THE EASTER PARADE

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   PCW FILE INTERNATIONAL                       CONTENTS
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8 Page insert on Public Domain
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                BACK ISSUES
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WELCOME. I'm sorry we are later than usual but due to reorganisation
plans it was impossible to make the deadline.

Membership cards

We are currently looking into issuing membership cards but the
companies we have so far looked at are a little expensive. As we are
after Plastic Cards and not paper ones. More details in PCW File next
month.

Readers Survey

It is time to ask you what you would like out of your user group. You
will find a readers survey for you to fill in. I ask every member to
fill it in, as we intend to store your answers on a database. The
more people that fill it in, the more we will be able to help you
enjoy your membership and try to produce a magazine which you are
satisfied with.

PD Catalogue

In June's edition of PCW File there will be a 24 page pull-out giving
you full details of all the Public Domain software which is
EXCLUSIVELY available and absolutely FREE (except SAE) through PCW
File. Remember to quote your membership number when you send your
discs to one of the PD librarians. For the time being details of new
discs will be given with the PD Pull out every month.

Reward for services rendered

Don't forget our new scheme for you all to vote for your favourite
piece in PCW File. What you do is simple, just select up to three of
your favourite articles giving them a total of 10 points. You might
only like one article; so give the 10 points to that one. Send your
entry on a postcard (or back of an evelope) to the editiorial address
(don't forget you own membership number and address), also write the
relevant month and issue number which is on the front cover. The
person who wins will receive £10.00 and everyone who takes part will
be entered into a draw for £10.00! The winners and details will be
announced in two issues time. So even though people who tell me that
they cannot take part in PCW File, can tell us what article they liked
the best.

Ed makes local front page Headlines

As part of our publicity campaign for East Devon and West Dorset we
appeared in the Midweek Herald which is a local based FREE newspaper
in Sidmouth. You must have heard of Sidmouth, thats where the Folk
Festival takes place every August. The headline was **'FROM OVEN READY
CHIPS TO SILICON CHIPS'**. So can you guess where I work? Any one who
would like the article should send a SAE.

Once again we have run out of space - could go on forever but I am
sure many of you would fall asleep! Don't forget to send in the
questionaires; as we can only help you if you help us first.
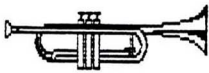
NEWS-FILE
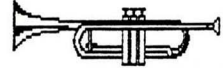
THE AKADIMIAS TUTOR SERIES

As you will all know there is currently very little serious educational software available on Amstrad machines, especially in the 'A' Level and undergraduate areas. The addition of 30 new titles from Akadimias should be welcome news to Amstrad users.

The Akadimias tutor series is a text based multiple choice test system intended for use by A level students and undergraduates. This material has not previously been available to the domestic market though it has been widely sold to schools and colleges through Educational dealers and direct from Akadimas.

There are currently 30 titles covering the major periods of British and European History, English Literature Set Texts, Sociology, Economics, Genetics and Physics. New titles are in preparation and we hope to introduce a GCSE series during the coming acadimic year.

The Amstrad PCW versions are £21.45 inclusive.

We are able to offer a discount of 10% for orders of two or more titles on one invoice.

For further information contact: John Illsley
                                    University College of North Wales,
         Dept of History, Bangor, Gwynedd LL57 2DG (0248) 351151

PARISH ROLLCALL

Parish RollCall is a database program which has many useful features for the vicar who has a PCW or a PC. It is menu driven, comes with a fully illustrated and laser printed manual, extremely fast - they tell me that it will find a record from a random collection of 1,000 names in approx one second. Some of the other features are Mail-merging, search and sort files and produce listings of magazine distributors and customers in alphabetical or postcode order, renewal dates of customers, how they renew etc.

Prices are £10.95 for a demo version (limited to 50 records only) and £99 for the complete RollCall.

For further information contact: Data Developments
             PO Box 67, Wolverhampton WV10 9HG (0902) 787409/788207

RETURN TO DOOM

RETURN TO DOOM is the follow up to 'Countdown to Doom'. Peter Kilworth the author of the program thinks he has come up with the best game yet, bearing all the hall-marks of the killworth legend: prose (long/short options provided) that reads like a novel, puzzles, with, of course, the ever present threat of running out of time in Doom's corrossive atmosphere ...   Price £9.95: Release date End of March

Further information available from: Topologika,
             P.O.Box 39, Stilton, Peterborough, PE7 3RL (0733) 244682

Mailbag

==
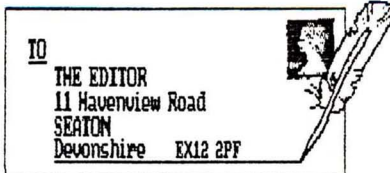
30B Falmouth Road,
London.
SE1 4JQ

Dr Logo

In Vol.2 Issue 1 of PCW File Tony Reese follows up my own earlier comments on Dr Logo by suggesting I might be persuaded to 'share my knowledge' of Dr Logo primitives. I hope most people will have seen the Dr Logo chart by John Connell in the centre pages of the December 8000 Plus, which (with the letter from me in the February issue of the same magazine) seems to cover pretty well the subject of what Logo primitives do; how to make use of them is another matter entirely, and the articles on Logo that are at last appearing in the various magazines seem to be rather repetitive.

Personally, I've enjoyed puzzling out for myself the functions of all those Logo commands listed on page 19 of the Amstrad manual   I finally solved 'piece' the day after I'd written to PCW File mentioning it as one I'd got stuck on! It's an intellectual exercise rather on a par with solving crossword puzzles, and probably of as much practical use in the long run! Having all the answers in front of you would spoil the fun.

However, in case anybody out there is interested, what I have done is put together an on-screen 'help' program for Logo written in Logo, of course which can provide a brief description of the function of each Logo primitive on demand, or alternatively list all those related to a given subject. It has its drawbacks, some of which may be due to Dr Logo, others to my inexpert and amateur programming; on the other hand it demonstrates some things that Logo does rather well. I'll be happy to provide a copy of it to anyone who sends me a blank disc, with stamped and addressed packing for its return though following recent comments in PCW File I should make it clear I can't guarantee same day dispatch, nor accept any liability for failings of the postal service! Nor am I offering a telephone helpline!

                                                                John Clark

Feldeggstrasse 74,
CH-8008 Zurich
Switzerland

D.K.TRONICS AND THE JOYSTICK/SOUND MODULE

I recently wrote to D.K.Tronics (which sadly decided to go bust) about the programmable joystick interface and sound module. My letter to them is unlikely to elicit much of a response. I therefore wish to turn the problem public - seeing that the D.K.Tronics unit is meant to be fully programmable, and could potentially be used as an interface, has anyone got around to writing some software for it to emulate some of the other input devices currently available, or at least find out the required i/o parameters so that we poor orphans can have a go at it ourselves?
                                                                A.U.Pfister

75 Osborne Park,
Belfast
BT9 6JQ

Missing sheet/ Price Rise

It may be a surprise for you to hear that someone doesn't read PCW
File from cover to cover almost before it lands on the floor behind
the front door! That unfortunately sometimes happens with me, as it
did with vol 1: issue 4 (Oct/Nov 87), when I skimmed through it and
set it aside for a more careful read later on. It then became
incorporated in my horizontal filing "system", and has only just
surfaced again in the great Sort-Out. I now find to my surprise and
disappointment that there is a sheet missing - pp 3/4, 29/30. Please
send the missing sheet by return of post. Having got daisy-wheel to
paper in your direction, may I congratulate you on the content of PCW
File. It caters well for someone with my interests and at about my
level of expertise. However, when I read that you intend to publish
monthly and consequently put up the subscription, I am concerned that
you may be trying to expand a little too quickly, as the price
suddenly doubles and becomes (say) 20% higher per year than most of
the national "glossies". Members will make the comparision, and there
is a real danger that some will not want to, or may not be able to
afford the rise and will be lost to you.

                                                        Harry Gilmore

Welcome Surprise

What a welcome surprise to see that PCW File is slowly expanding and
starting to offer more than just cheap P.D. Software on the cheap.

For my part, more technical articles are needed in the now monthly
magazine. Like HOW TO BUILD YOUR OWN RS232 INTERFACE.

                                                        Gerry Austin
        7, Deeley Close, Cradley Heath, Warley, West Midlands. B64 7NF

The editor replies:

It is so interesting how two minds think differently. For example
when do you choose to expand - the group has been going over a year.
As for PCW File being 20% more expensive then the glossies so we must
compete on the same level. I can't agree; for one we don't fill ½ our
magazine with colour adverts so we have not got the fiancial support
or the backing of many of the companies which also sadly includes
Amstrad.
===

GET YOUR FRIENDS TO JOIN PCW FILE INTERNATIONAL!

