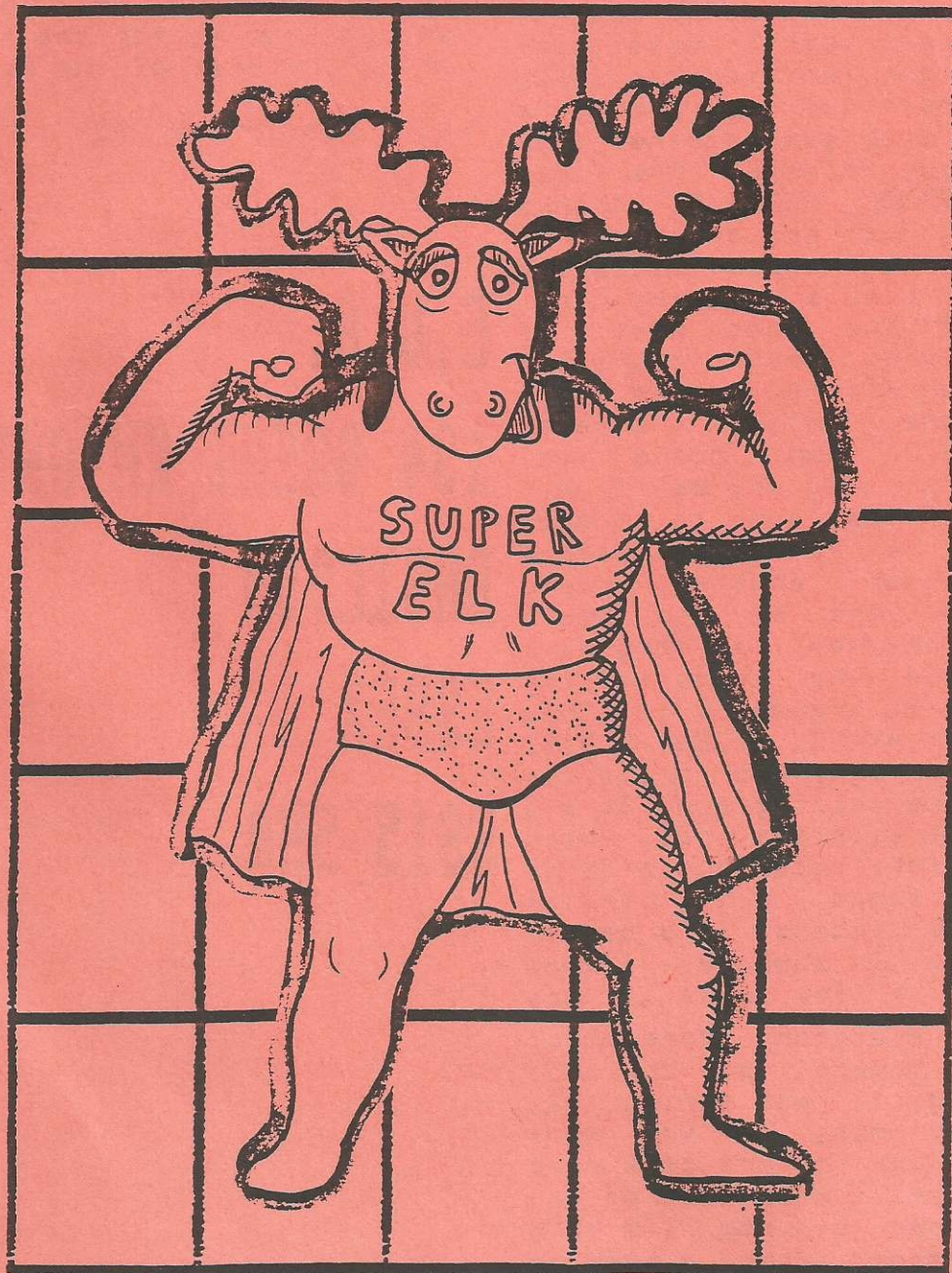# E.U.G.

ELECTRON USER GROUP

ISSUE 3

SUPER ELK

T.B.A.T.F.

Here we are once again with another overdue issue of E.U.G. magazine. I wonder if it's worth apologising for the delay or are you all sick of hearing those words?! It's a pity things haven't worked out as I planned because most of the IMPORTANT work (ie the writing of the articles etc.) was done by many of you and sent to me ages ago! Unfortunately Murphy's law says that "If something CAN go wrong it WILL go wrong!" Want to hear about it? No, I didn't think you would, but I'll tell you anyway!

As some of you know, since the end of August last year I have been without my own printer (an EPSON RX80) and have had to borrow a couple of stop-gap machines from long suffering friends. The first was an EPSON MX82F/T (thanks Tony!) which just about managed to chugg it's way through issues 1 & 2 before it blew a fuse and died. (Sorry Tony!) The good people of Basildon locked their doors and cowered under kitchen tables as I roamed the night streets head-butting lamp posts and screaming, "Why me, why me?!". All good things must come to an end, and it was a few days before Christmas when another friend offered to lend me his spare printer (Thanks Mat!) as long as I could provide the heavy-lifting gear needed to transport it! This machine is an ANADEX SILENT SCRIBE and has been used to print the text you are reading now. It's a very old wide-carriage job, with no graphics facilities but a print speed of about six billion characters per second. It's better than nothing I suppose, I know because for a few weeks I was without my Electron (more about this in a moment) so couldn't print a thing! It was during this period that many of you were subjected to the horrors of a hand written letter, I hope most of you have recovered by now, I'm told the shaking stops after a week or two.

So, where was my Electron during this time??? Away at ELOGGER's workshop having a MASTER RAM BOARD fitted, along with the new STOP PRESS 64 (SP64) desk top publishing system! It's a really amazing package but alas I've been unable to get my RX80 repaired in time as I had hoped so I can't show you the results, but..........I know a man who can! Mr. DEREK WALKER of Glasgow recently had SP64 fitted and very kindly sent a review in the form of a sample page which is printed in this issue! Well, thats quite enough from me for the time being, enjoy the rest of the mag!!!!!!!!!

Will Watts, Feb '92

LETTERS

BREAKING THE RULE

I was intrigued by the "Electron Workshop" (Issue 2) - or how not to press your BREAK key by mistake. Personally I would end up creating a switch that activates the garage door or brings Coronation street onto the monitor and who wants Bet Lynch in the middle of their computer program? Well, some might, whatever turns you on!

My solution is a lot simpler. Cut 2 inches off a plastic 6 inch ruler and place the 2 inch bit between the keys (against the face of the BREAK key and the next one) As the ruler is bevelled the fit will be quite snug. If you need to use the cursor keys, remove the "guard" for a second. If you are one of the "I made my own grand piano at night school" mob you could bevel a piece of 2"x 1" to fit! When running a games prog I just drop a whole 6 inch rule in between the keys - this saves cutting and measuring every thing two inches short!! Seriously, it does work, your fingers hit against the plastic and not the BREAK key! P.S. A good dust cover for your Elk is a bar drip towel (NOT soaked in Brown Ale!) and a tea-towel for your monitor.

"Repton" Ray Lennard, Macclesfield
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An egg box over the disc drive, a washing-up bowl over the printer, a paper bag over my head......*******

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WORKSHOP WORRIES

When I saw the Electron Workshop advertisment in EUG number one, I was quite interested and thought about dusting off the old soldering iron. But on reading the article which appeared in number two, I began to get a strange feeling of deja vu. After consulting my back issues of Electron User, I discovered why. It seems your Mister Harris had cribbed the information from E.U.! I wonder if you were aware of this, and more to the point, can we expect the rest of this series to consist of similar unoriginal material? I do hope this will not be the case as I see little point in your reprinting second-hand information which many of us "Old Boys" have already! Surely this is copyright material anyway and cannot be reprinted without permission! Of course, I am not in full possession of all the facts and you or Mister Harris may have obtained the "rights" to certain Electron User articles!

I would also like to comment on the suggestion made by T. Ives that we should not pay "over the odds" for second hand equipment. I feel it should also be pointed out that purchasing such equipment can sometimes be a heart-breaking experience. I have only ever purchased one add-on in this way, an old Cumana disk drive which gave up the ghost TWO DAYS after it was delivered. Because of this, I would never buy second hand again. I just don't think it's worth the risk when anything I may need can be supplied by PRES, SLOGGER or WATFORD ELECTRONICS in mint condition, complete with no-quibble warranty.

