read. The one headed "+CODA+" in the June Newsletter is one like that - it is smudged, the type is very small, and the impression is faint. 10 characters to the inch is really the smallest type size that can be photoreduced acceptably. Unless the ribbon is new I would say that copy really should be both emphasised and bold to give a black enough impression.

I certainly would hate to see NATGUB fade away. I have benefitted to the tune of about £200 in discounts because of membership, and the "hot line" through Brian Pain has been a godsend to me on a few occasions, while I, in my turn, have been able to help others through it. I am sure a more positive approach would start the membership curve rising again. After all, all those Model I's and Genies that are being sold are being bought by potential members.

Ian Howard Wright

Rev. J. Wickens , 80 Orchard Road, Sutton, Surrey would like to hear from any EXACTRON users.

I haven't written to you or the Newsletter before though we have spoken on the telephone. It was you who kindly suggested the AMD chip AM7910 when I was interested in constructing a modem some six to nine months ago. I took up your suggestion and designed the modem with it working just about last Christmas - very successful so once again my thanks.

J.B. Moseley

10 Whirlowdale Crescent
Millhouses
Sheffield S7 2NA

(* How about an article on the modem for the newsletter? LFB *)

PROBLEM SECTION

Could I ask you to put a note in the News Letter to see if anybody has a copy of Volume One of the News Letter, issues that I need are 5 and 6; if they would be prepared to lend me those two issues for just a few days so I could read them? (I recently purchased a complete set of back numbers but as those two are out of print they were not available). I have a spare copy of Volume Three issue 5 if anybody wants it.

Also does any member know of or have any experience of the following American simulations programmes: Forest Fire Fighter, Trucker, and Streets of the City. I saw them advertised in the American magazines about two years ago but can't remember where or who from, so I would be grateful for any information from anybody who has any of them or knows anything about them!

PA Roberts,
11 Spring Gardens,
Parkstone,
Poole,
Dorset.

I am currently using a Video Genie and running Stern as a communication program to access Bulletin Boards.

I have been trying to use it to access Prestel on the normal 1200/75 service and not the 300 baud service operating on the London computers. However there are obvious problems with the control codes for graphics and colour change. Has anyone solved this problem with Stern or could suggest an alternative program to enable me to access and subsequently store Prestel frames on disc to print out? No problem with configuring for the different transmit and receive rates.

I should be very grateful for any help!

John Moseley
10 Whirlowdale Crescent
Millhouses
Sheffield S7 2NA.
0142-36631

(* Try Don Bannister on (0232) 668899. LFB *)

BOOTING WITH DRIVE 0 WRITE PROTECTED USING LDOS

I was interested to read Henry Speherd's review of the different DOSs' available for the TRS-80 in the March 1984 issue of NAT8UG. I detected a slight bias towards DOSPLUS, but having never used it I am not in a position to comment on his findings. But having used LDOS extensively I must disagree with his statements as regards booting with drive 0 write protected. It is done in a similar way to DOSPLUS using the MOD1/DCI driver programme supplied with LDOS.

For a two drive system this is how it is done. Execute the following JCL File using MOD1/DCI.

```
system(drive=0,delay=n)
system(drive=1,delay=n)
system(drive=2,driver="mod1")
1
system(drive=2,delay=n)
system(drive=0,wp=y)
system(drive=3,disabl)
```

This will set up the drives and produce a DEVICE readout as follows:

```
:0WP 5" Floppy No 1, Cyls= 40, Sden, Sides=1, Step=40, Dly=.5
:1  5" Floppy No 2, Cyls= 40, Sden, Sides=1, Step=40, Dly=.5
:2  5" Floppy No 1, Cyls= 40, Sden, Sides=1, Step=40, Dly=.5,
```

The problem now is to write the configuration file to drive 0 which is write protected. When a SYSTEM(SYS8EN) command is issued LDOS first loads Sector 2 in BOOT/SYS. It then checks byte 01. If it is C9 then a configuration file does not exist, otherwise it is 00. It then proceeds to write or delete the configuration file as requested and update SCC" SYS, Sec 2, Byte 01. The following patch will force LDOS to do all this on Drive 2.

```
.Patch to SYS7/SYS.RS0LT0FF to force
CONF16/SYS to be written to drive 2.
D06,AB=32
D07,2E=32
D07,7D=32
D07,B7=3A 32 28 49 0D
```

The 32 in each line can be changed to write CONFIG:SYS to any other drive required. You could even have a different configuration file on each of your data disks to be loaded on booting. Of course, in this case, there must be a disk in the designated drive or the system will hang. That problem is easily sorted out by putting a disk in the required drive and pressing Shift/Break.

One other problem is that with Drive 0 being write protected is that any SYSTEM/JCL files will be written to the first non-write protected drive, which will be drive 1. The following patch will force any JCL files to be written to drive 0 via drive 2.

```
.Patch to SYS6/SYS.RS0LT0FF to force
SYSTEM/JCL to be written to drive 2.
D12,B2=3A,32,03,4E,6F,20,66,69,6C,65,20,73,70,65,63,21,20,20,20,20
D12,79=8C
```

Or it could be left as it is and have a JCL file on each of the data disks. The second byte 32 is the one to change for any other drive. To make room for the patch the error message "File Spec Required!" has been changed to "No File Spec!"

One facility that is available, providing type ahead is active, is the ability to configure a DOS Command. There is no mention of this in the manual and I suspect it was never intended. After typing SYSTEM(SYSGEN), while the system is going through its initialisation for creating CONFIG/SYS, a DOS command is typed it will be loaded with the configuration file and executed on boot up similar to an AUTO Command. So, by having CONFIG/SYS and a compiled SYSTEM/JCL file on a data disk, typing SYSTEM(SYSGEN), then DO *, the system can be booted, any parameters set, any filters or drivers loaded and the main program loaded simply by pressing the reset button.