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6 Duchy Drive,
Heaton
Bradford,W. Yorks
BD9 5NL

Public Domain - Private Property

PCW File has as one of its attractions a free-to-members Public Domain
Library. This library is compiled of programs that were written by
generous people who were eager to share their work, ideas and time
with others.

PCW File has accepted that tradition gladly. It regularly, at no
charge, often by return of post, copies and returns discs and
software. Not all organisations however operate on such open and
generous principles.

In response to an advertisement in one of the monthly glossies I sent
off for "free membership" to an "Expanding PCW User Group": THE MIRA
GROUP. They knew that I belonged to the team of bodies who copy discs
for PCW File as I requested them to speed up my application when I
returned some of the half-dozen or so discs that I have copied for
them.

In mid-February I received a letter from THE MIRA GROUP, under the
name of a Mr A.D.Waring, refusing my application to join. Mr Waring
pointed out that <u>they</u> were "somewhat reluctant to process (my)
application ... not that they had anything against 'PCW FILE' but
because I (or we) was a ""COMPETITOR"".

What do THE MIRA GROUP have to fear? Where is their public spirit?
What has happened to the spirit of the Public Domain?

Mr Waring hopes that (as <u>they</u>) "have decided to refuse the
application" that I "will understand".

Sorry Mr A.D.Waring, I do not understand. It seems to me that you
have the wrong attitude to the whole dimention of the Public Domain
and the community of PCW users. Surely we are here to help each
other, that is unless your "free membership" is a cover for business
activities and a means for profit.

I would be interested to hear from any member of PCW File who has
succeeded in joining the "Organisation" and has had communication with
them.

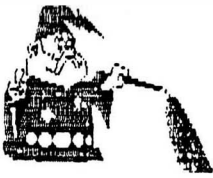**Editor:** I can't comment at this stage but for readers information Bob
Ellis & David Axford have successfully joined The Mira Group.
===

WHEN REPLYING TO ADVERTS

PLEASE MENTION PCW FILE INTERNATIONAL
===

HINTS AND TIPS

Keyboard protection for the PCW

My PCW8512 sat in the corner of my clock-restoring workshop, where I used it for my business needs (letters, reports, invoices, accounts, etc.), and also for personal correspondence and recreation. In this environment you will appreciate that there can sometimes be a certain amount of dust and often there are oily, dirty fingers. It was too inconvenient to wash hands every time a short use was made of the PCW, so I have found the Kado keyboard cover a very useful accessory. However it cannot be denied that some of the "touch" is lost in its use, so when I bought a new PCW9512 and was wondering what to do I suddenly thought of domestic cling-film. I have put some over the keyboard, stretched not too tightly, and am very pleased with the result. Admittedly it may not be complete protection against a flood of hot coffee (and I am not willing to put it to the test), but much less of the feel is lost, and the film can be quickly replaced as necessary (although it hasn't yet been replaced in five months). I would therefore recommend this idea to other readers whose PCWs live in similar hostile environments to my own.

Disc copying on the PCW9512

(Which may also apply to the PCW8512 with LocoScript2 + LocoSpell)

I set up my new PCW9512 last October, and immediately suffered a disappointment. When I proceeded to copy a master disc, I found that it required seemingly interminable disc-swapping - six parts, ie six insertions of each disc into the drive. I was about to post my "disgusted" letter to Amstrad when the solution came to me in a flash of inspiration - I erased the 160K file LOCOSPEL.DCT from the M-drive, and eureka - the copying could now be completed in three parts! As I have much more concern and need to keep my discs regularly backed-up than for spell-checking, I have made a working LocoScript start-up disc without inclusion of the dictionary, which I shall store elsewhere for when I have special need of it. An alternative might be to erase the dictionary from the M-drive if you want to make disc copies.

A precautional note on 720k discs:

Having changed from a PCW8512 to a PCW9512 and reformatted several single density discs to double density for use with LocoScript2, I have found that the disc name on the second side remains not erased, and also the display (even if there had been no name) continues to indicate "0k used 173k free". In order to avoid any danger of mistaking this side as as genuine empty single density I now rename this side "TURNOVER" before reformatting. The only way that I have found to completely obliterate this anomaly is to first format side 2 as DD, and then format side 1 for the required result

A bargain in PCW9512 printer ribbons:

It would be a service to advise members that Midas Software (on 0245-461946) supply suitable carbon ribbons @ £2.99 incl VAT/P&P, compared with the official Amstrad brand available at prices up to £4.90. This letter has been printed using a cassette from Midas, which although superficially of different appearance, seems to be of equal quality and length to that of Amstrad. I would personally like to hear of a continuous or re-usable ribbon cassette (or a method of re-winding), for there is obviously enough life remaining in these plastic ribbons for at least a second use.

Jibberish printing from the PCW9512

I was so fascinated with the operation of the daisy-wheel printer when I first used my new PCW9512 that I took out the print wheel to examine it more closely, and then put it back again. The next time I used the printer everything was OK. However, I later took out the wheel again to show my wife, and after I replaced it - as I thought correctly - the printer began printing nonsence characters. Several more attempts to replace the wheel and print produced the same result, and I described the problem to my dealer, who wasn't able to give me an immediate solution. Eventually I discovered myself that the spring-loaded lever retaining the printwheel needs to be _pushed_ forward (not just released) to be certain that the wheel will engage correctly.

Slewing tractor-feeding on the PCW9512

For those who have become so accustomed to the PCW8256/8512 printer it should be noted that when using a PCW9512 daisywheel printer with tractor-feed you must have the paper release lever _pulled forward_ (in the "release" position), otherwise the paper or labels will very quickly slew sideways. This is clearly stated in the Manual (on page 18, item 5), but then who reads all of a 624 page manual when you think you know enough of the parts you need to know already!

Quick cursor on LocoScript2 menus:

For those who have not found out, it is possible to travel directly to the bottom of a LocoScript2 menu by using [SHIFT]+[CURSOR DOWN]. This is particularly useful for "Print document" when you only want to "Print part of document".

Re-naming files in LocoScript2

If you use "f3 - Rename file" you are presented with a blank space, and have to completely re-type the filename, but if you wish only to make a small adjustment you can "f3 - Move file" to the _same_ group, and then edit the existing filename to your new requirements.

Harry Gilmore
75 Osborne Park, Belfast BT9 6JQ

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DON'T FORGET TO SEND IN THE QUESTIONAIRE!

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========================================================================
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Using the PCW 8256/8512/9512 and Locoscript 2

IN A BOUND BOOK both sides of the paper are used, and even numbered pages are printed on the reverse of odd numbered pages. If using the PCW continuous paper is preferred, to overcome the tedium of feeding single sheets, especially if many copies are required of a multipage document. Locoscript 2 makes no provision for printing either odd or even numbered pages only in sequence.

Various methods are available to overcome this problem, but all rely on transfer of pages by the block method (Manual, p 72,143,269)*, so that all the odd and even numbered pages are in two separate groups, consecutively arranged; e.g. 1,3,5,7 etc., and 2,4,6,8 etc. Then printing is done on one side using the first group, the paper turned over and the second group printed - taking care to ensure that the registering of the paper is correct, so that the sides are exactly opposite. Note when printing multiple copies (manual p 56) one copy of all the pages selected is printed before going on to the next copy. Especial care must be taken with three items. First, the text must be fully edited before rearrangement - otherwise carry over between pages could occur resulting in confusion. Second, before rearrangement the 'form-feed' character must be at the very end of each page, again to ensure no carry over takes place. This character is obtained by keying ALT + RETURN - see manual p 165 - and has the affect of forcing a new page to be printed. Third, page numbering can no longer be automatic using the header or footer zones (manual p 171). If page numbers are to be printed they must be inserted one by one, manually, at the foot of each page. To do this requires that the header or footer space must be present when creating or editing the document - see page layout, p182. After rearrangement into the odd and even groups, the header/footer space for page numbering must be deleted (p 182) and the appropiate page numbers inserted manually in the space so obtained. The 'form-feed' character must still be the last thing on the page!

Variations of the arrangement method are possible, all using block transfers. First (and believed to be the safest and quickest) is to copy the text to a new file called ---.EVE. Then 'form-feed' characters and page numbers are added as described above. Next the odd numbered** pages are copied to blocks, and cut from the ---.EVE file. These blocks are then pasted to a newly created file called ---.ODD. The details are described in the manual p69 et seq. Printing of each file is then carried out on opposite sides of the paper. If more than 20 pages are involved the operations described must be repeated. The second is to create a file as above, but this time call it --.TEM. Next, put the even numbered pages into blocks and transfer to the end of the docuement. Printing of each half of the file is then done on the opposite sides of the paper. In both cases the editing operations can be carried out using the M disc if space is available, for speed, and only the final results copied to the A or B disc.