D. M. Finny, Southport
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When Marc Harris contacted me suggesting that he write the Electron Workshop articles, he assured me that he had "many years experience" in electronics. When the BREAK key article came through the letterbox I was aware that the information had first appeared in Electron User, but Marc did NOT try to pass off the ideas as his own and credited their sources in his article. All of the text was written by Marc himself with additional info which never appeared in Electron User. This leads me to believe that he wrote from experience rather than by "cribbing"! I know for a fact that the diagrams did not come straight from Electron User because

OVER →

I supplied the drawing program he used and even had to hand-draw a couple myself at the last minute when Marc's disc drive packed up on him! While I can understand your disappointment at finding you had the BREAK key information in your possession already, I'm sure there were others who found it new and interesting. Due to a rather strange mix-up, no "Workshop" article appears in this issue, instead, for those who can't resist messing about inside their Elks we have a couple of all-new projects written by JOHN BROWN!

As far as the buying of second hand equipment goes, surely this is a case of, "Ya pays ya money and takes ya choice"! If you can afford it, I would say buy NEW every time, but if your budget is tight, second hand is the only answer! There may be an element of risk involved but I think the odds are in favour of the buyer! *************************

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THE ELECTRON - A MINOR CLASSIC!
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I'm concerned that there are still arguments about whether or not eight bit computers like the Beeb or the Elk are obsolete, of course they are. In exactly the same way as the good old Morris Minor motor car is obsolete. No one would deny that the most basic 90's family car offers a comfort, economy, sophistication and equipment level (eg a radio and heater demisters as standard) far in excess of anything that was being considered in the heyday of the Moggy. Yet there is still a roaring trade in refurbished Minors, there is a greater turnover of stock at the Morris Minor Centre than some new car showrooms I travel past on my journey to work. When was the last time you saw someone driving a Moggy? Yesterday?

So it is then with the Beeb/Elk. The basic model on release was a poor show when compared with the 90's Amiga/ST. A small memory and tape based storage is not sufficiently alleviated by goodish graphics and is let down by some very slow running. Where these ancient Acorns score is their built in expandability and extreme robustness. More importantly eight

bits running through 64K is quite enough to write a rude letter to your bank, a friendly letter to EUG, supports a big enough spreadsheet to cast the financial runes for home or small business and still has enough to scoot about the galaxies teaching nasty bad mannered aliens and pirates the full meaning of the word "tonk". In fact all the main uses for a computer using disc based storage.

In the same way that the "obsolete" Morris Minor is a sought after car (exactly NOT because it has fiendish fuel economy, 150 mph and heated seats but because it does it's job well), the eight bit computer retains a solid user base, and thus a thriving supplier platform because there isn't actually any advantage in replacing it! Sixteen bit computers are not inherently better at being computers than a properly designed eight bit, but they are perceived as being superior because of their increased memory and greater processing speed. If Laural & Hardy would have been funnier in colour, I'd accept that this letter would be better if written on a sixteen bit machine.

I hope that sinks the argument that the Elk is not obsolete, but establishes that obsolete does not automatically mean useless.

By the way, I enjoy nothing more than overtaking Morris Minor or Triumph Herald drivers in my hairy chested Ferrari engined Fiat saloon and yelling commendations on their sedate progress along the highway. In reply these knights of the road tell me in two words of the joys of sex and travel!

Christopher Chadwick, Swindon.

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ROM INFO REQUIRED
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I wonder if anyone knows what the spare ROM socket and associated DIL holder were originally intended for? These are the two spare places in the middle of the printed circuit board which are shown in

the circuit diagram as IC2 ROM spare socket, and IC18 74LS00, the latter intended to be used to switch the added ROM I would say. It is wired already so there MUST have been some intention to add another ROM to be switched using some key-in code. Has anyone thought about it or maybe utilised the places? I am working on some ideas as ROMs are available and can be programmed quite easily these days. I would be interested in any replies. Here we are very much into computers, having Spectrums, Radio Shack, MSX, Sharp, to name a few. I also have manuals for most and am willing to help anyone to solve any problems - hardware only - software is beyond me at the moment and at my age data is difficult to absorb!

John Brown, 45 Marlborough Avenue, Falmouth, TR11 4HS
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Being to electronics what "Prisoner Cell Block H" is to the performing arts, I can offer John no advice at all, so could all those in the know please contact him?
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BRING BACK E.U.!!
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I miss the ELECTRON USER, don't you? It was very informative. Do you know of anyone I could write to about the withdrawal of this fine magazine with a view to having it reinstated? I'm sure many Elk users would prefer it to the "Comic-Cuts" attempt in the MICRO-USER at programming the Elk.

Could we send a petition to the publishers of Electron User (Database)? It might just work if enough users sign. I have had my Elk for 4 years. In that time I have used a BBC B, a PCW 8256, an Enterprise computer and the ubiquitous Spectrum, and for ease of on-screen editing, scrolling of programs and user friendliness the Elk has them beaten hands down! I won't change computers now.

Richard Price, Ayrshire.
=====================================

Electron User seems to have played a very big part in most Electron owner's computing lives. Alas publishing, like all business, is based on PROFIT so we must assume that declining sales figures over a considerable period of time was the cause of E.U.'s downfall. Trying to persuade Database Publications (now Europress) to resurrect our favourite mag would be like asking a gambler to back a donkey in the Grand National - in their eyes!

I can't pretend the magazine you're reading now could ever match E.U.'s slick and glossy appearance or content, but thanks to our small but enthusiastic band of members we're improving all the time!
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THE VERSATILE ELK
=================
I am inclined to be a more serious user of my Electron and have expanded it to increase it's versatility. It consists of the basic machine to which I have added from P.R.E.S.: AP1, AP2, AP3, AP6, AP7 and ADT (which I found I could not use for lack of knowledge of what I assume to be assembly language - perhaps scope for a future article in the mag). The AP5 I am told, is no longer available.

I have recently added a printer (Panasonic KX-P1624) and my Electron has just returned from Cornwall where SLOGGER COMPUTERS have just grafted in a Maser RAM Board and their brand new STOP PRESS 64 (I think I may have been the first customer for this).

I have more or less mastered VIEW. I am working with VIEWSHEET and VIEWSTORE and hope to be able to use all three interactively before too long. The SP64 requires a mouse to run it and I expect to have that in the next week - then I am ready for Desk Top Publishing. Who needs Risc OS and 32 bit technology? Not me, I have a 64K Electron.

T.E.R. Monaghan, Invergordon.
=====================================

Yet another satisfied customer! ***

ANSWERS PLEASE
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My main use of the Electron is for word processing. I use the Acornsoft View word processing ROM and JP101 printer. It has served me well for a number of years and I will probably continue to use this equipment for as long as it continues to give good service.

Frankly, I now find tape software too much trouble to bother with but recognise the limited availability of software on 3.5" disc. Does anybody have a list of commercially available software?

I have the Plus 3 Welcome, Plus Three Games, Superior Collection Volume 3 and various discs from Electron User magazine. I also have two of the KOSMOS language discs (French and Spanish). Although these are advertised as being for the Master Compact they run without problem on the Electron. However, Superior Software/Acornsoft say that their Master Compact discs will not run on the Electron and Database say the same about their Mini Office II

In addition to the above I also have the Electron disc version of Acornsoft's Database. This appears to be potentially an excellent piece of software but I have been unable to get it sort entries once made. Does anyone have a version that runs without problems?

I have many games etc on cassette and have transfered some of these to disc using the SLOGGER Tape to Disc ROM T2P3. This is a tedious business and is often only successful after several attempts. Does anybody have a list of software that can be successfully transfered or a list of those which cannot?

As already mentioned I have the Acorn/Olivetti JP101 printer. This is excellent and has given good service in the four years since I bought it new for less than one hundred pounds. It works on the spark jet principle and the ink jets cost around 4 pounds each. I used to buy these from Micro Media near Leicester but I believe they may have ceased trading. Does anyone know of another supplier?

Although the printer has always given good service, I fear the day when it requires a repair. Does anybody know where this printer could be serviced/repaired, preferably within easy reach of Preston. The same question applies to the Electron itself and the disc drive.

E.C. Kramer, Fulwood, Preston.
=====================================

An article dedicated to the repair and maintainance of the Electron and related hardware is being researched at the moment, so look out for it in a future issue! Can people help with Mr. K's other questions? ************************

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FOUR POINTS TO PONDER
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I have an Electron with AP1 and AP3 expansions with a 3.5" single sided drive, a STAR LC10 printer, VIEW and VIEWSHEET cartridges.

I am self taught from the normal manuals which come with the equipment and enjoy dicovering what can be achieved with this very simple machine. I use the the word processing and spreadsheet facilities extensively.

A short while back I approached a widely advertised Acorn dealer in this area and, in simple terms, asked what I should graduate to and why, if I were to upgrade from the Electron. They totally failed to convince me to change at all. The Electron may be the baby of the Acorn range, but it is a remarkabley useful machine, and for me does an excellent job.

It seems to me that your magazine may well provide a good forum for exchanging information, asking questions and prompting the user to seek further usage from his or her Electron.