Henry Shepherd makes no mention of any JCL in his article. I know TRSDOS 2.3 and NEWDOS+ never had one. I have not used the NEWDOS 80 or DOSPLUS JCL, assuming that DOSPLUS does have a JCL. It would be interesting to compare them with LDOSs JCL as I have found it gives a quite a bit of flexibility and saves a good deal of typing.

Finally, if you detect a slight bias towards LDOS in this letter, you are probably right.

D S Sutherland
1 CHESHIRE
Stanley Fort
B'con 1

TRS-800 ? ? ?

In view of the pessimism displayed in the last letter concerning the impending demise of the TRS 80 Models 1 & 3 I feel that the enclosed copy of an article that appeared in the July edition of PRACTICAL ELECTRONICS should help to alleviate this pessimism.

Added to this there is the welcome news that Hitachi 256K Drams (48256 16pin) are shortly to become available which will help drag the TRS-80 screaming into the next decade, these rams I am told can be easily fitted into the existing keyboard sockets the same as 64K rams & I think that there is only one more address to decode, the pin being in place of one of the two voltages not required.

The particular Z800 chip that will interest most of us will be the Z8108 as not much surgery will be needed on the existing circuitry.

I have written to Mr Coles via Practical Electronics, asking if he can elaborate on the subject of the 'daughter board' he refers to on the first page of his article, P E have acknowledged my letter saying that they passed it on to Mr Coles & will forward any reply he sends to them.

I have felt that if we take an interest in this development then it may be possible for commercial interests to take it up.

There has been so much hard & software developed that it is completely uneconomical to consider throwing it all away to join the 'larger memory' brigade, there are still things that can be done with a Model 1 that the newer machines have not got round to yet.

The challenge will be to modify existing software to make use of the extra memory.

If anyone is interested in developing any thing along these lines I would like to hear from them so that we don't all invent the same 4th generation 'wheel'.

Details of the Z800 series can be obtained by contacting HITEK who are the ZILOG distributors in the UK, the phone number is 0954 81996.

E.C.Kilpatrick,
3a Gainsborough St,
Sudbury.
SUFFOLK. CO10 6ET.
Phone 0787 79504.

Fitting Instructions.

HI-RES Graphics Kit.

The modification comes in two parts:-

1. A separate, fully tested & assembled, graphics box that plugs into the left hand side of the interface or the keyboard edge connector.

2. An interface printed circuit board, with associated components, that has to be mounted inside the keyboard.

Before attempting the modification, please study the diagrams & instructions carefully. If there are any problems or unclear points please do not hesitate to contact us.

Fitting Instructions.

1. Carefully open the keyboard & position it in a manner that will allow easy access for a systematic approach to the modifications required. If your keyboard is NOT the new style then Z29 will not be in an IC holder, it will need removing & replacing with an 18 pin IC socket. Z46 will also need removing & replacing with a 16 pin IC socket.

A cautionary note. Great care must be exercised when soldering sockets to prevent solder causing shorts between adjacent pins.

2. Two track cuts are necessary as indicated in Figs. 1 & 2.

3. The following IC pins need to be isolated from their current positions. This can be achieved by either desoldering the leg & bending it at right angles to the board, or by using a sharp pair of pointed nose cutters, cut the IC leg just above the board & bend the remains of the leg at right angles to the board.

IC	PIN
Z10	14
Z11	9
Z41	7
Z72	14

4. Insert Figgy-backed 21L02 rams into Z46 socket & attach the wires as shown in Fig 3.

WARNING. It is advisable to check for shorts between IC pins before installing holders.

5. Connections.

Link pins 12 & 13 of IC Z26.

Using an insulated wire connect IC Z72 pin 14 (leg only) to IC Z74 pin 9.

Cover the contacts of the Power switch with insulating tape as in Fig 5.

Place the new printed circuit board behind the power, video & cassette sockets as in Fig 5.

Connect the coloured wires to the positions indicated in Fig 4.

Sleeving should be used over connections to bent out legs.

6. Connect 16 pin jumper lead to socket in Z29 as shown in Fig 5., leaving pins 9 & 10 open circuit.

At this point check all connections (Old ROM versions check for punctured wires, connecting the small ROM board stuck to the back of the main printed circuit board to the main board).

7. Connect power & video & test that machine functions correctly (ensuring there are not any metal objects under the exposed board).

The 20 way cable must be routed out of the rear of the two halves of the keyboard case assembly. (See Fig 4.).

Connection to the external graphics box is by way of the 20 way plug with it's locating peg facing upwards.

Ensure that the plug is firmly pushed in & that the socket's ejector lugs are closed so the connection is positive.

8. Carefully fit the machine back into it's case, power up & run the demonstration program.

BC Kilpatrick,
3a Gainsborough St.,
Sudbury,
Suffolk CO10 6ST.
(0787) 79401

LESCRIPT - A REVIEW

LeScript started off with the unusual name ZORLOF, which sounds more like an adventure game than a word processor, and, not surprisingly, I don't think it sold very well. Then an improved version was produced for the Model III and it was renamed LeScript, and sells for £99.

Two or three months ago the Model 4 version became available in this country. And the big advantage of that, of course, is the 80 column by 24 line screen. I think it was the first of the Model 4 word processors to reach the market, although Superscript is now available from Tandy at £160, and Prosoft (of NEWSOFT fame) has just announced ALLWRITE in separate versions for the Model I, Model III, and Model 4 - but it costs \$250.