Notes: * Page numbers refer to the Locoscript 2 Manual for the 8256/8512.
       ** The actual page numbers of the text , not the page number shown at the top of the editing screen.

<div align="right">David Newby,</div>

Newhouse Farm, Oakley, Diss, Norfolk. IP21 4AP

MASTERFILE 8000 - Database Program

I used to use this program in the early Eighties, on the Spectrum.
The publisher, Campbell Systems, had a good reputation for service
then, and it has been my experience (and that of others, to judge by
the correspondence columns in other magazines) that this has been
maintained.

When I saw that a version had been produced for the PCW, it had to be
purchased right away. The main advantage of this, as opposed to many
other databases is that field lengths are not fixed, and therefore
take up a minimum of memory. Other plus points are lauded in
advertisements and reviews (see 8000+, March 87; Computing with PCW,
July 87 or APC, June 87) my (self-appointed) brief is to acquaint you
of the shortcomings that I have found.

Some Problems:

1. I bought version 1.00. Beware, folks, this has a bug lurking in
it, in that it locks up on trying to save an updated version of a
file, leaving you with not one but **two** irretrievable versions of that
file. Make a backup copy, I hear you cry. I had but, not realising
that it was the program, and not the disc, that was at fault, I fouled
that up as well! Version 2.1 seems to work O.K.

2. The 'calculate' function is not too well documented, in fact it
isn't mentioned at all in the manual (first edition), though there is
a READ.ME file devoted to it on disc. In practice, in order to force
the program to do a calculation one has to enter a formula as a
'Heading Text',

eg. [14]=[13]*1.15
where field 13 is the non-VAT price, field 14 would be the price
VAT-inclusive.
Moreover,(a) the formula must be entered in the format (or 'layout')
which contains field 14 and (b) if field 13 is itself the result of a
calculation, this must have already been performed.

3. The word RELATIONAL appears in large letters in Campbell's
advertisements, though it must be said that this is correctly
qualified.

As an ageing veterinary surgeon, my requirement was for a database for
scientific references, amongst other uses. However, I had found in
the past that Reference, Author, Title was insufficient and I had to
add System, Discipline, Species to avoid looking up irrelevant
references. One year's records form a 60K file, and records go back
5+ years. Hence, problems with space in memory, let alone drive A
discs. Now, the most recent references will be likely to be more
important than older ones, given the exponential increase in knowledge
so, how to access files in sequence, using the 'relational' facility?
Answer is, according to my best endeavours, you can't! (This is
confirmed by Campbell Systems). The reason is that everything is held
in the M drive but you cannot tell said drive to erase what is there
to make room for new data called up by use of look-up files. Big
shame.

4. The only way to avoid problem 3. is to load another file. This erases whatever is in M drive. In order to retain it, (if you wish to compare data from two **completely compatible** files) you have to MERGE the files. This process is as slow as some of LocoScript's functions, for a large file.

5. You cannot sort by multiple conditions directly ie. in Search mode, you can't type, "London; credit < £0-00" and get all slow payers who live in London. It can be done, and quite easily, but there are times when my knowledge of Boolean logic, 0, lets me down.

6. Although lines thick/thin/dotted can be drawn on screen, these are not reproduced on printout, nor is double size text, nor inverse text.

7. [A niggle] If you ask MF8000 to search the records in a field 'town' for 'London' the expression is town=London. This will not retrieve Londonderry. If you wish to retrieve both London and Londonderry, ie. to retrieve the **string** London, the expression is **not** town=(London) but (town)=London, which does not seem logical to me.

Having said all this, I am pleased with the program. It is fast, it does make good use of memory, you do not have to commit yourself to fixed field lengths and each changed file always has its previous version retained, as filename.MFP, analogous to .BAK in some programs. Current file is .MFC. There is space on the disc to make it self-booting (*.EMS; PROFILE.SUB; SUBMIT.COM) if the example files are deleted.

Disc Doctor

Having suffered a mishap with a data file of some 64K in Masterfile (see 1. above), I attempted to reverse the situation using SECTORED.COM, which **is** DU.COM from Advantage. No joy, as Masterfile is a sort of Jetsam, but in machine code. I therefore contacted D.G. Smith, 41, Tutsham Way, Paddock Wood, Kent TN12 6UA Tel. 089283 5974. He did it! It took him some 10 hours' work, as he hadn't come across Masterfile before, and he wanted a printout of the whole side of the offending disc under DU (which took me some 6 hours to do!). It had to go by parcel post. Incidentally, his method of charging is to say, "It took me y hours, how much are you paid per hour? Then that's £(y x rate/hour), please, made out to BACUP", the charity he supports. Good value for money, though, and he's most enthusiastic.

Training Courses

A number of these were featured in the December issue of 8000+. Looking at the costs, I chose Gary Hall, The Lodge, Sidmount Ave., Moffat DG10 9BS. he runs one-to-one tutorials, (including the by-now dreaded Masterfile) and also B&B, so it's "All on one site", so to speak. He knows his stuff, and his wife is a professional indexer, which could be useful. Mr. Hall wrote his wife's indexing program.

Title: Yes Chancellor
Price: £14.95
S/W House: Topologika
Tel No: 0733 244682
Programmer: Tom Tuite

The Budget has just gone.   Do you feel that you could have spent the
money more wisely than Mr Lawson?

In Yes Chancellor your challenge is to win three Elections by deciding
how much money to spend on the essentials of the country such as
Defence, Law and Order, Education and Social Security. To keep
inflation, unemployment and Gross NATIONAL product down whilst making
your economy, borrowing, and overseas trade grow.   There are four
levels of play ranging from 'test the water' up to 'walking on water'.

The game starts with the option of selling some of your reserves.
This is for difficulties which will come in the later years as
Chancellor. If you would like to help Industrial Development then you
can put up to £200m from your reserve fund into the industry. Offers
will come up randomly throughout the game but it is extremely risky
and if you let your reserve fund get too low it will force up
Inflation etc.

For each year you are Chancellor you will set the tax rate and how
much you intend to borrow. The unions ask for their yearly pay rise
which is always above the inflation rate.   The way is to negotiate
with them as they will normally except a few per cent lower then they
have asked for. If they are not happy with your offer then they will
go on strike, which will cost you money until the offer improves or
they will give in, which will win you a few votes.

The bank will recommend a rate of interest. If you set a higher rate
than recommended, the inflation rate will drop at the risk of the
economy or if the rate is above then the opposite will happen.

The treasury will report on your decisions for each year. Updated
information on Inflation together with productivity reports and the
forecast for the coming year.

It is important that imports are not allowed to exceed your exports,
as your country does have to earn a living. You can adjust your
reserves to make up the imbalance but this will put a strain on the
exchange rate. If your reserves get too low you will lose flexibility
with other problems.

Each year you will be able to see how you are doing in the opinion
polls and be presented with the public accounts which will show what
you need to improve on.

Every five years a General Election is held. If you have grown
unpopular in the last year then the opposition will get a landslide
victory. If you survive three elections you will be transferred to
the Lords! If you have a good score you can enter it onto the Hi-
Score table.

The program is simple to use and it will give you an accurate insight
into how difficult it really can be as a Chancellor. It's major
benefit is as a teaching aid for economics students. The book that
comes with the program gives the student details of the economic
structure of Britain with useful discussion points.

It has its entertainment value for a while but after playing it for a
few hours then it can become a little boring and repetitive, but as it
is an educational tool this is maybe not the point.

Rating:

Instructions: 8 /10
Ease of Use: 9 /10
Educational Value: 9 /10
Learning Power: 8 /10
Overall: 8½/10

EDUCATIONAL COLUMN

I am looking for someone who is interested in Education, preferably
someone that is a lecturer in a college or a teacher in a Secondary/
Comprehensive school. The person should be willing to write a regular
monthly or bi-monthly report on Software they use on the PCW at
School/College, Networks, what children feel about the computers and
anything else which is relevant to the PCW as an Educational tool.

In my first article I said that C programs were built using functions and
illustrated the use of library functions.   Now I want to show how you can
write and use your own functions.   Consider the following program, which
calls a function to find the maximum of an array;

```
#include crun2.lib
#include numio2.lib
#include conio2.lib
main()
{
int x[50];
int n,i,maxx;

puts("Enter data from keyboard\n ");
puts("Enter number of points ");
n=getdec();
for (i=0; i<n; i++)
{ puts("Enter number ");
  x[i]=getdec();
}

maxx=maxarray(n,x);
puts("Maximum is "); putdec(maxx);
}
maxarray(length,arr)
int length,arr[50];/* Declaration of parameters */
/* Finds maximum of an array */
{
int i,max; /* Declaration of internal variables */
max=0;
for (i=0; i<length; i++)
{ if (arr[i]>max) max=arr[i]; }
return max;
}
```

One important feature of C functions is that their variables are local;
that is to say the variables within the function are independent of those
in the main program or any other function.   So in the example above, the
value of the variable i in the function does not affect the value of the
variable i in the main program.   The function begins with a name followed
by a list of parameters in parentheses, ie maxarray(length, arr).   This is
followed by the declaration of the parameters.   Note that the function name
line is not followed by a semi-colon, but the parameter declaration is.
The body of the function is enclosed in braces, like the main program.
Following the brace are the declarations of internal variables.