The sort of things I personally would find of interest would be:
(1) Guidance on how to produce graphics such as those in the "Taster"
(2) How printing may be speeded up. My efforts seem to take hours.

(3) VIEW printer drivers - how to obtain highlights/underlining. The discs and ROM advertised by Watford Electronics they say are unsuitable
(4) Advice regarding the usefulness of some of the various add-ons for the Electron which are currently available on the market.

G.S. German, Wheathampstead, Herts
=====================================

(1) I hope to start work on a series of articles about graphics (including animation) in the not too distant future. (2) Printers and printing are very popular topics for discussion it seems, in particular screen-dumps and printer drivers - watch this space! (3) Please see the next letter! (4) We hope to make product reviews a regular feature of E.U.G.! ***********************

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THAT WATFORD ROM
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A recent request in the Micro User was from an Electron owner who wanted to know if Watford Electronic's View Printer Driver ROM was compatible with the Electron. I have wondered about this for some time, and having made mine a 64k Electron and added a printer, I decided to take a chance. The ROM fits nicely into my AP6 ROM board, and I can now get underlined and bold printing on my Panasonic KX-P1624. Twenty nine pounds was a lot to pay for that small benefit, I hear you say, but I think I can get a lot more out of it than that. The problem is that the manual is not very clear and is going to take some deciphering. Suffice to say that I am going to leave it alone for a while as I want to understand my new printer first, besides, I have only just managed to get the printer to print a pound sign and the VPD ROM only makes a HASH of it.

        T.E.R. Monaghan, Invergordon
=====================================

I wish the heap I'm using could print a pound sign! Please keep us posted on your progress with the VPD ROM. Thanks for the info you supplied for the printer survey etc too!

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WELL, THAT'S ABOUT ALL THE LETTERS WE CAN SQUEEZE INTO THIS ISSUE! IF YOU'VE WRITTEN AND YOUR LETTER DID NOT APPEAR HERE, LOOK OUT FOR IT NEXT TIME - AND PLEASE, KEEP 'EM COMING!!***************************

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PRINTER SURVEY - UPDATE
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Thanks to all those who have sent information about their printers so far! If YOU would like to take part, send the details of your machine as outlined in issue 1 as soon as possible. We'll print the results including sample print-outs in a future issue.
****

PROBLEMS SOLVED
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As most of you know already, Uncle Will is NOT the fount of all knowledge, but that doesn't mean that E.U.G. can't answer your queries! We have quite a little band of experts in our ranks so solutions to most problems can be found by asking around. If you have a burning question which needs answering send it with an SAE to the usual address and all that can be done, will be!!!!
****

ELK Entertainment

BY CHRISTIAN WEBER

This is a new and regular column concerning what most of you out there are still interested in.....
G A M E S! Which does come as a bit of a shock when you consider how few companies produce software for the Elk, ie Superior Software and a few budget companies. If you have any problems concerning arcade games and adventures (alas NOT text adventures, anybody interested in writing a column?) send the details in to the usual address.

Recently on the software front there has been a production spree for the Elk, what with LOOPZ from ASL, BALOON BURSTER from Blue Ribbon and PLAY IT AGAIN SAM 16 from Superior. On the subject of Superior Software, whatever happened to the rumours about them getting the licence from Ocean to produce an Elk version of ROBOCOP? It must be well over two years since this news was broken to us in Electron User, so where is it?! We are all grateful for SIM CITY and HOSTAGES being released, but I'm sure ROBOCOP would go down well, no matter how old it may now be.

Over the Christmas holidays I dug some real blasts from the past out of my games collection, namely GHOULS and CROAKER, each a classic in it's own right. As the memories came flooding back, I thought E.U.G. readers might be interested in the cheats, so here they are!

GHOULS (original and SAM 7)
Type- PAGE=&2200 - press RETURN,
LOAD"GHOULS1"
Once loaded, change line 140 to read:
140 LI=LI+1
Then type RUN

Each time you die, you don't lose a life...you gain one!

CROAKER
PAGE=&1000
LOAD"CRK"
LIST 130
Change the value after ?&2334= to however many lives you want, then RUN the program.

HOBGOBLIN II - Review
=====================

Supplier : Atlantis Software
Address : 28 Station Rd,
          London, SE25 5AG
Price   : £ 2-99
Format   : Tape only

Remember Hobgoblin, the game very similar to Ghosts 'n' Goblins on other computer formats? No? Well let me refresh your memory...

Many years ago in the original game, the peaceful land of Altoria was under attack from Hobgoblins and the undead who usually lurked in the swamps that surrounded the Kingdom. However, under the protection of the Orb of Altoria the Kingdom was thought to be safe. Unfortunately the Orb was stolen and the evil Hobgoblin lord and his dark forces marched ever closer. The King called upon his son to battle through the infested swamps and on to the Hobgoblin's castle to recover the Orb. The Orb was saved and the people lived without the need to fear, until now...

The Hobgoblin lord was merely licking his wounds whilst planning his next attack! Not only was an even greater army assembled but the Hobgoblin lord's power grew even greater than that of the Orb's. This time there is no fall

back plan, the Kingdom really is in trouble...

The new King (the old one died) decides that his son should, like he did, rescue the Kingdom and finally destroy the Hobgoblin lord once and for all. Not being one to back down, the King's son agrees and steps out into the swamp...

OK, lengthy intro aside, the game plays and sounds exactly as the first one did - no bad thing really. The screen layout is a lot better with a well drawn inventory on the right hand side showing lives, score etc. The top of the screen shows one of the many new elements to the game. In the original you collected coins or daggers and once you had four your weapon was randomly upgraded. You still collect the coins which are found once a baddie has been blasted or a chest or urn is shot open, but now you can "save-up" for the weapon you want to use. So, the more you save, the better your weapon - although the final weapon isn't half as good as the one before it! Backgrounds are more clearly defined and the baddies are better drawn even if they only have two frames of animation each. You look similar to the way you did in the original game (apart from a massive nose!) and all the same moves are available except now you can climb and descend ladders, a great improvement. But be warned, some of the ladders are rotten and cannot support the weight of someone in plate armour! You'll discover some new baddies like Death who boldly pelts across the screen at high speed towards you, and some re-drawn old ones which improve the game no end. The final confrontation is a one-off battle between you and the Hobgoblin lord and there can only be one winner.......!

To sum up, the game is utterly brill and totally playable! By the way David, I await Squiffles with baited breath! (Yewwot?! - Will) Final tip: Try jumping on some tree branches.

Graphics 10 : Playability 10
Sound   6 : Lastability 9
Overall 9

SPITFIRE 40 - Review
=====================
Supplier : Alternative Software
Address : Units 3-6
           Baileygate Indust Est,
           Pontefract
           West Yorkshire
           WF5 2LN

Price   : £ 2-99
Format   : Tape only
Order code AS373

Tally ho chaps! Bandits at 3 O'clock...so what do we do until then? You play Spitfire 40 and recreate those airborn Bosh-bashing flights with this old simulator that has been re-released as a budget title.

On opening the cassette case not only did I find the usual things - inlay card, cassette - but also a very small instruction booklet, full of directions on how to fly!, So as my tape player chugged away and loaded the game, I began to read through the instructions...

Right, how to take off...flaps revs, brakes off, raise nose slightly, left a bit, gear up, more revs, press one of fifty two other buttons and...Voila! Flight!

I found out there were 3 game options...(1) Flight, which involves just flying around and getting used to your plane, (2) Combat, where you take off and intercept the enemy and (3) which has you already flying and shooting everything. This sounded promising!

You can choose to fly as any one of the pilots listed in the log and as you gain experience, work your way up the promotional ladder. Being able to SAVE your pilot in the same way as Elite (save onto a blank tape) is a great help to those of us who really can't be bothered to play the same game for three days non-stop!

Having selected my pilot I go straight into Combat mode, grabbing the instructions I do as they say and...I'm flying! CRASH! I'm not flying! What happened? It all seemed so easy in the instructions (little bit of sarcasm there).

Moving onto the shoot-em-up option (and turning off the terrible sound), I spend a good 15 minutes ducking and weaving, shooting and destroying and getting bored.

Conclusion, well, it is probably the most responsive flight simulator on the Electron with a good screen layout giving a convincing look to the cockpit. It has enough options to keep most games players happy, be they a shoot-em-up junkie or a simulator buff and the addition of climbing the ranks adds to the lastability of the game.

It only really has two down points, the truly awful engine noise which will have you reaching for the sound-off key as soon as possible and the enemy sprites which have very little movement and never increase or decrease in size.