When you buy LeScript you get a disc and a manual, and unlike most other programmes I have bought, there is no operating system on the disc, so you have to make a copy of your system disc and purge all the programmes you don't need in order to make room for all the LeScript programmes you want. The minimum you need is 27K for the main programme, and the printer driver

programme and perhaps another 5K for LESCRIPT/KSM which I will refer to later. The rest are demonstration programmes or programmes for converting files from other word processors like SCRIPSIT and NEWSRIPT, or converting a PROFILE III+ data file into a LeScript form letter data file.

These conversion programmes were not all written by Prosoft, and I could not get the NEWSRIPT one to work. That did not matter because there was no problem transferring my Model I NEWSRIPT files (on DOSPLUS) to the Model 4, and altering the printer control codes can be done quite quickly.

To get it running you put the system disc in drive 0 and type in "LESCRIPT". If your Model 4 has the extra 64K of RAM then the RAMDISK is automatically brought in and you have about 90K of memory available for your document. This is the size of the biggest individual document LeScript can deal with as far as creating or editing is concerned, but with its CHAIN PRINTING facility it can print up to a total of 20 files at once, and they do not all need to be on the same disc - you just have to put the right disc in as it reads the file. It would be possible, in theory, to instruct it to print a single document 300,000 words long. This 4736 word article uses 31,182 bytes, and there are still 57,233 bytes available in memory.

Now the surprising thing is that it does not matter whether you are using a model 4 DOS or a Model III DOS, LESCRIPT/CMD works equally well with either, despite an entirely different way of converting keystrokes to letters on the screen. I have put it onto a Model 4 TRDSOS6 system disc and also a Model III LDOS5 system disc, and it works just as well with either of them. Put the Model III disc into a Model III and it has the usual 64 column display, but put the same disc into a Model 4 and it comes up with the 80 column display, and, if the extra 64K of memory is installed it uses that as well.

Once the programme is entered you see 3 STATUS lines at the top of the screen, with the LeScript logo at the right end, and 21 lines for you to enter text. These three lines are always there and the text scrolls up the remaining 21. The top status line has 5 fields. Pressing "CLEAR =" puts the cursor into the first one which is for the name of the document. This can be up to 8 characters plus an extension and a disc drive number. Passwords are not allowed, and, in fact, LeScript will not read a password protected file.

The second field is for the width of the text for display or printing purposes - anything from 5 to 255 characters. It is quite useful to set this at "80" while you are composing a document, so that you can see as much as possible on the screen, then change it to the width you want before printing, or viewing as it will be printed. This field can also be used to indicate certain types of file - BAS means a BASIC programme (saved in ASCII form), ASC means an ASCII file such as a file formed by NEWSRIPT or SCRIPSIT, and EDT and EDR refer to EDTASM files. LeScript can both read and write all these types of files, and it can also read a SCRIPSIT file, but it cannot write one.

The next three fields are for information, and you cannot access them. The first is the word count, the second is the number of lines in the document, and the third is the number of bytes still unused. These three fields are constantly updated as you type. I have not checked the word count, but have found the count of lines to be a bit approximate, partly because it includes the lines with printer control codes which, of course, don't get printed, and you probably don't want them in the count.

The second status line has two fields marked "SH" for SEARCH, and "RP" for REPLACE. If you put any letters or words in this field, then press CLEAR-S the cursor stops at the first occurrence of that group of letters after the cursor position. Pressing CLEAR-S again moves on to the next occurrence. If you are not sure of the spelling you can use the BLANK character (?) as a wild card.

If you want to replace that word or phrase with another you put the replacement field in the "RP" field and when you have located the original word or phrase you press CLEAR-R to replace it. This gives you a selective search and replace, because it allows you to change it or not as you choose. If you press CLEAR-R with the "RP" field blank you delete the word or phrase searched for. To do an automatic SEARCH & REPLACE or SEARCH & DELETE then you use CLEAR-A instead of CLEAR-S.

In LeScript the CLEAR and CONTROL keys both perform the same function. This is very convenient, because they are at opposite ends of the keyboard, so any editing command can be made with one hand. I shall use the word "CLEAR" to mean either.

The third status line serves two purposes. Normally it shows a dot for each column, with the "tens" marked, and two dots for each of the preset tabs - the first one is at 7, and then there is one every 8 columns. If you want you can define your own tab settings, although that is a little fiddly, I believe. The second purpose of this line is to show special messages such as error messages, or comments like "DISK FULL", and so on.

EDITING FUNCTIONS

LeScript has very good editing functions. I used to think that NEWSSCRIPT was very good, but LeScript is much more powerful. There are over 60 different functions, which sounds formidable, but they are really easy to use and most of them are linked to obvious letters of the alphabet. I found, that I very quickly got used to the ones I use regularly, and very seldom need to refer to the manual now. In the normal mode the cursor flickers very rapidly but CLEAR-I toggles the insert mode where the cursor blinks more slowly. Cursor movements are precise and fast.

Scrolling can be done quite rapidly three ways. 1. Text will scroll forward with the DOWN ARROW at the foot of the screen or backwards with the UP ARROW at the top. 2. The SHIFTED ARROWS will scroll with the cursor wherever it happens to be on the screen, which can be very useful when, for instance, making changes to a list of items and you want to see what follows the one you are changing. 2. The CLEAR-UP-ARROW and CLEAR-DOWN-ARROW scroll a page at a time. A useful feature in this is that the last line of the old screen becomes the first line of the new one, giving you continuity.

