SORRY!- The blank spaces in front of the 'M's in the listings on page 5 should be the control key associated with the function keys (the key immediately to the left of the 'left cursor key').

LATE ITEM : COM-TEC, 6 Eastgate, Barnsley now offer a 5% discount to members. Please show membership card to obtain discount.

NEWSLETTER 13
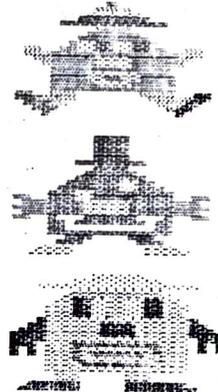
ABUG

ACORN & BBC
microcomputers
USER GROUP
Sheffield

FEBRUARY

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March 7th	(Farfields)	Social
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May 16th	(Park Baths)	Annual General Meeting & Buggy demonstration by Economatics

Following last month's article on RAM extension boards, a bulk order was sent to Solidisk who finally gave a 15% discount. We have requested a discount for any future individual orders and we will give details, if successful. We also asked to be kept informed of all their developments associated with the BEEB.

One further interesting device for handling sideways ROMs has appeared this month, which for some people may solve the problems in a more attractive way. It consists of a low insertion force ROM socket mounted outside the case, in the 'ashtray' to the left of the keyboard. ROMs can be kept separate and inserted as required. This overcomes the problems of overheating, mutual incompatability of ROMs and tedious access to the ROM sockets, but does not extend the number of ROMs available at any one time. Nonetheless, this may be a better option than the RAM board for people without discs. It is produced by TOAD EDUCATIONAL COMPUTING and cost £19.99.

Attention is drawn to the Annual General Meeting in May, when all the committee for the coming year will be elected. Anyone who is interested in any of the positions should take the opportunity to find out what is involved from the present committee. The current structure of the committee is; president, secretary, treasurer, librarian, events organiser and newletter editors (2). Next month's newsletter will include a nomination form, to allow a full list of nominees to be published at the A.G.M.

This month's front page design was produced mainly using the '*PRINT' command in the Graphics Extension Rom, reviewed last month.

Finally, we would like to thank Paul Leman for (at short notice) speaking tonight.

Discs

The supply and sale of discs is now well established, but unfortunately the costs of the double-sided discs is slightly more than we reported last month. The price for individual discs remains at £2.50, but the price for a box is now £22.00.

Sales and Wants

With the advent of RAM boards several ROM boards are becoming surplus to requirements. Two members, Mike Robinson and John Fryer, have ATPL Sidewise boards for sale. Please contact them directly.

Wordwise Tips

When using Wordwise for large documents, the paging command is a very useful feature. Page numbers can be included within the heading (or footing) of each page and automatically incremented with the following sequence of commands.

<f1>PN1<f2>
This sets the initial page number to 1.

<f1>DH<f1>CE<f1>PP<f2><return>
This sets the heading to consist of the current page number centred on the current line length.

<f1>HS3<f1>HP1<f2>
This sets the heading to consist of three lines and places the page number on the

second. Remember that the heading lines are numbered 0,1,2....

One point, not in the manual, is that the 'PN' command must precede the other commands or else the page numbers appear to be incremented only once.

A problem that occurs only rarely but can be very frustrating is that the number of embedded commands which can be included in one line of printed text is limited. In normal usage this limit would never be approached (around twenty commands per line), but when formatting text containing many super-scripted and sub-scripted characters, as in mathematical or chemical equations, the limit can easily be exceeded. There is no solution to this problem other than to be aware of the limitations and work within them.