Half the fun and half the skill of Spitfire 40 is the landing which is very difficult but once mastered really improves the game. A special mention must go to the zoom facility when looking at the map, it's useless but nice to have anyway!

```
Graphics : 5 : Playability 9
Sound    : 1 : Lastability 9
Overall  : 9
```

GOT PROBLEMS WITH A
GAME ??

DISCOVERED A NEW
CHEAT ??

SEND 'EM IN
SOON !!

TYPE-IN GAME

WORDSCORE is a computer version of the popular channel 4 word game "Countdown".

For those who haven't seen the TV program, the rules are as follows. Two contestants take turns at choosing nine letters from two random packs of cards, one containing vowels, the other consonants. When the last of the nine letters has been chosen the clock is started and the contestants have 30 seconds to make the longest word possible from the letters available. The winner of the round is the one with the longest word, the number of letters it contains being added to their total score.

That's the basic game, but there is no reason why you should not change the rules! For example, the winner could be the person who can make the greatest number of words from the letters available within the time limit.

A room full of adults could all play as individuals or as teams. This is a good way of dicovering who amongst your family and friends is a real word-wizard and who is an outrageous cheat! Be warned, keep a dictionary to hand at all times! ("SPLIDGE" indeed Grandma!).

Even small children enjoy the challenge of finding words they know in a jumble of letters - although the very young may need a bit of help from an adult! There's no need to write the alphabet out umpteen times on squares of card or to shuffle them and no need to set a timer each time, the program does it all for you!

```
   1 REM **************
   2 REM  WORDSCORE
   3 REM  By WPW
   4 REM  Revised 1982
   5 REM **************
  10 MODE 5
  20 VDU 23,1,0;0;0;0;
  30 *FX11,0
  40 randomise = RND(TIME)
  50 REPEAT
  60 COLOUR 129 : CLS
  70 COLOUR 0
  80 A$=" "
  90 PRINTTAB(4,5)"Please Press"
 100 PRINTTAB(4,8)"'C'  or  'V'"
 110 COLOUR 3
 120 FOR rep% = 1 TO 9
 130 REPEAT
 140 C$ = GET$
 150 SOUND 1,-15,100,1
 160 UNTIL C$ = "C" OR C$ = "V"
 170 IF C$ = "C" THEN PROCcon
 180 IF C$ = "V" THEN PROCvowel
 190 A$ = A$ + B$
 200 PRINTTAB(4,15) A$
 210 NEXT
 220 PROCclear_message
 230 PROCclock
 240 PROCnew_game
 250 UNTIL FALSE
 260 END
 270 DEF PROCcon
 280 X% = RND(26) + 64
 290 IF X% = 65 THEN PROCcon
 300 IF X% = 69 THEN PROCcon
 310 IF X% = 73 THEN PROCcon
 320 IF X% = 79 THEN PROCcon
 330 IF X% = 85 THEN PROCcon
 340 B$ = CHR$(X%)
 350 ENDPROC
 360 DEF PROCvowel
 370 X% = RND(5)
 380 IF X% = 1 THEN B$ = "A"
 390 IF X% = 2 THEN B$ = "E"
 400 IF X% = 3 THEN B$ = "I"
 410 IF X% = 4 THEN B$ = "O"
 420 IF X% = 5 THEN B$ = "U"
 430 ENDPROC
 440 DEF PROCclear_message
 450 PRINTTAB(4,5)"
 460 REM Insert 12 spaces
 470 PRINTTAB(4,8)"
 480 ENDPROC
 490 DEF PROCclock
 500 COLOUR 2
 510 TIME = 0
 520 REPEAT
 530 T% = TIME / 100
 540 p%=T%*4
 550 PRINTTAB(8,22);T%
 560 SOUND 1,-15,p%,1
 570 SOUND 1,0,1,1
 580 UNTIL T% = 30
 590 FOR p% = 1 TO 50
 600 SOUND 1,-15,p%,1
 610 NEXT
 620 FOR p% = 50 TO 1 STEP -1
 630 SOUND 1,-15,p%,1
 640 NEXT
 650 ENDPROC
 660 DEF PROCnew_game
 670 PRINTTAB(4,22)"Another Game?"
 680 PRINTTAB(8,24)"Y / N"
 690 REPEAT
 700 Ans$ = GET$
 710 UNTIL Ans$ = "Y" OR Ans$ = "N"
 720 IF Ans$ = "N" THEN PROCend
 730 IF Ans$ = "Y" THEN ENDPROC
 740 ENDPROC
 750 DEF PROCend
 760 *FX12,0
 770 STOP
 780 ENDPROC
```

USING THE ASSEMBLER LANGUAGE
BY ROY WARNER

These notes are about using an Electron for Assembly Language and BASIC. If your wish is fame and fortune as the definitive 6502 machine code programmer, then read no further. An Electron is a good value for money Home computer, it is NOT an Apple Mac.

Minimum equipment required is a basic Electron and tape recorder, given that statement it should be appreciated that the articles will touch on matters related to expansions. A good investment would be the Advanced User Guide, the best investment is be prepared to read it and the standard User Guide.

Over the next few months a text type program will be written, the method is important, the program incidental. An assembly listing with routines in procedures will demonstrate that assembler need not be difficult to follow and modify.

Efficient programs may be written using a limited number of "commands". The Advanced User Guide shows how to access code written by Acorn's programmers, that code will be used.

Upon RUN, each line of a BASIC program is seperately altered into code the micro processor can understand and process. When an assembler program is RUN the assembly language converts it to a block of machine code. To activate that machine code, program control is passed to the entry point by the instruction "CALL". Consequently machine code is faster and consumes less memory.

Acorn BASIC and Assembler interface each with the other to advantage, but BASIC will trample all over machine code, so a safe area must be created for the machine code - like this:-

```
10 MODE 6 : HIMEM=&5000
20 base=HIMEM+1
```

There is now an area below screen memory and above HIMEM which BASIC cannot impinge upon. Now type:-

```
200 P%=base:[OPT3
330 EQUS"my string"
340 EQUB13
640 RTS:]
```

P% tells the assembler where to start the machine code, the square bracket starts the assembler language, OPT3 tells the assembler to assemble with error reports. EQUS is not a command, it is a statement, (page 149 of the User Guide describes it). When the assembler encounters this statement a "string" is converted to ASCII character codes and inserted into the machine code. RTS is a command which stands for RETURN TO SUBROUTINE, in this instance it should return the program to BASIC. The reverse square bracket tells the assembler that the listing is complete. Now CALL base and THE CAT STRIKES!, dead pidgeons abound! The EQUS statement inserts ASCII character codes prior to the machine code command RTS.

If CALLed, the first ASCII character code is passed to the accumulator as a machine code command, but as it is NOT a machine code command, the accumulator cannot process it. The program "HANGS", this can be seen by a dead cursor. It is a plain line - not flashing. The only way out is "BREAK" then OLD, LIST.

With luck the work is not lost, but it is only luck! Moral?....... ALWAYS save the first listing before RUNning it! That first listing is known as the source code, the machine code generated by assembling the source code is called the object code.

There are four statements that will store data in machine code, namely:-

1) EQUS. 2) EQUB. 3) EQUW. 4) EQUD

We shall use all four as time goes by, but data must never be allowed to enter the accumulator as machine code commands. In simple assembler an RTS or similar command should be used as a barrier. By use of the stack it is possible to leapfrog over such data. Should anyone be clever enough to enter machine code by the use of EQUB, EQUW and EQUD then I comment that this is assembly programming and not pure machine codeing. Debug the listing by inserting a line:-

320 RTS

and edit the RTS out of line 640. Now it may be RUN but do not CALL it. Type:-

PRINT$&5002 and press RETURN. The result should be the printout, "my string". Also try:-

PRINT$(base+1) - the result should be the same. Note base is a BASIC variable but it has a known position in the machine code listing. Type the following as ONE line and then RETURN:-

FOR a=&5001 TO &500B:
PRINT"&";~a;"="?a:
NEXT

The output should be a list of hex addresses with the ASCII codes of the string. Note the 13, the code for RETURN (EQUB13). The odd number is 96, try a PRINT~96, the result will be 60, the hex number that tells a machine code program to RETURN to SUB ROUTINE (RTS).

Decimal 96 is ASCII code for the pound sign, but the program did not hang. Assembler commands are fed into the accumulator as numbers, the numbers activate logic gates within the micro processor. This determines whether the accumulator requires data or a further command. RTS does not need data, so the accumulator exits to the calling routine or language. Allowing pure data statements into the accumulator, if followed by a legal command or data may result in (Acorn's famous term for mayhem), "Undefined results".