If the function is to return a value to the calling function or main
program, the variable whose value is to be returned is put in a return
statement.

In the first article I mentioned the while construction as a way of
constructing loops.   The for statement can also be used. This is similar to
the for statement in Basic.   There is an example in the program above;
   for (i=0; i<length; i++)   Here, i=0 is the starting condition.   The
statement or block of statements (enclosed in braces) after the for
statement is executed whilst i<length.   At each execution of the loop, i is
incremented by 1.

The copy for PD #4 was dispatched to the Editor well within the publication time scale, but Postman Pat failed us, so, here we go with 4 and 5 together.

NEW PD and DOCumentation.

Much progress, we are now up to Disc .17., and up dated .DOC files are being included all of the time, special thanks go out to Mark Atkinson, Maurice Williams, Terry Rochester-Farrell, Oliver Pretzel, Micheal Blain, Andrea Pfister, John Lodge, John Cooper, Gerry Austin and many others, for the additional PD comments and up-dates to .DOC and user files.

Copies of some of the 'new' .DOC files were sent to Andrew (Perry Mason) Borland, council for the defence, who returned them with some very valid points about layout etc., these are reproduced below and will become the standard format for all of 'our' new .DOC files.

Produced in LOCOSCRIPT .1. or .2.
10 Char. per inch.
Margins at 5 and 75.
No Justification.
All will be converted to ASCII 'Page Image' for use as .DOC files.

We shall soon have Mark Atkinsons 'Guide to Small C' in print (and on disc # .9.), following this success, can I ask if we have any experts on PASCAL, FORTH or SCRIVNER who would like to help with .DOC or user files ?.

- -

YOUR PD LETTERS.

Dear Bob,

I am enclosing a disc for PD 12. My particular interest in that disc is QWIKFONT. The phrase alongside it "sets up your printer fonts and typestyles", awakens some hope that it might be the utility I am looking for, namely, one that enables you to print out, in a font of your choice (not one of the Amstrad ones) text created on your word processor.

If it does not do that, can you suggest to me a program that will, and where I could get it, or, if you should have a "type-in" program which does, would you mind sending me a photocopy ? I am interrested in a program to print text out in two or three columns to an A4 page. I hope I am not asking too much altogether in expecting you to write me a letter, considering the work you have taken on in connection with the PD programs. You are certainly putting some life into that side of things.

All the best from (probably) your furthest correspondent.

Tom Hutchinson,
45 Diamond Drive,
BLACKMANS BAY,
Tasmania,
Australia 7052.

Dear Tom,

Your disc complete with PD Library # .12. has been dispatched via Air Mail. To answer your points as best I can,

QUIKFONT is a CP/M program and does not run under LOCOSCRIPT, it should work from ASCII.

Two and three columns printing, this (or at least 2 column printing) has been the subject of much debate in the UK PCW press, with a number of systems and programs being put forward as partial answers. I have not used any of them, so do not feel qualified to give an opinion, but maybe some of our members have found the definitive answer ?.
Bob.

Dear Bob,

I enclose disc with further upgrades of SHELL.COM and EDFILE.COM. I have discovered that the cryptic signs EDFILE which was printing to the screen, were attempts to manipulate the cursor. By changing a ▪ to a Y in the screen escape sequence, I got them to work. However the cursor position is calculated on the assumption that the screen is 24x80. So I have altered the program to set that screen size as it starts, and return to full size as it exits (details in .DOC file). SHELL has been modified to reset drive B: every time it restarts, so you can change the format of the disc in B:, provided you run something (an empty command will do) when you change. This is one of the purposes of the A: B: and M: commands I have inserted in the 'STOP' column. The reason for the heading is explained in the .DOC file. SHELL also sets full screen size on quitting.

I also enclose a working Mallard BASIC version of the touch type tutor TTYPE.BAS, which I have called TTYPCW.BAS (in ASCII format- for faster loading: load and resave from BASIC). I modified the program after I discovered that although it crashed Mallard Basic, Mallard could be induced to make an ASCII copy. The program works well enough, though it is not very well written. The data files have also been changed, as they had parity check bits on the characters, causing them to display wierdly on the PCW. WARNING: TTYPE uses a clever ruse to allow multiple line IF's in BASIC: instead of the usual <RETURN><LINEFEED> code at the end of the line it reverses them. This fools BASIC into sticking them together in one long line, but displaying them as separate lines. Most editors will reverse the order of these characters back, and then the program won't load. Read the remarks on editing I have inserted near the beginning of the program. I also enclose the complete Z8E debugger/monitor (with over 100 pages of documentation) from CPMSDOSUGUK otherwise known as the UK CP/M user group. The version to use on the PCW is Z8EAMS+.COM. I do hope you find these programs useful.

Oliver Pretzel
270 Haggerston Rd.
LONDON E8 4EP.

```
================================================================
                         PD #4 & #5
================================================================
```

Dear Oliver,

Many thanks for your time and effort, the programs are currently going
around the PD Librarians and will be on discs, .3. (TTYPE),, .6.
(SHELL) and .8. (EDFILE). The Z8E program will be on a new disc
(Possibly .18) to be released in time for this issue.

Bob

Dear Chris,

On enclosed disc you will find the Public Domain SIG-M Volume 212,
containing CP/M Plus utilities - it might or might not be of some use
to the library; the source is Martin Kotulla, Grabbenstrasse 9, 8500
Nurnberg, Federal Republic of Germany, a commercial American and
German Public Domain dealer and distributor. As it happens, I've
tried getting PCW-adapted PD (or nearly) software in this area, but
with mixed results. I am operating an English-keyboard machine, and
even LANGUAGE.COM isn't quite enough to clear up the mess when a
program gets infested with umlauts, or whatever the latter thinks they
represent or are represented by at that particular moment. This is a
pity, as there is quite a lot of interesting software around for the
German incarnation of the PCW, the Schneider-Joyce (yes I know the
name is sneered at in the UK, but it's actually what it is sold as
over here).

Could I put two queries, one of editorial nature and one generic ?.
a)Could PCW File deal a bit more with SCRIVNER ?, I got it some time
ago, as it first came out in PCW format, played around with it a bit,
and then got distracted.

b)Has anybody been able to get ELITE to run on the PCW ?.
With compliments for the good work.

                                          Andrea U Pfister,
                     Feldeggstrasse 74, CH-8008 ZURICH, Switzerland.

Dear Andrea,

Your letter and discs were passed to me for action, the discs should
be with you by the time this gets into print. Chris is going to send
a copy of the 'File' and the PD listing to your German source. To
take up your points, a) see letter from John Cooper in this section re
SCRIVNER, also the plea from the undersigned for more help with the
program.b) ELITE, I dont know of a PCW Version of the program, but am
sure that it was issued for the CPC6128, and you should be able to run
that version on your machine using the CP/M 2.2 emulator on the SIG-M
disc you sent in (have any members managed this ?). Bob.

Dear Bob,

SCRIVNER is tantalizing, it would do a lot for me if I could only get
the basic carpentry right but I am still struggling with the
elementary calculations. I think it would be easier if I had a better
understanding of CP/M but at 74, rather more addled than I really like
to admit, and wet behind the ears where computers are concerned, I
have to allow that it may well be beyond me.

I wish I could get any sense out of 'The Software Bus' but, like much computer literature it is fine on the detail but leaves out the broader question of what one is trying to do. To return to SCRIVNER, here is the result of my researches which I hope will be of benefit to somebody.

There are .DOC and .TXT files of considerable length. The former has rather more preamble but the basic contents appear identical. They take a long time to scroll through so get your toolbag in order first, here's my list :-

NEWSWEEP. A splendidly versatile utility which will type, copy, erase or move files with the minimum of fuss. 207 seems to be the latest update (it is the latest we have, Bob) though I haven't found much wrong with 205. I have now put it on all my PD discs.

FILECHOP. This can be used to saw the long .DOC and .TXT files into logs of convenient size.

DISPLAY. This reads text files and has the virtue of being able to move backwards as well as forwards. Rather shaky at times but it does work. It won't handle overlong files, hence FILECHOP. 25K is about right.

NI. and LOOKAT. Both have their uses.

There is also a SCRIVNER Manual priced at £ 9.95 and now out of print. It deals for the most part with more advanced matters than I can yet cope with.