There is full word wrap around, of course, and if the specified width is greater than 80 the whole screen scrolls sideways as you type. Lines are automatically justified as you type or alter text. CLEAR-T gets you to the top of the document at any time, and CLEAR-E gets you to the end with the cursor on the bottom line (i.e., the screen full of text).

Apart from the cursor movements almost all the functions are called with the CLEAR or CONTROL key and just one other. Very conveniently there are two ways of deleting letters. The letter under the cursor is deleted by CLEAR-RIGHT ARROW, and if held down this continues to delete letters to the right. CLEAR-LEFT ARROW deletes the letter before the one under the cursor, and if held down that continues to delete towards the start of the line. I find that very handy as I do a lot of deleting.

Words and lines can be deleted by a command which will repeat if the keys are left down. CLEAR-W for words and CLEAR-L for lines. I was disappointed that there is not a separate delete paragraph function, but successive lines are deleted so rapidly that I do not miss that now. Whole blocks can be deleted by putting a block marker (CLEAR-B) at the end of the block, moving the cursor to the start of it and pressing CLEAR-*. In this case "once more to delete" appears on the third status line, and you either abort it by hitting any other key, or confirm it by repeating CLEAR-*.

This seeking confirmation before making a major boob is useful, and is provided also when clearing the memory to start a new document, killing a file, and exiting to dos.

Moving blocks around the text is very simple. A block marker is put at each end, the cursor is moved to the new location, and CLEAR-M is pressed. I moved a 7K block from near one end of this document to near the other in just a few seconds. The block markers are not automatically removed. That requires CLEAR-Q. At first I thought this was a weakness, but it is probably done on purpose to let you see that the right block has been moved to the correct place. Separate blocks can be saved to disc under individual names if you want to. Using CLEAR-C instead of CLEAR-M will copy the block to the new location leaving the original part unchanged.

LeScript does not like spaces. It deletes all but one for each word when it writes to file or rejustifies, so a carefully spaced out form collapses to the left unless you take steps to prevent it. CLEAR-ENTER inserts a small bar (¶) to indicate an intended space. LeScript automatically adds a space to every fullstop to give two spaces between sentences, but if you want more you have to put them in. This can be done with a global SEARCH & REPLACE, or just typing in two or three mandatory spaces. I found at first that LeScript was a good bit more tedious than NEWSSCRIPT when laying out forms, but I soon got the hang of it.

One of the features of LeScript is that SUPERSCRIPITS, SUBSCRIPTS, BOLD printing, UNDERLINING, and ITALICS, can all be shown on the screen. CLEAR and a number from 1 to 5 toggles these on or off. Unfortunately it does not provide directly for printing the whole or a large part of a document in BOLD, which I find useful when the ribbon gets tired, or to get a good dark image to photocopy. However this can be done by defining a special printer control (CIB47 - the last four characters are hex for 27 and 71). When any of these are toggled on the text flashes alternately with the indicator - SMALL GRAPHICS BLOCKS for superscripts and subscripts, an ASTERISK for bold, UNDERLINE for underline, obviously, and a SLASH for italics.

It is possible to have the same word or letter shown as bold, italic, underlined, and either subscript or superscript all at the same time! It is quite simple to make individual letters, or even alternate letters print underlined, bold, italic or sub- or superscript - although the printer might get hysterics if there is too much of it. A few of these scattered about the text and it begins to look like a fireworks display! If all this flashing gets too much for you it can be toggled off with CLEAR-SHIFT-DOWN ARROW.

When your text is ready to commit to print or file to disc, or, in fact, at any time you like, it can be viewed as it will be printed by pressing CLEAR-V. It then appears on the screen exactly as it will on paper, with all the print control codes and end of sentence characters, and so on invisible. CLEAR-Z returns you to edit mode where you can alter the width by a few characters, adjust the margins and so on, and then view it again. CLEAR-Z returns you to EDIT mode instantly from any other mode such as printing, viewing, directory, or getting a file (which will stop loading in mid-file), or searching.

When you are ready to print you can either print straight away with CLEAR-P, or file it onto disc first with CLEAR-F. The first time CLEAR-P is pressed LeScript loads the printer driver programme. Thereafter the printer driver remains in memory and it starts printing straight away. There is no need to save your text on disc - it can be printed out and then deleted. It is quite possible to call up a shell for letter or document from file, write it, and print it off, and then call up the shell again for the next one without saving anything because the whole file is always in memory.

Another valuable feature of LeScript is the way that the disc directory can be examined at any time by pressing CLEAR-D. This gives you the directory on drive 0, but pressing "1" brings up the directory on drive 1. Then until you ask for a different drive number CLEAR-D will always give you the last drive asked for. The directory display is excellent. First it shows the number of granules free on the disc, then it lists for each file the exact number of bytes, the granules, and the date when it was last written to file. (The granules, by the way, are about 736 bytes. Pressing the space-bar brings up the next page of the directory. It is an odd thing, but it has to go back to the disc to read the next page of the directory before displaying it. Files can be killed to create space on the disc while in this mode if you want.

CLEAR-Z returns you to edit mode, but if you had wanted to insert another document into the one you were writing, or to append it, you just bring the cursor down to the name of the file and press CLEAR-G. The new document will be inserted wherever the cursor was on the file you were editing. Several files can be inserted one after the other this way. The directory is shown on the left side of the screen only and "PRINT CHAIN" is displayed at the top of the right side. If you want to chain several files together for printing - say something very long, or several standard paragraphs - you bring the cursor opposite each name in turn and press CLEAR-Q, and that name is listed under "PRINT CHAIN". Repeat that for all files to be printed together, changing discs if necessary.