The User Guide uses a form of DIM statement to protect machine code. It is called a byte array. Some books on assembler advocate moving PAGE or LOMEM to provide a safe area. My advice is do not try to use these areas. Set HIMEM then declare the start of the code as in lines 10 and 20. P% may be treated as the program counter, it is not; the program counter is one of the registers of the Electron, but P% expresses the program counter in a way we can understand. P% increments with each command or byte of data. After a source listing has been run, PRINT~(P%+2) will print the last address used plus two to the screen.

A *SAVE "file" 5001 <num> ("num" being the result of PRINT~(P%+2)) will SAVE the machine code.
OPT will be looked at again in the next article. The important things we saw this time were:-

The use of EQUS and EQUB, these statements "POKED" data into memory. It can be read by BASIC indirection commands such as "$", "?" or "!". "base", a BASIC variable actually sets the start of the machine code

Next time our program will be enhanced by a simple print routine that will print the string "my string" on screen. ***************

BOOK REVIEW
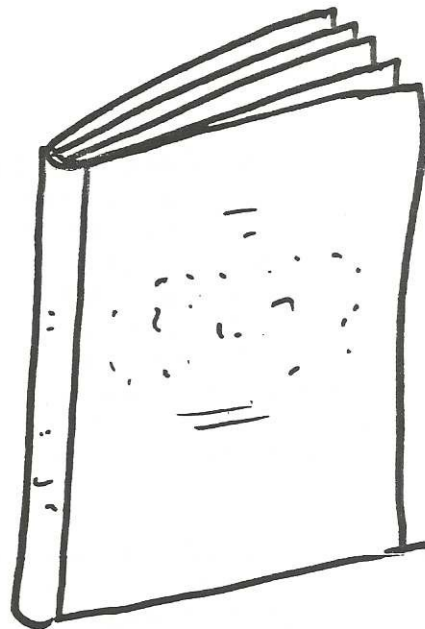
The Dream Machine was written to accompany the television series of the same name which was screened on BBC2 at the end of last year. Like the series the book traces the evolution of computing from the dawn of civilisation when pebbles were used to aid simple arithmetic, through the decades of room-size number crunchers, up to the present day - with a few speculations about the future thrown in for good measure.

Quite large chunks of the text are direct transcripts from the actual TV programmes, but some passages contain snippets of information which did not go out on air. For example, one of the footnote expansions at the back of the book relates a story concerning an early language translation program which could reputedly translate English into Russian and vice versa. The computer was given the English adage "Out of sight, out of mind", to translate into Russian and back into English. It finally printed out, "The invisible are insane"!

Although the book catalogues the step by step advances in technology which over many years have led to present day computers, jargon and esoteric references are kept to a minimum.

The people who made the above mentioned advances are discussed in some detail, some of whom we learn were tragic, misunderstood genii like Charles Babbage who struggled to make people see the potential of his never-completed Analytical Engine and Alan Turing who was far sighted enough to perceive that a computer could be used for a lot more than mere mathematical calculations, even before one had actually been built!

The history of computers has also been (and still is!) shaped by the attitudes of many hostile doubters, usually those who held the purse strings of research and their almighty gaffs are also revealed.

Once I got past the first couple of chapters I began to feel as if I were reading some strange detective story where, already knowing the outcome of the case, ie present-day computers, dicovering the clues was still enjoyable.

Of course, the humble Electron isn't mentioned once in all this and Acorn only merit one sentence, but it's interesting to trace the Elk's "family tree" back to the era of valves and punch-cards!

Written in an easy to understand non-technical style, The Dream Machine is a highly readable and in places, quite gripping tome. I only have one reservation about it and that's the price.
At 16-95 this could be quite an expensive addition to your collection so I would recommend you order a copy from your local library.

The Dream Machine
By Jon Palfreman & Doron Swade
Published by BBC Books
Price £ 16-95

more IDEAS

By John Brown

After the recent successful rebuild of an Electron, a few ideas were tried which may be of interest to others.

On the Electron we have three outputs of information.
(1) The RF output from the modulator.
(2) VIDEO output (black and white)
(3) RGB (R-ed, G-reen, B-lue) for monitors that need seperate colour inputs. On this socket we also have the sync output.

However, we can quite easily convert the VIDEO as in (2) to get COLOUR signals out which some monitors will accept.

This is done as shown in Fig 1. Here we locate the place where Link 4 is shown, solder a piece of wire across and Hey Presto, we can feed a colour monitor.

Naturally we have to remove the top Keyboard cover and carefully remove the plug-in connector. Looking on the left-hand side, we locate the bunch of resistors, Q7 and we can see Link 4 marked on the main board. Link across the top two marked places. C17 is already connected to the PCpads.

Next, in E.U.G. Issue 1, it was suggested that leads be brought out to feed an outside source for better sound. I took this a little further by installing a 3.5mm socket, rewiring using two added wires. This was done easily and plugging in an external jackplug, we can feed via a sheilded wire to an amplifier or larger speaker. By removing the jackplug we resort to the internal speaker automatically.

Locate the corner on the bottom case and drill a 0.25" hole in a suitable place so that a PLUS 1, ROMBOX etc can still be fitted without interference. See Fig 2 & Fig 3. Both these jobs can be done without removing the main board if care is taken.

Fig 1

JOIN A-B WITH SMALL LOOP OF WIRE

R41 R42 R30 R29

GROUP OF RESISTORS

LINK 4

A
B

Q7 (TRANSISTOR)

C17 SMALL CONDENSER

Fig 2

DRILL 1/4" HOLE

BOTTOM CASE

WHERE SPEAKER CONNECTION WENT

3.5mm JACK SOCKET

MAIN BOARD

Fig 3

NEW WIRE

SPEAKER

BLACK WIRE

NEW WIRE

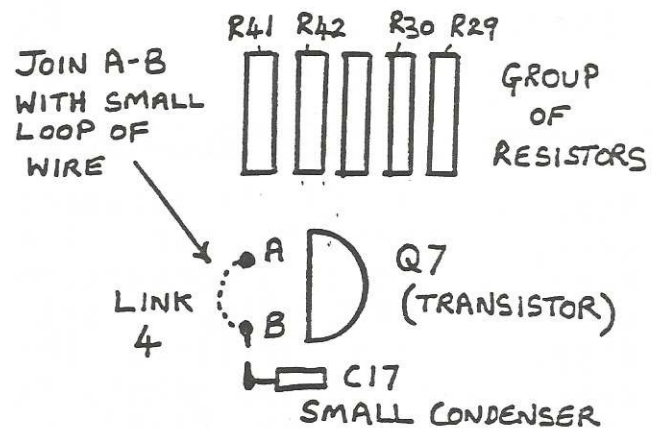RED WIRE +
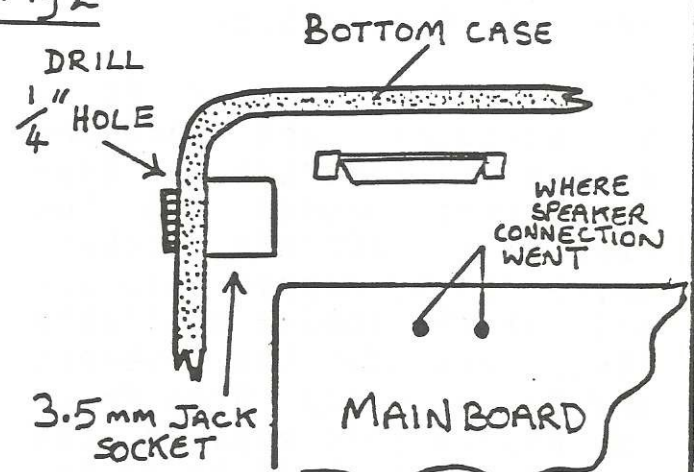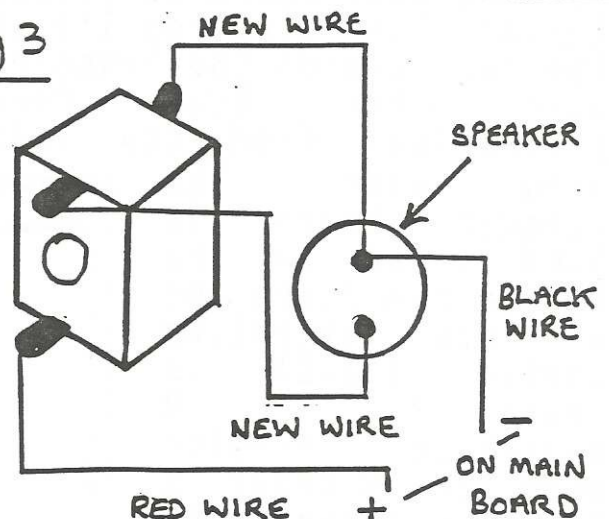
ON MAIN BOARD

****
PLEASE NOTE! PEOPLE CONSIDERING HAVING SLOGGER's MASTER RAM BOARD FITTED SHOULD NOT ATTEMPT THE ABOVE SOUND PROJECT AS THE JACK SOCKET MAY OCCUPY THE SPOT NEEDED FOR THE M.R.B.'s SWITCH!
***

Stop Press 64 is Sloggers latest product for the Electron and is a conversion of the AMS Stop Press. Slogger has utilised the speed and shadow memory of his Master Ram Board to produce a fast and user friendly environment for Desk Top Publishing.