Bear the following points in mind, they are not included in the instructions : -

a) Everything has to be put into ASCII before SCRIVNER can go to work on it.

b) Do not use any fancy effects such as UL, CE, or TAB. All positioning on line must be done with the space bar.

c) The Macro part of SCRIVNER is easy to use and works well. You can ask any number of questions and fill in the answers against little arrows when you run the program. You can put text on the same line as calculations but not unrelated Macro, e.g.
                  Name._NAME_   Rent   [[_RENT_]]

as the variable length of the name will destroy the _RENT_ column and upset the calculations.
d) Do not forget to put a colon after CON: or LST:.
```
==========================================================================
```

PUBLIC DOMAIN SOFTWARE BOOKLET

DEADLINE: 11th May 1988

```
==========================================================================
```

===
===

Well that is about all I have to say about SCRIVNER except that I
cannot get straight addition to work properly and I do not know why.
Here is an example with the program and the result side by side.

```
        Rent            [[ _RENT_]]                      215
        Carriage        [[ _CARRIAGE_]]                   10

                        [[t subtotal]]                   241
(sic)
VAT                     [[  subtotal*(_VAT_/100)]]        33.75

                        [[  sub-total]]      ]]t subtotal](sic)

        Less Deposit    [[ _CREDIT_]]                    -50

        TOTAL DUE       [[t total]]                      208.75
```

The answer is right enough but the customer might well be
disconcerted. I have written to the proprietor about it, but over a
month has now gone by !.

Congratulations to your elevation to the Green Pages, quite the most
interesting bit of PCW File.

John Cooper,
Glan Dwr, Glyn Garth, MENAI BRIDGE, Anglesey

Dear John,

Many thanks for this, the first user help we have received about
SCRIVNER, the .DOC and .TXT are, as you point out, very good in
program detail but skips over the 'easy' bits. Can any one help with
the details of the Manual, publisher etc., I live close to the
'Largest Book Shop in the World' and given some basic details will
attempt to obtain a copy and publish details on availability. Have
any other members got anything to add to Johns informative offering ?,
if so, then please forward direct (on disc if it is long, your disc
will be dispatched back by return of post). Perhaps some other
members would like to give us details of the contents of their own
'Toolbox'. Bob.

Dear Bob,

In response to yours and Mark Atkinsons suggestion/offer, YES, I would
like the opportunity of 'an introduction to C'. I hope you get a
healthy response from the membership.

Best Wishes to you and all at PCW File.

Eric Mellors
42, Randall Drive,
HORNCHURCH, Essex.

Dear Eric,

Your wish is our command (or Marks in this case), we have the initial
'Intro' on disc #.9., and Mark is producing a series for publication
in the 'File', these will also be added to the disc as .TXT or .TQT
files. Bob.

[This letter is representative of a number of such sentiments
expressed by members by letter and telephone.]

Oliver Pretzel 270 Haggerston Rd.
London E8 4EP

 Dear Bob,

SHELL is a very pretty "front end" for CP/M. It shows all the files on
all user numbers of the currently logged disc extracting those that
can be executed.

It has five menu options:

Run one of the executable files on the disc;
run a system utility or a special utility (I have tinkered with these,
but anybody can modify them to suit their own system);
Change logged drive or user (but this will not reset the B: drive);
CP/M command.

EDFILE is a powerful editor for binary files.

The documentation explains how they have been modified from those
originally supplied.

Here are some comments on the PD list published in Vol2.1

CAT.COM and CAT3.COM don't seem to work properly.

MCAT41 works very well. To find out how to use it type MCAT41 ?. It
makes a catalog of all your discs. If you change the files on a disc
just "MCAT" it again and MCAT will remove deleted files and enter new
ones in the catalogue.

It produces nonsense values for the Disc free space, and only
catalogues User 0.

If we could get hold of XCAT.COM it could be configured to work
completely correctly.

The Master catalog gets very long very quickly. This is where FIND.COM
comes in handy:

   FIND MAST.CAT "NSWP"
will list all occurences of NSWP in the catalogue on the screen.

The following Utilities do not work correctly (at least not on my
early dics)::

FINDBAD, I/O-CAP, MAKE, QWIKKEY, QK20, Early versions of UNERA,
UNSPOOL (which is not similar to DESPOOL).
LOOK.COM is a "file sector editor"
   LOOK FILE.COM   (type ? for help).
It can be used to modify files of any format. It dumps one record
(=sector) at a time in hex and ascii, and allows you to change any
byte.

EDFILE.COM is a more powerful but more cryptic file sector editor.
    EDFILE FILE.COM   (type H for help).
Use LOOK until you get the hang of things then graduate to EDFILE
which has search and cursor facilities lacking in LOOK.
WARNING: Neither of these utilities backs up the file. So back it up
first.
CONV2.RSX is a Resident System eXtension. It can be attatched to any
.COM file by the command
    GENCOM FILE CONV2,
and removed by
    GENCOM FILE.
GENCOM is a CP/M+ utility. CONV2 is supposed to kid the program into
believing it is operating under CP/M2. However there are problems.
RSX's are new to CP/M+ and they have complicated conditions for
cooperating with each other. SHELL and SPOOL both have well-behaved
RSX's, so does CP/M+'s SUBMIT, which is why it is superior to all the
CP/M2 Supersubs. But CONV2 does not cooperate. If there are any RSX's
present when it is loaded. The computer may hang. Incidentally this is
also true of EXBASIC.
UNLOAD reverses the operation of LOAD. Assemblers produce files in
.HEX format which cannot execute directly. LOAD converts a .HEX file
to a .COM file which can be executed. UNLOAD gets you the .HEX file
back. This is the first step in the usually arduous task of
disassembling a file for which you have not got the source code.
BISHOW is not better than NSWP. It is better at viewing a text file,
but it has no other facilities.
Now a request:
Could you please ask people who supply BASIC programs to state which
BASIC they are for, and to supply them in ASCII format if possible, so
that they can be modified for other BASICS.

If you have any input referring to Public Domain then please contact
                                                        Bob Ellis,
       'ROWAN', 100 St Peters Close, Moreton-on-Lugg, HEREFORD, HR4 8DW.
          or, any of the other librarians (details on page 8)

WANTED. Public Domain 'Desk-top' programs:- calculator, calendar,
database, text writer etc..
*************************** NEW DISCS!!! ***************************

Disc 17 .... VDU - This is a tty, vt52, and viewdata (Prestel)
emulator. If you wish to know more about the program then in April's
edition of "Personal Computer World" you will find the Turbo Pascal
source code of version 2.2. The program has been further enhanced and
PCW File has the lastest version V2.3 which now works on the PCW9512,
supports a text dump (as well as a screen dump) in viewdata mode, and
has a faster viewdata emulation.

Disc 18 ... z80eams assembler Oliver Prezel plus games (T. R Farrell)

Disc 19 ... Graphics and plotters from many sources.

Disc 20 . Compilation of all of the Communications inc MEX which was
sent in by Stuart Williams.

                        forthcoming attractions:
Cobol Business programming language: pistol: xlisp (AI): & a few more!

****

ORDER FORM

People interested in obtaining the FREE Public Domain Software should do the following.

a) Write clearly what you require.

b) Mark your disc(s) with your name and address.

c) Please format all discs before sending them.

d) Please enclose a Stamp addressed padded envelope for the safe return of your software.

e) Oversea members can also obtain the software by sending enough International reply coupons or a small money order to the addresses below.

f) Please send your discs to one of the addresses below:

Bob Ellis
"Rowan"
100 St Peters Close
Moreton - on - Lugg
Hereford
HR4 8DW

Tel: [0432] 761860

Colin Millar
Nether Whitlaw
Selkirk
TD7 4QN

====================
EXCLUSIVE
TO SCOTLAND
====================

David Loveridge
55 Windsor Crescent
Harrow
Middlesex
HA2 8QJ

John Cockshaw
6 Duchy Drive
Heaton
Bradford
BD9 5NL

Please send me the following discs:

__ Disc 1   __ Disc 2   __ Disc 3   __ Disc 4

__ Disc 5   __ Disc 6   __ Disc 7   __ Disc 8

__ Disc 9   __ Disc 10   __ Disc 11   __ Disc 12

__ Disc 13   __ Disc 14 & 15 __ Disc 16   __ Disc 17

__ Disc 18   __ Disc 19   __ Disc 20

Membership Number: _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _ _

Name: _

Street: _

County: _

Postcode: _ _ _ _ _ _ _ _
NEW MEMBER? For your 8 page booklet giving details of all the programs available either phone (0297) 20456 or write to the editor.