It also does a few other things like semi-automatic hyphenation, renumbering BASIC and EDTASM files, and making the printer pause at chosen places, but the one which I find invaluable is being able to change the case of text without re-typing it. Holding down CLEAR-COMMA and letting the cursor run along the line changes everything to uppercase, while CLEAR-FULL STOP changes everything to lower case.

PRINTING COMMANDS

Now with word processors like NEWSSCRIPT you can customise your system disc so that it knows what kind of printer you have, and whether you like to print one or two copies each time, and pause at the end of each page for feeding the next piece of paper in, or print the next page without stopping because you use continuous stationery, etc. Each time you enter NEWSSCRIPT it automatically gets everything right, once it has been set up, and it also gives you the chance to change it just before printing if you want to. But with LeScript you have to tell it all this every time. However, this is not nearly as bad as it sounds and, as with so many things in LeScript, there is more than one way of doing it.

I personally have a little file which I call "HEADER", and, after typing in the name of the new document - say "NEWDOC", and entering the width - say "63", I then come down to the first text

line and type in "HEADER", press CONTROL-G to GET it, and that file is loaded. This is it:-

```

|k34
|em,v2,i,t1,y66,e60,m6,
|j1
|'1B5330'11B5408'-081B5331'21B54 off
to print a half use the SHIFT-@ (\) as defined two lines higher
|on

```

The first character on each line is a vertical bar, which means that that line contains one or more printer controls, each separated by commas. The first line is a single code - "k34", and that means that the document is to be printed on an EPSON FX-80 printer in mono-type. "k35" would mean proportional spacing on an FX-80. When I got my copy of LeScript in March it supported at that time, 86 models of printer made by 30 different manufacturers. I believe it now supports about 150. There are altogether 58 different printer code numbers.

My header programme's second line has "em" for emphasised printing, "v2" to get two copies or versions printed at a time, "i" for individual sheets - that is stop printing until the next sheet is loaded, "t1" to print on the top line - if the top of the paper is just showing I find that the print head is just far enough down the sheet. Then there is "y66" which means that the paper is 66 lines long, and "e60" for the text to end on the 60th line - in other words, to leave 6 blank lines at the foot of the sheet. And finally, "m6" means a margin of 6 spaces on the left and right edges of the sheet. LeScript is very versatile in dealing with margins - you can set both margins the same, like that, or, if you are stapling together sheets which are printed on one side of the paper you can have a different size of margin on each side, and, if you are binding something together which is printed on both sides of the paper, then you can have different margin settings on odd numbered pages from those on the even numbered ones.

The next line is "jl" or "justify left" - each line starting in the first column like this. You can have "jr" for justifying on the right side only, or "jb" to justify both sides, as in a printed document like this, or "jc" for "justify centre" - in other words print everything that follows in the centre of the page. Any of these commands can be put anywhere in the document (on a separate line from the text) and they apply from there until the next change.

The next line in my header file is a mixture of characters and hex numbers. The first one you get by pressing SHIFT-0, and the rest are the hexadecimal values for EPSON FX-80 printer control codes to go into superscript, to print "1", to backspace, to come out of superscript mode, to print a minus sign, to backspace, to go into subscript mode, to print a "2", and to come out of subscript mode - in other words, to print $\frac{1}{2}$. That is the definition how to print a half as a vulgar fraction - something I use quite often. Once that has been defined LeScript will print a $\frac{1}{2}$ every time it comes across the character "\ in the text. You can use any one of 54 different keys to define special function characters that way. Then there is a comment to remind me how to get the half in case I forget. Comments are not nearly as neat as in NEWSRIP where you just precede a comment by ".cm". You have to start with "off" to tell the printer to ignore what is coming, then write the comment, then "on" to tell it to resume printing.

The ability to use programmable function characters is really a very powerful thing because it means that if there is anything that your printer can do - anything at all - for which LeScript has not got a direct command, you can get LeScript to do it in the middle of your text - even your own designed graphics graphics.

Well, that's the way I do my printing set-up instructions, but you can also use the KSM, or Key Stroke Multiply, facility. With this you can programme 55 keys so that each one represents a whole phrase, sentence, or even paragraph. You use SHIFT-CLEAR-A-Z SHIFT-CLEAR-1-5, and all the punctuation and other special keys. If you want to include end of line markers - "ENTER", in other words - then you use a ";". So, the whole of my "header" file could be store in the KSM file as a single keystroke (plus SHIFT and CLEAR). They do not say in the manual what the maximum length of each one can be, but the sample one which comes with LeScript contains some which are nearly 500 characters long.

This file, LESCRIPT/KSM, can be created and edited just like any other LeScript document, and if you wish to miss any letters out you just use an end of line marker

There are about 30 separate printing commands covering such things as:-

AUTOMATIC LINE-FEED INSERTION if your printer needs that as well as a carriage R.

The BAUD RATE setting for SERIAL PRINTERS.

CHARACTER DENSITY for PROPORTIONAL SPACING. I understand from a friend that the left & right justified proportional spacing is absolutely accurate to the last dot, which, as a publisher, is one of his top priorities in a word processor. Part of a document can be proportionally spaced if you like, as this paragraph is.

CHARACTER PITCH - that is the number of letters to the inch.

You can instruct the printer to SKIP A SPECIFIED NUMBER OF LINES - like leaving 10 spaces for a sketch - or go to a specified line, like the 20th from the top of the page, or go to line X only if there are less than Y lines left on the page.

There are several HEADER and FOOTER commands for pages, covering where you put titles, page numbers, and so on.