At Present Stop Press 64 is a hardware and software expansion offering a User port (for mouse) and two versatile ROM/RAM sockets which can be mapped into any pair of the twelve available (this excludes the keyboard and Basic) pages. Stop Press is mapped into page 10, the unused page held by Basic. The circuit board is fitted inside the Electron lid at the rear beside the keyboard with the User Port protruding from the left hand side. The circuit board is hard wired to the Master Ram Board and a new operating system (V3.1) is installed. A cartridge version with or without a User port should be available later this year.

The package is very easy to use, just insert the system disc and press SHIFT-BREAK. A few seconds later you are presented with a Mode 0 screen with a Menu Bar across the top and 10 ICON's down the right hand side. No page create is required (as with Pixel Perfect) and it is very economical with disk space e.g. 37.5K bytes per page.

The ICON's - selected by pointing with a mouse or cursor keys - enable you to Scroll the window (another Icon shows which part of the page is visible), Load and Save Pages, Screens and Cutouts from any drive, Cut & paste - Stretch (enlarge/reduce), Rotate, Flip and Zoom (Pixel Edit), Enter Text - Files from View/Wordwise or from the Keyboard, Graphics - Spray, Paint, Patterns, Circles, Triangles, Box etc. Print - Page, Screen, utout in various page dimensions and Quality, and much more...

Stop Press 64

Electron

Desk Top

Publishing
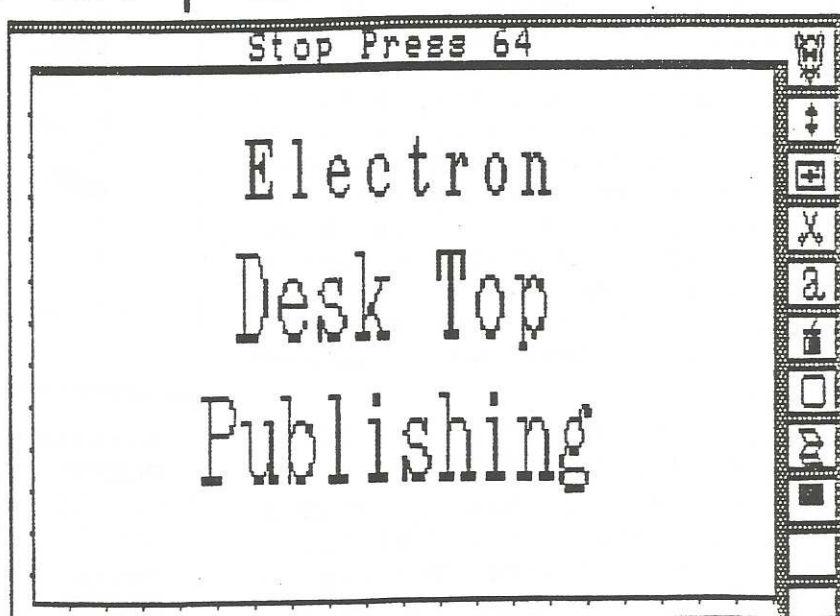
Typical screen layout

To place or move anything on the page is very simple, for example placing text. First set the window size (eg a column) by selecting the window ICON and moving the cursor (cross hairs) to one corner of column, fix it there by pressing the SELECT button then move to the opposite corner and fix it again by pressing SELECT. Now select the Text Icon (the letter "a") then select from the Menu Bar the Font, type of Justication, Height and Width of characters. Now choose the source of the text - a text file from disc or simply typing from the keyboard. If the View/Wordwise option is selected a window is opened in the centre of the screen showing a list of files from your disc, simply move the pointer onto the file name and press the SELECT button. All you have to do now is watch the text appear on the screen and format itself within your defined area.

Conclusions

The Graphic capabilities of Stop Press 64 are excellent especially when it is possible to draw not just lines and circles etc. but edit pixels. It would be nice to see a disc or two of clip art for those who are not budding Picasso's.

17 Fonts are supplied (Sanserif, Old English etc) which are easily selected, stretched and rotated giving a wide range of effects.

The whole page is stored in memory therefore disc access is minimised, and you can play around with your page all you like before you choose to save it.

This review was written on View 3 and imported to Stop Press 64. The graphics were drawn using the the Paint option of Stop Press 64.

E.U.G. e.u.g.
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E.U.G. e.u.g.

Minimum System:
Electron,+1 or Rombox,
Master Ram Board and
any Disc System.

USING 'VIEW' WITH TAPE

By Thomas Boustead

Last time we saw how to set up a "page" by defining form length and setting margins. This time we will see how to alter the appearance of printed text by inserting "highlights" and using a printer driver. BEFORE entering VIEW, type in the listing which accompanies this article and save it as "PRINDRIVE" onto a blank tape. PLEASE NOTE! ALL pound signs which appear in the listing should be REPLACED with a hash (#) sign! (Mr. Boustead would like it to be known that the ORIGINAL listing was by JULIE BOSWELL)

A highlight is created by placing the cursor at the point from which you want the style started and again at the point at which you want it to cease by reverting to the original style or by duplicating the highlight to create yet another style. So, having positioned the cursor at the start-point, hold down FUNC and press "H" which then appears in the text as a black bar on a white background. This will not appear in the print-out. Having inserted your highlight(s) SAVE your VIEW file onto tape. It is now time to load the printer driver generator program that you should have already saved. To do this press ESCAPE so that you return to VIEW's command screen. Type *BASIC and RETURN, then type LOAD"PRINDRIVE" and RETURN and (providing you had the correct tape in the player!) the program should load in the usual manner. When the program has loaded type RUN and RETURN. You will then be asked to type in the pad character. For this use the "pound" sign which of course

usually prints out as the "hash" sign. Now you will be asked to specify the style of type you wish to use by inputting the code used by your printer for that style. (Please see examples below) You will then be asked if you wish to input any other changes of style by typing "Y" or "N". The program should then run automatically to produce the machine code program called DRIVER. Now return to VIEW by typing *WORD and RETURN. You should have the MODE 6 command screen. Insert the tape with your VIEW file into the player. Type READ <filename>, RETURN. When it has loaded type MODE 3 RETURN. With the printer switched on and waiting type PRINT and RETURN. Printing should commence and when the printer gets to the point at which the first highlight has been placed the printer will change style until it reaches the second highlight.

(handwritten, illegible)

```
*****************************************
*                                       *
* CODES WHICH SHOULD WORK WITH          *
* ===============================       *
* MOST EPSON-COMPATIBLE PRINTERS        *
* ===============================       *
*                                       *
* 1,27,1,71 = Bold Print                *
* 1,27,1,72 = Cancel bold               *
* 1,27,1,52 = Italic print              *
* 1,27,1,53 = Cancel italics            *
* 1,27,1,45,1,1 = Underline             *
* 1,27,1,45,1,0 = Cancel "              *
* 1,27,1,64 = Reset printer             *
*                                       *
*****************************************
```

```
 10 a$="Printer Driver II"
 40 MODE 6
 50 ESC=27
 60 PRINT''''a$
 70 INPUT'"Input pad character:"pad$
 80 areg=&90:yreg=&91
 90 FOR pass=4 TO 6 STEP 2
100 P%=&400:O%=&C00
110 [OPT pass
120 JMP print_char
130 JMP printer_on
140 JMP printer_off
150 JMP exit
160 JMP exit
180 .on EQUB 0
200 .print
210 PHA
220 LDA £1:JSR &FFEE
230 PLA
240 AND £&7F:JMP &FFEE
260 .printer_off
270 LDA £0:STA on
280 LDA £3:JMP &FFEE
300 .printer_on
310 LDA on:BNE exit
320 INC on
330 LDA £2:JSR &FFEE
340 LDA £ESC:JSR print
350 LDA £ASC"@":JSR print
360 .exit
370 RTS
390 .print_char
400 CMP £ASC pad$:BNE not_pad
410 LDA £32
420 .not_pad
430 CMP £128:BPL highlight
440 JMP &FFE3
450 .highlight
460 CMP £144:BCS exit
470 STA areg:STY yreg
480 AND £&7F:ASL A:ASL A:TAY
490 LDA table+1,Y:EOR £&80:STA table+1,Y
500 AND £&80:BNE here
510 INY:INY
520 .here
530 LDA table,Y:AND £&80:BEQ no_esc
540 LDA £27:JSR print
550 .no_esc
560 LDA table,Y:JSR print
570 LDA table+1,Y:JSR print
580 LDA areg:LDY yreg
590 RTS
610 .table
620 ]
630 NEXT
640 i=128
650 PRINT'"Enter highlight";i;"(Y/N)?";
660 IF INSTR("Nn",GET$) OSCLI"SAVE Driver C00 D00":END
670 INPUT LINE'" On:"a$
680 INPUT LINE "Off:"b$
690 !O%=FNcode(a$)+&10000*FNcode(b$)
700 O%=O%+4:i=i+1
710 GOTO 650
```

```
730 DEF FNcode(a$)
740 C%=0
750 I%=INSTR(a$,",")
760 C%=C% OR EVAL(a$)
770 IF I%=0 THEN =C%
780 a$=MID$(a$,I%+1)
790 IF C%<>27 THEN =C%+&100*EVAL(a$)
800 C%=&80:GOTO 750
```

DON'T FORGET TO TYPE EVERY "£" SIGN AS A HASH "#" !!