I will now introduce the concept of pointers.   A pointer contains the
address of a variable, that is, the location at which the variable is
stored.   Consider the following statements;

```
int a, *pa, y;
pa=&a;
y=*pa;
```

An integer variable a and an integer pointer pa are declared. The statement
pa=&a causes pa to point to a, that is, pa now contains the storage
location (address) of a; y=*pa assigns to y, the value pointed to by pa (ie
a). So pa gives the address of a and *pa gives the value stored at that
address.   The commonest use of pointers is in connection with arrays.   The
pointer can be initialised with the statements:

```
        int arr[10], *pa, x
        pa=arr;
```

This causes the pointer to point to the first element of the array. Array
elements can now be accessed by incrementing the pointer, eg:

```
        x=*pa; /* 1st element assigned to x */
        x=*(pa+1) /* 2nd element assigned to x */
```

Note that incrementing the pointer points to the next storage location,
irrespective of the length of the storage location.   An integer variable
takes two storage locations, whereas a character takes one, but you don't
need to think about that, the pointer does it for you.

The following examples show the same program segment, which prints an array
of five integers using array elements and pointers.   The two are
equivalent.

```
/* Array elements */
int n[5], i;
for (i=0; i<5; i++)
  { putdec(n[i]); puts(" "); }


/* Pointers */
int n[5], end, *pn;
pn=n; end=pn+5;
for (pn=n; pn<end; pn++)
  { putdec(*pn); puts(" "); }
```

==
                 Re-run of Word Counter in Small C.
==

In the March issue the program *Word Counter* had all the { & }
(curly brackets) missing.   This was due to the fact that the *PCW9512*
daisywheel does not support these curly tail characters.   Because of this
we are printing the corrected version of this program on page 28
.   We send our apologies to Mark Atkinson and hope that our members
weren't too disappointed when the program didn't run.

35 Babbacombe Road,
Childwall,
Liverpool,
L16 9JN.

In reply to James Coleman (see January issue) and anyone else who
wants to know about the Basic command, OUT, there appears to be very
little infomation on it.   Here is what I know, not a lot I'm afraid.
For those who do not have it, the BASIC manual gives the following
infomation:

OUT is a Basic command to output a value to a processor output port.
The command syntax is:

                    OUT port-number,data-byte

where port-number is an integer-expression yielding a value in the
range 0-255 and gives the number of the output port that the data is
sent to; and data-byte is an integer expression yielding a value in
the range 0-255 and gives the value of the data byte sent to the port.
There is no information given as to which number corresponds to which
port, or what effect any given data byte has.   Here are a few
combinations that I have found.

OUT 247,n   Most values of n greater than or equal to 128 make the
                 screen briefly flash once, useful for explosions in
                 games programs.   Values of n less than 128 have no
                 effect.

OUT 246,n   Where n is in the range 0-255, alters the vertical
                 origin of the screen, each value altering the origin by
                 one pixel vertically.   Thus to alter the origin by a
                 number of lines use multiples of 8.   n=0 returns to
                 normal.

OUT 245,n   Causes strange patterns to appear on the screen and
                 gives the appearance that the computer has crashed.
                 n=10 gives a nice uniform pattern, n=91 returns the
                 screen to normal.   This can be used in programs to give
                 the appearance of fake crashes.   Information can still
                 be typed in even though you cannot see it on screen.

OUT 248,8   Blanks the screen by turning the ink colour to black.

OUT 248,7   Restores the screen blanked by OUT 248,8.   These two
                 commands are useful to display a complex screen
                 instantly.   First use OUT 248,8 to blank the screen,
                 then use a series of PRINT commands or whatever to draw
                 the screen, which remains blank while this is being
                 done, then use OUT 248,7 to make the whole lot appear
                 at once.

Since the January 1988 issue, Amstrad PCW Magazine has been running a
series of articles on building peripherals to plug onto the expansion
port, and gives more information on the use of input and output ports.

How about PCW File compiling a list of useful OUT commands as there is so little widely available information on this topic, and what there is, is spread around numerous articles, letters, hints and tips in many different magazines. Also a list of useful PEEKS and POKES would be much appreciated

"Y" it does it

When sending an escape sequence to the screen the ESCAPE character MUST be followed by the correct number of characters. Thus when using ESC Y r c to move the cursor to a given row and column, ESC Y must be followed by two further characters to specify the row and column. If only one is given this is taken as the row specifier, and the next available one is used as the column specifier, which, in the examples quoted in the January issue was the first character of the string to be printed.

Therefore the first example:

          PRINT CHR$(27)+"Y"+CHR$(30+32);"Hi"

is the same as:

          PRINT CHR$(27)+"Y"+CHR$(30+32)+CHR$(40+32);"i"

because "H" is ASCII character number 72 (=40+32) which therefore specifies row 30, column 40.

In the same way, the second example:

          PRINT CHR$(27)+"Y"+CHR$(30+32);" Hi"

is the same as:

          PRINT CHR$(27)+"Y"+CHR$(30+32)+CHR$(0+32);"Hi"

because the space at the start of the string is ASCII character number 32 (=0+32) which therefore specifies row 30, column 0.

When using ESC Y r c to position the cursor on the screen remember that there are a maximum of 31 rows if the status line is enabled (the usual state) or 32 rows if the status line is disabled, numbered 0 to 31 from top to bottom, and 90 columns numbered 0 to 89 from left to right. It is quite possible to print a string on the lowermost line of the screen but remember it will only stay there if the screen is not caused to scroll. Since BASIC will add a carriage return (which then scrolls the screen by one line) at the end of a PRINT command or when returning to the prompt, unless specific measures are taken to prevent it, a string printed on the bottom line is always scrolled up and no longer remains on the bottom line. The following program illustrates the principal.

```
1Ø PRINT CHR$(27)+"Ø": REM disable status line
2Ø PRINT CHR$(27)+"E": REM clear the screen
3Ø PRINT CHR$(27)+"Y"+CHR$(Ø+32)+CHR$(Ø+32);"ROW Ø TOP LEFT."
4Ø FOR n%=1 TO 3Ø STEP 1
```

```
5Ø PRINT CHR$(27)+"Y"+CHR$(n%+32)+CHR$(Ø+32);"ROW";n%;
6Ø NEXT
7Ø PRINT CHR$(27)+"Y"+CHR$(31+32)+CHR$(Ø+32);"ROW 31 BOTTOM LEFT.
Press a key to continue.";: REM semicolon to suppress carriage return
8Ø keyread$=""
9Ø WHILE keyread$=""
1ØØ keyread$=INKEY$
11Ø WEND
12Ø PRINT CHR$(27)+"1": REM enable status line
13Ø END
```

There is a bug in this program, one of the row numbers fails to print, if anyone knows why please let me know.

Any attempt to print outside the available screen (including on the status line if you have not previously disabled it) causes the cursor to move to the nearest edge.

If you dislike numbering your rows 0-31 and your columns 0-89, or you want your origin to be at the bottom left, you can use a different set of coordinates if you alter the form of the command.

For top left 1,1 rows 1-32 from top to bottom, columns 1-90 from left to right use:

PRINT CHR$(27)+"Y"+CHR$(row+31)+CHR$(column+31);

For bottom left 1,1 with status line enabled, 31 rows 1-31 from bottom to top, columns 1-90 from left to right use:

PRINT CHR$(27)+"Y"+CHR$(63-row)+CHR$(column+31);

For bottom left 0,0 with status line enabled, 31 rows 0-30 from bottom to top, columns 0-89 from left to right use:

PRINT CHR$(27)+"Y"+CHR$(62-row)+CHR$(column+32);

For bottom left 1,1 with status line disabled, 32 rows 1-32 from bottom to top, columns 1-90 from left to right use:

PRINT CHR$(27)+"Y"+CHR$(64-row)+CHR$(column+31);

For bottom left 0,0 with status line disabled, 32 rows 0-31 from bottom to top, columns 0-89 from left to right use:

PRINT CHR$(27)+"Y"+CHR$(63-row)+CHR$(column+32);

Does anyone know the details of the working of ESC b n and ESC c n where n is a number in the range 0-255. According to page 141 of the PCW manual these commands set the forground and background colours respectively. They do not seem to work as described in the manual, and if you write a little basic program to step through all the possible values, the values which do have an effect (to invert the screen) do not appear to have been chosen with any logic. What is worse is that they behave inconsistently, the effect seeming to depend on what has been done to the screen before.

==
MAY ISSUE DEADLINE: Wednesday 19th April
==

After Chris Bryant's appeal in **PCW File** Vol. 2, Issue 1, I thought I would come forward and offer my services in the shape of a communications column...

This series is basically going to be in the form of an informal comms comment forum, whereby the most interesting queries I receive will be answered on this page. In addition, I shall occasionally cover technical subjects of interest to new and experienced users, as well as discussing the bulletin board scene.