Broadcasting Support for the BEEB

The TELETEXT Adapter from ACORN commenced deliveries last September and transmissions of programs started on 1st October. These were mainly directed towards school use and in many cases were already in the hands of schools in Sheffield through education channels. Something like 40 programs had been sent out by the end of the year and this included a few games specially put out for Christmas. The selection is changed fortnightly and will include a page of offerings from viewers who will be rewarded with the gift of an "exclusive" sweatshirt. By this means BBC hope to attract suitable programs which otherwise they appear not to have the funds to buy. Since 6th Feb. some of these programs have appeared and are of good quality.
The TELETEXT adapter works well and the only need is a reasonably robust signal which MUST be clean. The writer uses BELMONT and this serves well except under bright summer skies when a signal booster proved helpful. Initial difficulties seemed to be due to typing errors in re-coding the programs but BBC apologised and said they had changed the "software" that did this (poor girl?).
A recent development is the transmission of CHIPSHOP, a magazine programme on Radio 4 at 5pm on Saturdays repeated on Tuesdays at 11pm(VHFonly), covering a wide review of computer applications. These are followed by the transmission (at 00.23 hrs four nights per week) of actual computer programs in BASICODE on sound (1200 baud) which can be recorded and subsequently loaded into your Micro by means of a special program (obtained from BBC) which prepares the computer for the translation of the broadcast signal. This can be applied to most popular makes of Micro except for Spectrum which will follow in March. Apparently the Dutch pioneered the service in 1979 (it is said that 46% of their computer owners make use of the service) and other countries followed and perhaps we are rather late in taking it up. The programs (seen on TELETEXT) so far seem rather limited, no graphics or colour, but we shall have to wait and see. BBC seemed surprised at the immediate response from listeners (in excess of 37,000) for the CHIP SHOP KIT (£3.95) without which the programs cannot be loaded.
The CHIPSHOP programme itself is interesting and tries to cover a fair amount of ground. For instance the first one included an item on legal protection for young Computer Program writers who, it was suggested, were being ripped off by (some) distibutors. A draft agreement was offered and the writer has a copy.
Jane Bird, Editor of PCW, is a regular contributor and usually includes a brief review of new Micros. Further details from.... FACTSHEET, THE CHIPSHOP, B.B.C., LONDON W12 8QT with a 21p.self addressed A4 envelope.

MICRONET. According to 'Electronics & Computing', so far there are 6000 members of Micronet, a number which should be compared with their 'special offer' to the first 10,000 just a year ago. Set against the estimate of 2 million micros in U.K. this must be considered a poor response.

HOMELINK offered to investors in Nottingham Building Society (who have at least £1000 in

their account) has been available since last August but it is not known what progress
they have made. Further information is available from the Club or from Branches of NBS.

Both these services are extensions of PRESTEL (35,000 subscribers) but one serious
drawback is the fact that calls from Sheffield are still charged long-distance.   A
data-link to make this a local call was promised "by Christmas" but the latest word is
that it will be another two months before work is completed.   Meantime HOMELINK enjoys
a rebate scheme which reduces all calls to local rates but not so for MICROLINK.

Henry Brook

Tape to Disc Transfers

With the marked drop in the cost of disc systems over the last year, these are becoming
more common.   However most people rapidly realise that discs often create as many
problems as they solve.   The major problem arises because programs which run quite
satisfactorily from cassette do not work at all when transferred to disc.   There are
several reasons for this failure, and there is no single soloution.   Over the next few
months, we will attempt to explain some of the problems and suggest ways in which they
may be overcome.

By far the most common cause of program failure is lack of memory.   On a cassette-based
system, some RAM is used by the operating system, the basic interpreter and the CPU
itself as workspace, and the first available memory location is at &E00.   On a disc
system more RAM is needed for the disc directory and file buffers, taking a further 3.5K
of memory and making the first available address &1900.   Many programs, especially
those using higher resolution graphics, use all the memory available, and when loaded
from discs without modification, overrun the screen memory (the start of screen memory
is dependent upon the mode selected and is indicated by the variable HIMEM).