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========

```
Electron Computer .......... £20-00
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LIVERPOOL
L21 7PJ

===================================

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======

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===================================

WANTED! WANTED! WANTED! WANTED!
======= ======= ======= =======
Let me explain my need for ISO Pascal documentation. All I actually have is the Pascal ROM images, a book on Pascal programming and nothing else. What I know from my limited experimentation is that the ROMs comprehensively redefine the Function Keys and that an understanding of what-is-what is crucial to a successful application because certain Function Keys are mandatory. Therefore it is the keyboard overlay that I covet most, but the accompanying manual is also desirable. I solemnly and truly declare, as the Forefathers of Lord Acorn are my witness that any materials loaned to me would be treated with the utmost care (They can have the bed while I sleep down stairs sort of thing) and returned on time in as-received condition. It won't take more than a week to make the notes I need. Or if anyone is willing to sell the lot including ROMs I'm willing to deal. The way I feel now even a photocopy or description of the goods would just make my year.

Please contact:-

C. Chadwick, Swindon 0793 488020

===================================

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========

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======================================

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16 The Chestnuts
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Locks Heath
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======================================

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====================================

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****

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For more information contact:-
M. Graham on 081-847 0364
====================================

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====================================

BBC ROM COMPATIBILITY

By DEREK WALKER

Over the years people have written to magazines enquiring about the suitability of BBC ROM software when used on an Electron - and have not always got the right answers. Below is a list of BBC ROM's I have tried on an Electron with various hardware options. Included in the list are two Electron ROM's which have serious limitations.

BBC - Compatible
================
VIEW 2.1
VIEW 3.0
VIEWSHEET
VIEWSTORE
INTERSHEET
INTERCHART
WORDWISE
WORDWISE PLUS
GRAPHICS EXTENSION

BBC - Not Compatible
====================
INTERWORD
INTERBASE
PRINTMASTER
TOOLKIT
DISCDOCTOR
NOVACAD

ELECTRON
========
STARWORD
PRES +2

A few points about the software:

(1) VIEW 2.1 has scroll problems when used with a second processor. This can be solved with a software patch which can be found in Clive Williamson's book, "Mastering View Viewsheet and Viewstore". VIEW 3.0 gives 48k free space for text when used with a second processor.

(2) When using Jafa Systems Mode 7 Mk2, there is an option which allows the function keys to work in a similar way to those on the BBC. This means the functions are laid out in almost the same order as the BBC function key definition strip and lets you use "SHIFT cursor" and "CTRL cursor" to move around the text.

(3) INTERSHEET comes as a two ROM set, one labelled "INTERSHEET" and the other, "SHEET". The INTERSHEET ROM is not compatible, however SHEET used on it's own will work in any system configuration.

(4) PRES +2 v1.17 - I encountered problems with abbreviated commands such as *D. etc. A great deal of software is written this way and will crash if the PRES +2 is installed.

(5) STARWORD, although a very good word processor, lacks one fundamental feature. There is no paging facility and a great many trees will be lost when working with this piece of software.

Hardware configurations:
========================
Electron with Plus 1 and ROM cartridge, AP3/4, Master RAM Board Jafa Systems second processor and Mode 7 adaptor.
****

SIMPLE ADDRESS LABELS
****
Printing out address labels for correspondence is nothing new but to buy the special self adhesive labels, and setting everything up is time consuming and has a cost element.

It can be useful if one has to send letters to regular addresses whether it be to the club, the bank, or to members of the family, to have some ready duplicated address labels

With VIEW it is easy to type a label then to copy the block as many times as necessary, print out and cut the paper into individual labels. Much the same can be achieved from a simple BASIC program such as:-

```
10 VDU 2
20 PRINT"NAME"
30 PRINT"No. ROAD"
40 PRINT"TOWN"
50 PRINT"COUNTY"
60 PRINT"POST CODE"
70 PRINT
80 PRINT
90 GOTO 10
```

Similarly if one has written a letter, it only needs the printing of an extra top part of the letter to yield a label for the envelope.

Now there is nothing very clever in this, but it leaves the question of how to stick the label securely in place. I have found PrittStick - you know, the non sticky, sticky stuff - to be ideal.

I have used this method for several years and to my knowledge have not yet had a letter go astray.

ELKPAINT PROGRAM MODIFIED
****
I wonder how many readers have the ELKPAINT art program which appeared some time back in Electron User. It is quite good but lacks the facility to print out the screen.

It can be modified to incorporate a printout feature without much difficulty.

Firstly add the following to the end of line 80
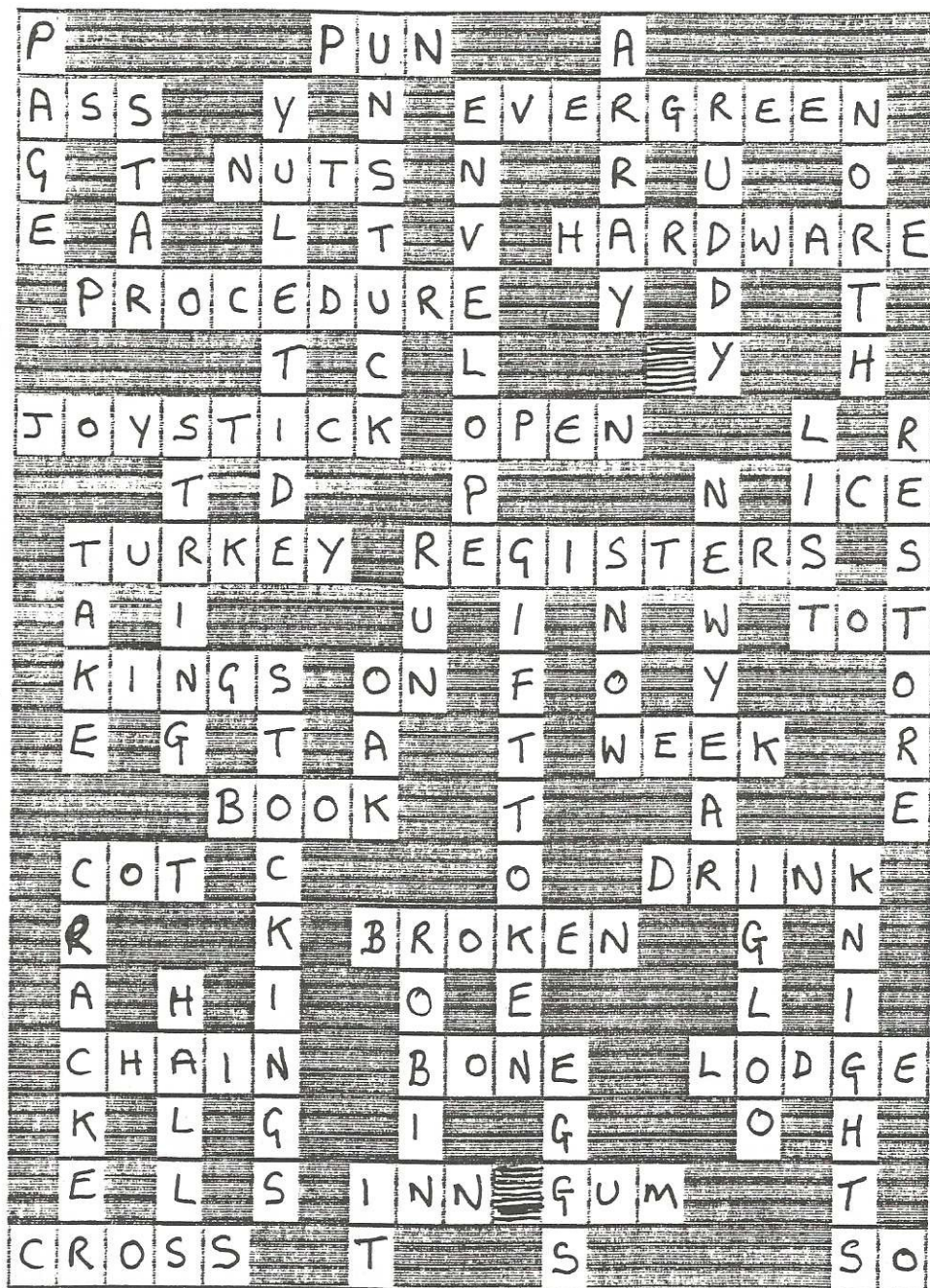
ELSE IF K% = 71 PROCprint

This means that if you press the "G" key it will call PROCprint.

Next, add the following procedure to the end of the program:-