Perhaps I should explain that, as Hon. Secretary of the **West Midlands Amstrad User Group,** I have owned the whole CPC range, plus a PCW8512, before arriving at my present machine, the **Amiga A1000.** Having used all the preceding machines for comms, and indeed writing articles for several commercial magazines on comms using the Atari ST and Amiga, I am pleased to offer any advice I can on your comms problems with the PCW range of machines.

In addition, I have provided Chris with a disc of communications software specially installed for the PCW8256/8512/9512 running under CP/M Plus with the official Amstrad CPS8256 interface or any compatible device. This is a kind of 'software supplement' to the series and will be placed in the **PCW File** PD library in the usual manner.

First off, I'm going to introduce you to the **TUG2** Bulletin Board, an independent (and free!) system which you can dial up on 021 444 1484, in Birmingham. TUG2 will let you use any speed modem from 300 baud up to 2400 baud, with scrolling software set to 8 bits, no parity, 1 stop bit.

This Bulletin Board, run by Pete and Sandie Franchi, is arguably the most popular system with Amstrad users in the UK, and contains an Amstrad SIG (Special Interest Group) messaging area sponsored by my club, the West Midlands Amstrad User Group. TUG2 has recently undergone huge expansion and enhancement, and is now running on a PC clone with over 50 megabytes of storage. The system has message areas for many other computers as well, and also for Amateur Radio, Comms, Portable Computers, and Adventures (indeed a number of Infocom adventure games can be played online), as well as software download areas accessible to regular (and sensible!) users who use the messaging facilities. National and international messaging facilities are also available in the Amstrad and other SIGs.

That's all for this issue, readers of **PCW File** should send their comms queries to me at: **26, Matlock Road, Lower Farm Estate, Bloxwich, Walsall, West Midlands, WS3 3QD.** Please ensure you enclose an s.s.a.e., as queries arriving without one will not be answered! Or, why not drop me a line via **TUG2?** Subscribers to CIX can contact me as **swilliams.** Bye for now!

SOFTWARE REVIEWS

Title   Colour Printing Disk
Publishers   Streamside Research
Reviewer   Graham Glover

The colour printing disc from Streamside Research is in the form of a tutorial disc with 7 pages of LocoScript document of explanation. It is intended to be used with Database Software's MasterPaint.

As well as the pages of instructions there are some examples for you to try out first before setting to work creating your own 'masterpieces'. The easiest one is a two colour letterhead of Streamside. The most difficult a six colour cartoon.

Without going into too much detail and telling all of Streamside's details, basically, it means splitting the image you wish to print into separate MasterPaint files and then running the paper through the printer once for each colour required. This may sound rather laborious, which it can be, especially if several colours are used.

The main stumbling block to this operation is the ability to get the paper in exactly the same position each time it is run through the printer. This needs some practice and can take 3-4 times to get it right at first. To be fair to Streamside they do recommend the use of heavy quality continuous stationary to make life easier. I must say I did not have any of this to hand and had to make do with single sheet 80gm paper.

I can't help wondering why they had to create a disc for this exercise. Although the MasterPaint example files were helpful, they were not really necessary; you could easily make your own examples to try out. A good article in a magazine such as this would have been sufficient, but there again they have to earn a crust I suppose and the disc is only £5.00 each, little more than a blank.

All in all colour printing on the 'ol PCW is an interesting concept. To create something by this method can be a tedious task if done in high volume but there again it may prove to be a simple way to make something like a letterhead, after all colour photocopying is now available at most local copy shops

To paraphrase Dr Johnson's sexist remarks about women preachers - "Sir.....it's like a dog walking on it's hind legs. It is not done well but you are surprised to see it done at all".

Streamside Research 2 Rosary Drive, Bridgwater, Somerset TA6 7JS.

Title: MINI OFFICE PROFESSIONAL DATABASE PROGRAM

Comprises: Comes as part of a suite of five programs, Database; Wordprocessor; Spreadsheet; Graphics and Comms.

Authors: DATABASE SOFTWARE, Hazel Grove, Stockport. SK7 5NY

Price: £21 from Kintech Computers, St.Tudy,Bodmin,Cornwall. PL30 3NH

Reviewed by: Gerry Austin

MINI OFFICE PROFESSIONAL has been a most welcome addition to my software library, it is from the well known stable that produced THE DESK TOP PUBLISHER and MASTERSCAN/MASTERPAINT, both reviewed in earlier issues of PCW FILE.

Needing a "Box-file" type Database that didn't cost the earth I decided to research what was available. It had to be very user friendly and dedicated to the PCW; allow customised screen layouts; search/sort on any field (with the ability to ignore Upper/Lower case letters and FIND the string using any combination of these letters) and mark or subdivide the database; be able to carry out calculations on certain fields/data and be flexible enough to permit changes to the record structure once created and in use. The Mini Office Professional Database offers all this and MORE! Some of the other available offerings seemed to not only need considerable expertise in setting up but also carried a very inflated price tag but with this package, even at the recommended retail price of £29.95 I consider it to be incredible value.

LOADING: The main menu for the suite of programs is loaded from the A> prompt of CP/M. This universal loader also offers a comprehensive Disc Utilities Menu and a graceful return to CP/M. Upon exiting from any one of the programs you are returned to this menu to allow direct loading of any one of the other programs.

CREATING DATABASE STRUCTURE: Setting up your Database is very straight forward but a little forethought and planning beforehand will enable you to get the most out of the many varied facilities offered. The data for each field can be classified as ALPHA/NUMERIC; NUMBERS only; DATE or FORMULA which allows all number fields to be linked by quite detailed formulae and displays the result. Some nice touches are being able to not only choose the typeface you desire but also having the choice of four different type sizes for field text; the ability to insert a field between two existing fields and an on screen reminder of the number of records available to you at the current size of your layout.

A real boon when you are creating a Database requiring a large number of records. For a simple database with just five fields of 20 characters in each field will allow you a maximum of 3407 records. [Using a PCW8256 with the expanded RAM Disc.]

USING THE DATABASE. Once you have defined the database structure and entered all your available data you can browse through your records; AMEND; DELETE; MARK; SORT on as many fields as required in ascending or descending order; SEARCH any field and mark records; perform CALCULATIONS on number fields. Whole databases can be manipulated by creating a new database of marked records or deleting marked records from an existing database and two databases may be joined together. You can also SAVE your records in a format usable by the Wordprocessing module for mail merging. The PRINT DATA option offers a comprehensive array of choices including Draft, NLQ or Graphic modes; separate records by a line, page or no separation; print with or without field names; print all or only selected marked records and there is also a Label/Report printing facility. The programs support both the standard PCW dot matrix printer and Epson compatibles.

Having tried many Public Domain Database offerings [and being completely baffled by several] I can heartily recommend this Database program which also comes with a pretty good Wordprocessor, Spreadsheet, Communications and Graphics Programs too. The Graphics program painlessly converts your numeric data (which could be created using the Spreadsheet) into Bar Chart/Line Graph or Pie Chart displays with many varied options and again, full printer output is supported.

The ringbound MANUAL supplied is brief but concise with a good index and tutorials with example files supplied on disc. I had no teething problems in immediately getting started. Without a Modem I am unable to comment on the Comms program.

DESIGNER STUBBLE
"All the dots wots fit to print"

Title:	Designer Stubble
Type:	DTP (Guide)
Author:	John Evans
Tel No:	0225 315131
Reviewer:	David Axford

DESIGNER STUBBLE IS THE NAME of a very useful utility created by John Evans, who knows what he is talking about when it comes to Desktop Publishing. The newsletter has been designed using Database Software's Desktop Publisher (DTP), because of this you will obviously need the DTP program before you can gain access to the Designer Stubble utility.

What you get

Designer Stubble comes either on two "A" format discs (price £16.95) or one "B" format disc (price £13.50). You may think that 45 pages isn't much value for your money. Certainly if you bought a book with so few pages for that amount of money I'm sure most people would think that you need certifying! I can assure you however, that after printing out your newsletter, you will gain a lot of practical information on how the disc files were set up, and also you will be confident in using your printer.

The beauty of this software is the practical aspect. For one thing you know it works on your *PCW* and for another you know that it works with your DTP software!

Of all the books on desktop publishing that I have read so far, they imply that you either have an *Apple Macintosh Plus* or an *IBM PC*. This can be quite disconcerting and even demoralising. So it is with grateful thanks to John Evans that we *PCW* owners can now have a great deal more confidence when it comes to desktop publishing on our *PCW*'s!

What it's about

Once it is printed out, you then have before you a reference guide full of practical information and hints on what (and not what) to do. The author starts off with the first section called 'Publishing from a Desktop', this describes amongst other things the theory and practical side of it all.

Second section is 'Learning from the Professionals', which explains the editorial process - the copy from the author to the actual platemaking and printing.

'Basic Typesetting Conventions' goes into detail about the point size and a lot of other detail is explained quite simply in this section.