Parts of the text can be INDENTED a chosen number of letters at either or both ends of the line.

Text can be SINGLE or DOUBLE or TRIPLE SPACING or, in fact, anything up to 9 spaces between lines. This can be used in conjunction with special printer control codes to get odd things like 1.5 spaces, and with the SUPPRESS LINE FEED command to get spacing of less than one.

FORM LETTERS

Another very useful facility LeScript provides is the ability to do form letters. That is, standard letters which can be sent out to a lot of different people, each with their own name and address typed in, and the text personalised as required. I use them to tell people how to get to certain locations for meetings - those from the south get one set of instructions, those from the east get another set, while those from the west get a third set. There is no limit to the number of different items you can insert in any document.

You can use this for mailing lists, and you can insert codes in the list of names and addresses so that you can send to only some of the people on your list. I have codes for people who are members, competitors, committee members, and those who receive our Bulletin. So, obviously, some people will have all four codes against their names, and some will have one or two. It is really very versatile.

THE MANUAL

Having been used to the superb manual for NEWSSCRIPT, I found LeScript's one the most disappointing part of it. Yet everything is there, but it is not always easy to find. There is a good introduction followed by a clear account of the STATUS lines. Then the editing functions are dealt with, followed by the printing commands. Everything is adequately described, but it is all in alphabetical order of keystroke - CLEAR-A, then CLEAR-B, then CLEAR-C, and so on instead of grouping associated commands together. But this is a minor gripe because there is a very full list of contents at the front, and a good index of editing and printing commands at the end. There is also a good tutorial on creating form letters, with a sample one to try.

Since the Edinburgh Workshop I have been given a copy of a 100-point checklist for evaluating word-processing programmes found in 'Word Processing Buyer's Guide' by Arthur Naiman and published by McGraw Hill. This shows scores for 14 various word processing programmes and dedicated word processors:-

PROGRAMMES

DEDICATED WORD PROCESSORS

	<u>Marks</u>	<u>Price(\$)</u>		<u>Marks</u>	<u>Price(\$)</u>
Pie-Writer	84½	200	CPT 8100	94½	15,000
Write	82½	400	Dictaphone Dual Dsp	85½	13,500
Wordstar	80	500	A.B.Dick Magna SL	83	14,500
Newscrip	79½	125	Micom 2001	82½	12,000
Mince & Scribble	67½	275	Wangwriter 5503A	74	6,400
Scripsit	61½	400	Wang System 5 Mod 3	70	11,500
Magic Wand	61½	400			
Easywriter	35	175			

Using the questions in the checklist, I gave LeScript 85½ points, and there were quite a few features of LeScript, like form letters, and programmable function characters, which were not in the checklist. Obviously this is not infallible. To start with, the values in the checklist depend on what weight the author decided each feature should have, and everyone is unlikely to agree with his weightings. But it does indicate where in the range LeScript lies, and, for a £100 word-processor, it is remarkably high up the list. The list also shows an interesting comparison between relatively cheap programmes and some very expensive ones.

There are just three things it does not do, which NEWSSCRIPT does, and which I could find useful:-

1. It does not do "hanging indents" like this. That is, every line in this paragraph, after the first, does not automatically indent a specified number of spaces. That is not much of a problem because it is easy, after the text is composed, to run down it putting tabs down the left side, but NEWSSCRIPT saves you the bother.
2. It does not avoid "widows and orphans", or paragraphs which start on the last line of a page, or end on the top line of a new page (or is it the other way round?).
3. It does not do automatic indexing, but I have not so far needed this.

I cannot really sum it up better than the reviewer in the April edition of 80-MICRO edition who said that he did not rush out to buy one once he had reviewed it because he was able to keep the review copy. So he went out and bought a Model 4P to use it on!

I. Howard Wright

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FK10 3ET.

Telephone
A110a (0259) 213515

Floating point accuracy

I was interested enough in Chris Olden's enquiry (in the June NATSUS newsletter) to try his program on my old Genie. Having reproduced the funny results he complains of, I then wrote the following little bit of Level II Basic which calculates the square roots of a series of numbers, each fractionally less than 1 :-

```
90 DEFDBL P-R: DEFENS X-Z
100 P=0.900000000000: Q=P/10: X=P: Y=Q
110 FOR I=1 TO 12
120 R=SQR(P): Z=SQR(X): PRINT USING "E.##### "; P,R,X,Z
130 P=P+Q: Q=Q/10: X=X+Y: Y=Y/10: NEXT
999 END
```

0.900000000000	0.94868338108	0.900000000000	0.948683000000
0.990000000000	0.99498734740	0.990000000000	0.994988000000
0.999000000000	0.99949997663	0.999000000000	0.999500000000
0.999900000000	0.99995005131	0.999900000000	0.999950000000
0.999990000000	0.99999505281	0.999990000000	0.999995000000
0.999999000000	0.99999958277	0.999999000000	1.000000000000
0.999999900000	1.00000011921	1.000000000000	1.000000000000
0.999999990000	1.000000000000	1.000000000000	1.000000000000
0.999999999000	1.000000000000	1.000000000000	1.000000000000
0.999999999900	1.000000000000	1.000000000000	1.000000000000
0.999999999990	1.000000000000	1.000000000000	1.000000000000
1.000000000000	1.000000000000	1.000000000000	1.000000000000

The two left hand columns of results give the fraction and its root as calculated to double length floating point accuracy. The right hand columns do the same with single length floating point. It should be clear from these figures that the accuracy of both methods is limited. Both will eventually give up the struggle - if a number gets close enough to 1, well, lets call it 1! Hence since the root is always marginally larger than its argument, it is the root which is first rounded up to 1.