```
1050 DEF PROCprint
1060 VDU 2
1070 *FX6,0
1080 *FX5,1
1090 *FX8,4
1100 FOR Y% = 831 TO 31 STEP-32
1110 VDU 1,27,1,51,1,24
1120 VDU 1,9,1,27,1,75,1,64,1,1
1130 FOR X% = 0 TO 1276 STEP 4
1140 A% = 0 : B% = 128
1150 FOR C% = 0 TO 28 STEP 4
1160 IF POINT(X%,Y%-C%)A%=A%+B%
1170 B% = B% / 2
1180 NEXT
1190 VDU 1,A%
1200 NEXT
1210 VDU 1,10
1220 NEXT
1230 VDU 3
1240 ENDPROC
```

It is a good idea to save the screen BEFORE printing as it cannot be recovered afterwards.

A further tip ... by placing a sheet of transparent plastic in front of the screen, any picture traced onto the plastic can then be followed to compose the same picture on screen.

```
P           P U N           A
A S S     Y     N   E V E R G R E E N
G     T     N U T S   N   R   U       O
E     A     L     T   V H A R D W A R E
P R O C E D U R E       Y   D         T
      T     C     L       ▨   Y       H
J O Y S T I C K     O P E N       L   R
      T     D     P       N       I C E
T U R K E Y     R E G I S T E R S
A     I     U     I   N   W     T O T
K I N G S   O N   F   O   Y       O
E     G     T     A   T   W E E K     R
      B O O K     T   A       E
C O T     C       T   O     D R I N K
R     K     B R O K E N     G       N
A     H     I     O   E     L       I
C H A I N   B O N E       L O D G E
K     L     G     I       O         H
E     L     S     I N N ▨ G U M     T
C R O S S   T     S           S O
```

****

NO CROSSWORD IN THIS ISSUE

I'M AFRAID, BUT HERE ARE THE

SOLUTIONS TO THE LAST ONE!

WOULD ANYONE ELSE LIKE TO SEND

A   PUZZLE,   CROSSWORD   OR

OTHERWISE ?

****

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****

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T.B.A.T.B.

Well, having hung on until the very last moment in the hope that my printer would be repaired in order that STOP PRESS 64 might be used to produce this issue, I've learnt a valuable lesson. "ALWAYS HAVE AN ALTERNATIVE PLAN OF ACTION!" I am working on Issue 4 as you read this and I'm determined that one way or another, the next mag will go out ON TIME! So expect it no later than mid-April. To this end, could you please send ANY contributions you may have BEFORE April please!

On the subject of submissions, I think past requests that all contributions be sent on tape or disc was a bit inflexible so scrub that. Send your articles on paper as a print out or in your very best hand writing - the easier it is to read, the faster it can be typed! Having said that, it would still be an advantage to receive actual PROGRAMS on tape or disc (3.5" ADFS) rather than as a listing!

Some people have written to say they are a bit peeved with having to send a one pound cheque for every issue and that a block subscription might be a good idea - a few have even sent advanced payments already! Personally I don't mind how you pay, issue by issue or one lump sum, but could all those who would prefer to pay in advance, please hang onto their cash for a little while longer. We're getting to the point where we may have to look elsewhere to get our photocopies done, and until we get all the quotes in we won't know if subscriptions will stay the same or go up - with luck the latter will NOT be the case!. We plan to tell you of any changes in the next issue.

Another question that keeps cropping up is WHEN IS EUG GOING TO SUPPLY SOFTWARE ON TAPE OR DISC? This really requires a 3-part answer:-
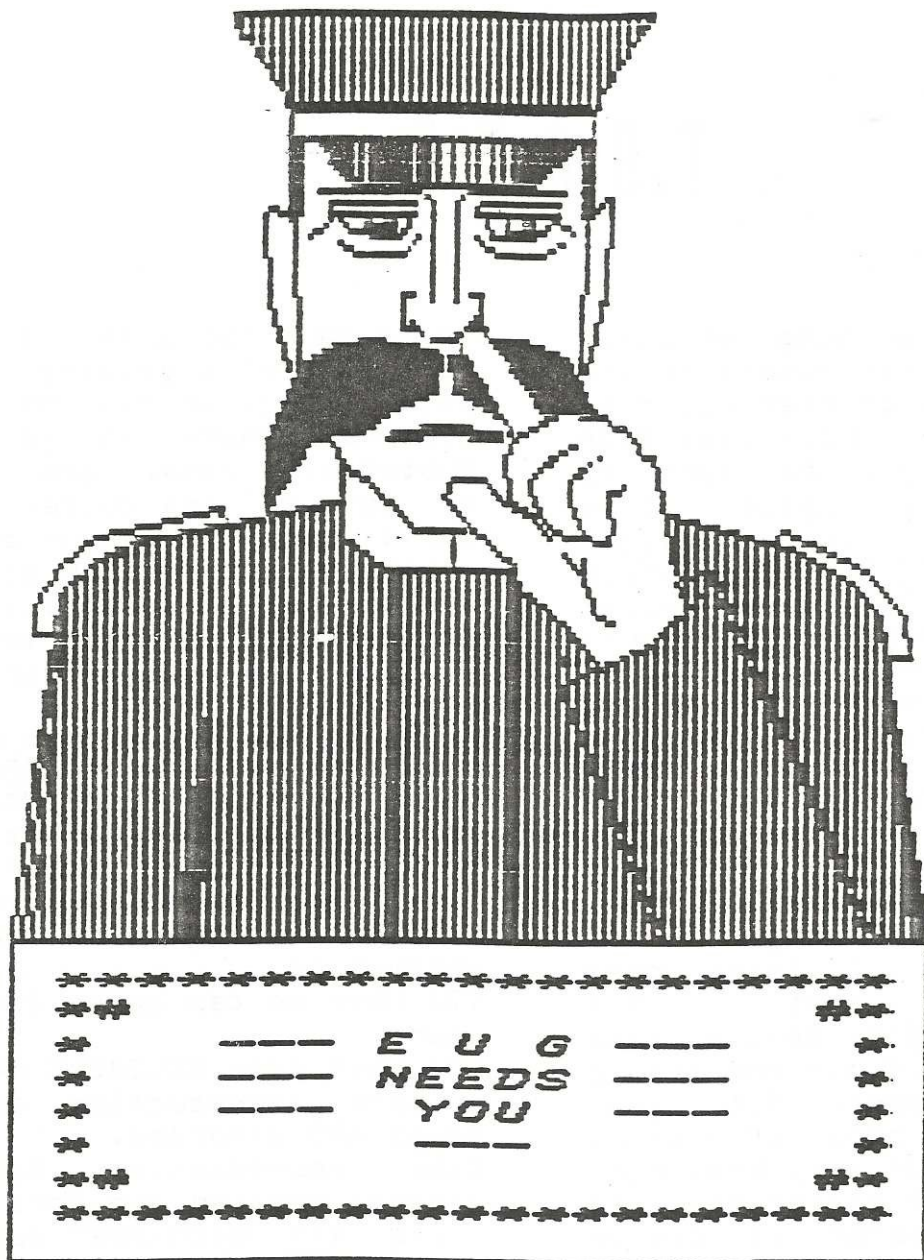(1) When there is enough ORIGINAL software to make it worthwhile,
(2) When we can cater for DFS users,
(3) When some RELIABLE method of tape reproduction can be found AND afforded.
Tape reproduction is the biggest problem and "one tape suits all machines" quality may only be available commercially. We're looking into it.
That's it! I'm off, so goodbye for now!

ISSUE 4 AVAILABLE MID- APRIL.- £1-00 PLEASE MAKE CHEQUES, P.O.'s PAYABLE TO W. WATTS

```
********************************************
**#                                     #**
* *    ---   E U G   ---               *  *
* *    === ==  NEEDS  ===              *  *
* *    ---    YOU    ---               *  *
* *           ---                      *  *
**#                                     #**
********************************************
```

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