In addition, some programs fail because they use (illegally) page &D00 and others
because they are deliberately protected by the software distributors. Although
software writers are understandably anxious that copying their programs should be as
difficult as possible, it is unreasonable to expect disc drive owners to run commercial
software from a cassette or to pay for a disc version of a program that they already
own.   Acornsoft, to their credit, are leading the field in this respect, in that they
are offering all their software on disc and a cassette upgrading service (albeit at a
considerable cost).

This month we will give details for transferring one part programs and next month we
will begin to look at the much more difficult problem of multiple segment programs.

The easiest situation to handle is a single Basic program.   This may transfer directly
merely by 'LOADing' from tape and 'SAVEing' to disc.   It is important to remember the
limitation of seven characters for a disc filename.   If the program will not run it
worth trying to LOAD the program from disc with PAGE set to &1100.   The disc system
only uses space from &1100 to &1900 for buffers, and if the Basic program has no
file-handling commands built in, and was only slightly too long, then the program will
run satisfactorily.   In fact this procedure works for the majority of Basic programs.
If this does work is it easiest to write a little program to handle the loading for you.
   For instance;
                            10 PAGE=&1100
                            20 CHAIN"program"

If there is still not enough room then the only recourse is to load the program from
disc, disable the disc system with *TAPE, and then relocate it to start at &E00.   There

are many ways to do this but by far the most elegant is to use a little routine which loads one of the function keys with the relocator and then calls it from within the program, and finally deletes the entire routine.

```
      1 *KEY0 *TAPE MFOR I%=0TO TOP-PAGE STEP
4:&E00!I%=PAGE!I%:N. MPAGE=&E00 MOLD MDEL.1,3 MRUN M
      2 *FX138,0,128
      3 END
Rest of BASIC program.
```

Line 1 sets up function key 0 to select the tape system, relocate the program to &E00 four bytes at a time, reset PAGE to &E00, reset Basic pointers with OLD, delete itself and then run the original program.
Line 2 then tranfers all these commands into the keyboard buffer.
Line 3 ends this program and takes in commands from the keyboard buffer.

These three lines should be added to the existing program (renumbered if it contains line numbers 1-3).

The other relatively simple situation is where the program consists of a single machine code segment (it has to be *RUN rather than CHAINed). First it is necessary to find the LOADing address by typing *OPT1,2 and then loading the program from tape. The address required is the third number after the filename. You also note the length of the program (second number) and the execution address (last number). If the load address is less than &1900 then it will not run from disc and it will be necessary to use an extra program which will load and relocate the program. A suitable example is;

```
      10 *KEY0 *LOAD prog 1100 M*TAPE MFOR I%=0 TO
1111:xxxx!I%=&1100!I%:NEXT MCALL&yyyy M
      20*FX138,0,128
      30END
```

1111 represents the length of the machine code program, xxxx the load address and yyyy the execution address, all obtained when the program was loaded from tape as above.
This segment works in an exactly analagous way to the previous program, but for very long programs can be rather slow. A more sophisticated way is to use a machine code relocator which is much faster but requires a third program to be stored on the disc - a distinct disadvantage on discs which only allow 31 files. The procedure is to write a program PROG1 which consists of the two lines;

```
      10 PAGE=&6000
      20 CHAIN"PROG2"
```

This places the relocator into a safe location in memory which will be used by the screen when the program is run but which is not used by MODE7. PROG2 then consists of;

```
      10 DIM S% 40
      20 PageCount=(&1111 DIV 256)+1:P%=S%
      30 *LOAD PROG3 1100
      40 [OPT 0
      50 LDY £0:LDX £PageCount:.Loop LDA &1100,Y:.Loop1 STA &xxxx,Y:INY
      60 BNE Loop:INC (Loop+2):INC (Loop1+2):DEX:BNE Loop:RTS:]
      70 CALL S%
      80 CALL yyyy
```

It is important to remember that programs which have been relocated with these methods no longer have access to the normal disc filing system, so that PINBALL for instance can only store its layouts on tape even though the program runs satisfactorily from disc.