It is well known, but perhaps not well enough, that it is possible for computer users to suffer from a special form of delusion of grandeur called "delusions of accuracy". Since a computer is able to print results to 16 significant figures as easily as to three or four, it is tempting to believe that such lengthy results are meaningful. Quite often they are not. As the above results show, (look at the double-length root of 0.999999990000), the last few digits can be quite spurious - either because the data supplied is itself insufficiently accurate, or because the numerical method of calculation necessarily employs some approximations, which is evidently the case with Basic's SQR function.

Negative INTEgers

A further trap illustrated in Mr Oldman's program concerns the way that the INT function handles negative numbers. The definition of INT(x) is "the next lowest integer smaller than x". Hence INT(-1.5) is -2, because -2 is smaller than -1.5. In converting a negative value in seconds to minutes and seconds via the INT function, the program will report -90 seconds as -2 minutes +30 seconds, which is arithmetically correct but which catches the user unawares.

Compound conditional statements

Mr Oldman also asks why he cannot combine the conditional statements in his lines 140-160 into a single line. The answer is that he can, but not by concatenating statements using the colon alone. In other words, you cannot write:-

```
140 A$=INKEY$: IF A$="" THEN 140: IF A$="F" THEN 200
```

because everything following the first IF is dependent on that IF. The final statement IF A\$="F"... will never be reached, since if A\$ is null we will GOTO 140, and if it is not we will proceed to the next numbered line.

Once this is understood, it can be exploited to build up very useful compound statements. For example Mr Oldman's lines 140,150,160,170 and 200 can be condensed to one line as follows:-

```
140 A$=INKEY$:  
    IF A$="F" OR A$="f"  
    THEN CLS: PRINT @535,"NO TIME TO LOSE":PRINT:END  
    ELSE IF A$=CHR$(32) THEN GOTO 20  
    ELSE GOTO 140
```

I have inserted a few CTRL's to improve the layout and clarify the meaning. Compound statements of this type can be used to reduce the number of GOTO's in a program, with benefit to running time. The GOTO is a particularly inefficient statement in Level II Basic. Of course, speed is unimportant in the above example, which is merely scanning the keyboard for one signal, but in many other circumstances this trick is valuable.

What about our future?

Whilst I am writing, and since the Editor is getting short of material, I will add my gratuitous views to the great debate. I personally take great pleasure, even after four years, in reading my monthly newsletter. Of course such that it contains is of only academic interest to me - it always was, since I have never added discs to my system and the numerous articles on DOS's etc fail to enthuse me. Still, I think I must have found something of value in every issue.

Nevertheless I recognise that in time our TRS-80's and Genies will pass into the micro's Valhalla. But not yet, at least my Mark 0 Genie won't. Yes, I have joined IQLUG, in order to listen in to the birth pangs of what may be a phenomenal new arrival, but I certainly have not placed an order yet for a QL, and perhaps I never will

I think that what attracted me most to the idea of the QL was the sheer audacity of the machine, at such a price. The impact of the specification was immediate. It seemed sure to sweep the country. Now that the technical audacity has been proved to be nearly matched by the marketing audacity of the launch, second thoughts intrude. Of course, there is still time - perhaps a year or more - in which Sinclair can put matters to rights and begin to swap the market with machines to the original spec. When the early users begin to sing the QL's praises in "Quanta", and a QL Pascal package appears, I may be ready to take the plunge.

Meantime, other new machines come out, and will keep on tempting us. A bunch of literature on a thing called an "Advance 86" popped into my letterbox. What have we here? Another new micro? Designed in Britain; manufactured by Ferranti; marketed by W.H.Smith; IBM-PC compatible. How boring. But it seems the Advance 86a sells at the same price as the QL; comes with more ROM and more RAM; has more keys and more function keys; uses cassette tapes instead of microdrives; and beats the QL for speed on the benchmark tests. The makers, what's more, support an upgrade of the machine to an 86b disc system

I'm glad that I still love my Genie, and have no urgent need to change it. This is not the time to commit oneself to a new home micro unless one has to.

John Gale Hemel Hempstead 0442-53643

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11 July 1984

L A B E L M A K E R

The following submission may be a useful review to those members of the user group whose wives are keen jam makers or fruit bottlers or who find the need or desire to print labels for the other thousand and one reasons!

Some time ago I speculated in a piece of software advertised in the MOLIMERX catalogue and have found it one of the most useful practical programs in my collection. We even use the program to pre-print labels for the milkman requesting 'ONE EXTRA PINT PLEASE'. It only costs £18.40 which I feel is a very reasonable sum considering the range of facilities afforded.

The program provides 16 label formats for the standard 15/16" x 3 1/2" labels. A small supply of these labels plus an even smaller supply of cassette labels are enclosed with the program. The program prints only 1 label wide so if you are using labels 2 wide then I find it best to print down one side then turn the labels around and print on the other side.

The master diskette comes on 35 track TRSDOS 2.3 formatted for Model I. The program works on MODEL III and MODEL 4 (in MODEL III mode) and can be easily converted to TRSDOS 1.3, NEWDOS80 V2 or LDOS. The disk comes with the main kernels of two programs 'LABLMAKR' and 'CASSLABL' plus a variety of patches which can be merged with the kernels to cater for the various Epson MX80 / MX100 range of printers. The patches take care of three conditions:

Epson printer with no GRAFTRAX
Epson printer with GRAFTRAX-80 (MX80FT model)
Epson printer with GRAFTRAX plus (MX80/100 III models)

(See later comments regarding FX series)

Installation procedures are extremely well documented and the novice can embark on installing the program with ease. There are in fact individual installation instructions for the following Operating Systems:

TRSDOS 2.3	Model I
NEWDOS+ V.2.1	Model I
NEWDOS80 V.1.0	Model I
NEWDOS80 V.2.0	Model I
TRSDOS 1.3	Model III

After installation and running the program a menu is presented:

1. Index
2. Access Label File
3. Printer Routines
4. Add New Label
5. Install Alternate 'LABLMAKR' diskette

Choice 1 allows a preview of either sample labels displaying the JUMBO (3/8" high) letters or all the labels you have on file.

Choice 2 is used to call a particular label from file and display it on the screen so that it can be either modified and/or printed. Multiple copies of any particular label can be requested.

Choice 3 allows for the printing of a complete set of sample labels, or list of labels on file.

Choice 4 is the main one used to create the text on the labels. Where JUMBO text is required, it is actually displayed as such on the screen using graphics characters. Text can be automatically centred. It is possible to create a file of similar labels with one command.

Choice 5 is called where you have several disks full of label formats and it gives an opportunity to change data disks.

The appendix gives printer DIP switches for the three types of Epson and MICROLINE 82-A together with printed examples of the 16 label types and some application ideas from 'LABLMAKR' users. From trials on an FX100 I find that the output is very erratic. The JUMBO letters don't form completely and only some of the label types work properly. I wrote to Molimerx and they have agreed with this but say that they are contacting the author to see if a suitable version is available.

The program is written Basic and is suprisingly fast considering the work required in computing using dot matrix tables for the JUMBO letters. In summary then, I would recommend this program to all disk users. You can label your disks neatly with it. I enclose a print of the 16 sample labels available.

David Roberts

(0247 - 462564)

Label Type 1

JUMBO 13 CHAR

<Compressed Type; line length maximum = 50 Chars.>

<Compressed Type; line length maximum = 50 Chars.>

<Compressed Type; line length maximum = 50 Chars.>

Label Type 2

JUMBO 13 CHAR

Double Wide; Length = 25

Double Wide; Length = 25

Double Wide; Length = 25

Label Type 3

Double Wide; Length = 25

JUMBO 13 CHAR

Double Wide; Length = 25

Double Wide; Length = 25

Label Type 4

JUMBO 13 CHAR

Double Wide; Length = 25

JUMBO 13 CHAR

Label Type 5

123

<Compressed Type; length = 37 Chars.>

<Compressed Type; length = 37 Chars.>

<Compressed Type; line length maximum = 50 Chars.>

<Compressed Type; line length maximum = 50 Chars.>

<Compressed Type; line length maximum = 50 Chars.>

Label Type 6

123

<Compressed Type; length = 37 Chars.>

<Compressed Type; length = 37 Chars.>

<Compressed Type; length = 37 Chars.>

<Compressed Type; length = 37 Chars.>

<Compressed Type; length = 37 Chars.>

Label Type 7

123

Double Wide = 19

Double Wide = 19

Double Wide = 19

Double Wide = 19

Double Wide = 19

Label Type 8

123

Double Wide = 19

<Compressed Type; length = 37 Chars.>

<Compressed Type; length = 37 Chars.>

<Compressed Type; length = 37 Chars.>

<Compressed Type; length = 37 Chars.>

Label Type 9

<Compressed Type; line length maximum = 50 Chars.>
<Compressed Type; line length maximum = 50 Chars.>
<Compressed Type; line length maximum = 50 Chars.>
<Compressed Type; line length maximum = 50 Chars.>
<Compressed Type; line length maximum = 50 Chars.>

Label Type 10

Double Wide; Length = 25
Double Wide; Length = 25
Double Wide; Length = 25
Double Wide; Length = 25
Double Wide; Length = 25

Label Type 11

Extra Wide 14
Extra Wide 14
Extra Wide 14
Extra Wide 14
Extra Wide 14

Label Type 12

Double Wide; Length = 25
<Compressed Type; line length maximum = 50 Chars.>
<Compressed Type; line length maximum = 50 Chars.>
<Compressed Type; line length maximum = 50 Chars.>
<Compressed Type; line length maximum = 50 Chars.>

Label Type 13

Extra Wide 14
<Compressed Type; line length maximum = 50 Chars.>
<Compressed Type; line length maximum = 50 Chars.>
<Compressed Type; line length maximum = 50 Chars.>
<Compressed Type; line length maximum = 50 Chars.>

Label Type 14

Extra Wide 14
Double Wide; Length = 25
Double Wide; Length = 25
Double Wide; Length = 25
Double Wide; Length = 25

Label Type 15

Double Wide; Length = 25
Double Wide; Length = 25
<Compressed Type; line length maximum = 50 Chars.>
<Compressed Type; line length maximum = 50 Chars.>
<Compressed Type; line length maximum = 50 Chars.>

Label Type 16

Extra Wide 14
Extra Wide 14
Double Wide; Length = 25
Double Wide; Length = 25
Double Wide; Length = 25

BLACKCURRANT

11th July 1984

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MATERIAL**

**HANDLE WITH
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THANKS**

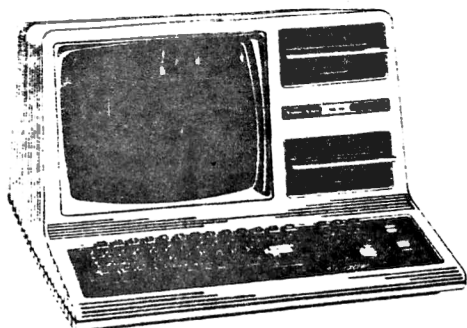
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