The next section is 'DTP Program Features' and it summarises the Desktop Publisher's capabilities and quirks. The author has tried and mainly succeeded in trying to supplement the DTP manual rather than just duplicating it. There is a handy re-scaling graphics diagram which is most useful when you have no option but to re-scale your original drawing.

'Newsletter Design and Production' being the final section of the newsletter explains how the Designer Stubble' newsletter was put together and why certain options were preferred to others.

Most important about the newsletter is it's usefulness as a valuable source of software templates for your own newsletters.

The verdict

Overall this is a practical piece of software, a necessity if you intend publishing any form of newsletter, much more useful than just reading a book. It is designed to be read easily with its simple but functional layout, I do think that the author is a bit of a purist though when he implies that anymore than 2 columns on an A4 sheet is a crowd. All the glossy *PCW* magazines (which are A4 size), mainly use three columns, sometimes even four, plus practically every page has some form of graphics on it to make it look interesting. I sympathise with the authors space limitations (graphics soon gobble your disc space up), he needed to get all of the information across but was obviously restricted by the problem of disc space.

****

House Style

He also talks about, and quite rightly so, the house-style and of how important it is to be consistent. The aggravating thing about his house-style is the constant use of 'Americanisms' (or as the author would write Americanizms). Computerize, mechanize etc., were all written with 'ize' instead of the Anglicised 'ise' which constantly irritated me throughout the publication. However this is a niggling minus when you weigh up the pros and cons. Designer Stubble is to be recommended.

Designer Stubble 2

At the end of the guide the author has stated that he is publishing a second issue of Designer Stubble in the Spring, this will include reviews of MasterScan and MasterPaint, although most of the disc space will be reserved for a collection of display fonts. I shall be looking forward to it, especially as the present DTP display fonts aren't one of it's best features.

Ease of Use............5/5	DESIGNER STUBBLE
Performance............5/5	JOHN EVANS
Documentation.........4/5	20 Grosvenor Place
Value for Money......5/5	Bath, BA1 6AX

FOR SALE

As from this month the 'FOR SALE' section is FREE! There must be a few of us who have up-graded to the *PCW* 9512 and consequently may have some software which they are not able to use to the full with a daisywheel printer.

a) To avoid encouraging software piracy, all advertisements will be carefully vetted before they are accepted for printing.

b) All software must be original and have their full documentation. It is in the interest of all members to make sure that they receive orignial software and documentation.

c) Second-hand hardware may also be included.

d) This service is *FREE* to our members. When you send in your list of items for sale include your telephone number and MEMBERSHIP NUMBER with the asking price (which will include postage).

e) Please note NO commercial advertisements in this section.

```
=========================================================================
                          PCW FILE HELPLINE
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70 Argyle Road,
London,
W13 8EL

Is there someone in the West London area who would co-operate with me
writing a text adventure using the PROFESSIONAL ADVENTURE WRITER
software from Gilsoft, see 8000 Plus of February 1988. I am computer
illiterate so you need to do all the work and there is no financial
incentive either as the idea is to try and sell the game on behalf of
an animal charity. I am in fact writing to a well known (and extremely
good) animal author for assistance on the storyline. Would a kind
hearted, hard working sucker please step forward.

                                                          Arnold Becker

15 Easthouses Road
Dalkeith
Midlothian
EH22 4DH

I possess an 8256 with expanded memory and a 5¼" Second external
drive, 40/80 track switchable. Would anyone who possesses the same
facility contact me as a possible way of ensuring maximum use of the
set-up. As someone employed in education I should particularly welcome
the opportunity to look at practical uses of the Amstrad as tied to,
say, a PC or BBC.

                                                           Alan Ducklin

Via s.giovanni 14
dicomano (FI)
50062
Italy

I am looking for the manual for the Epson printer RX80 (I purchased it
several years ago and never had an opportunity to use it, eventually I
lost the manual). Anything will do: a used or a copy would be perfect.
If anybody can help, let me know the cost (including mailing and
packaging).

                                                        Giuseppe Failli

                      PCW FILE TELEPHONE HELPLINE

BRISTOL Tony Reese
Tel (0272) 682321 Telcom Gold Mailbox number 72: Mag35812
                                         Interests: Basic & General
If you want to help by providing a Telephone helpline service please
get in touch.
```
=========================================================================
                               FOR SALE
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```

MASTERFILE 8000 - Un-used programme disc, manual and owner's
registration card boxed in original case.   £25.00

DATABASE MANAGER "ATLAST" - Programme disc and manual in original box.
                                                              £10.00
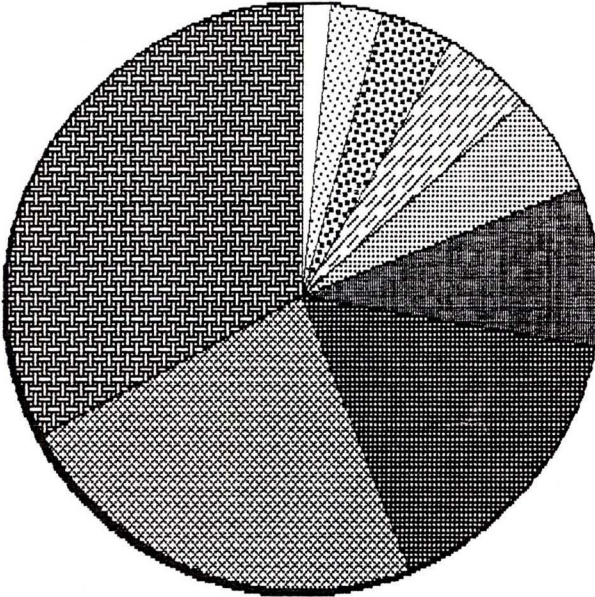   I.Kargar, Tel. 0695 72776

FINANCIAL REPORT 1987

	Phone	1.9%
	Emergency fund	2.5%
	Envelopes	4.1%
	Prize money	5.0%
	Misc.	5.5%
	Adverts	8.8%
	Postage	15.9%
	Expenditure	23.1%
	Printing.	33.2%

The above pie chart illustrates where the money goes for each issue. As might be expected the biggest costs are printing and postage, though the size of expenditure may be a surprise to some. Expenditure is 30% of the total of the other eight items, we must expand the group so as not to stand still and become stale. We are enquiring into the possibility of printing the *PCW FILE* on A4 size paper which will help those of us who find it rather hard reading the small print. If we get the response from our members for more articles and contributions then we shall also increase the size of our magazine. This of course will cost proportionately more for paper, printing, envelopes and probably postage.

The emergency fund is as it reads - for emergencies. Prize money was explained more fully in the last issue. Miscellaneous includes things like discs, paper, labels etc. For the advertising we are aiming at four quarter page advertisements which are approximately £240.00 each, we have to advertise in the big glossy magazines so that new *PCW* owners know that we exist.

Remember, the pie chart represents a 24 page issue with a print run of 800 copies. The cost of producing each issue up till now is £1.14.

```
=====================================================================
                         FINANCIAL REPORT
=====================================================================
```

The only income which we have coming into the group are from your
subscriptions and the trade advertisements which ranges from £10.00
for ¼ of a page to £50.00 for a full page with special rates for
inside front/back and back cover.

HOW WE ARE DOING - AND WHAT WE HOPE TO ACHIEVE

Last year no official accounts were kept due to the fluid situation
of starting up a magazine, some mistakes were made which have
proved to be a valuable lesson; though I might add they have cost
me personally and not the *PCW FILE*!
We took over the *PCW User Group* in April last year and a sum of
£600 was handed over for 240 members. Of those members 126 of them
had subscriptions going up to March of this year which we have
honoured (our printing has cost us a lot more), which has made us a
bit short.
We have also advertised quite a lot in the glossy magazines.

So how do we hope to combat this loss and make sure that we keep
going? Well we have started off this year by saying 'Recruit a
Friend' and you will get a free disc with your choice of
Public Domain on it as an incentive. The more members we have then
the better it will be for each of us, as I'm sure you will agree.
A few companies have helped us which we must thank - Aladdink,
KADOR, Thurston Brown Associates, Digita International and
8000 Plus for their mention at the very beginning.

SUMMARY

Basically we are still here now through hard-work and perseverance
and we will still be here tomorrow. Though we have had a bit of a
cash flow problem it is now beginning to ease thanks to the
companies who have waited a little longer for their money - VNU
Business Publications, EMAP Business and Computers, Focus
Magazines, Avralite Ltd and last but by no means least SEATON
CHRISTIAN GRAPHICS who have carried on printing even when the
stakes were down.
I think that there is a very strong market for 'self-help on the
PCW's' and that *PCW FILE* can and will be a success story. The new
PCW 9512 is certainly a bonus for us, and with the new lower prices
for the *PCW 8256/8512* this surely means there will be a lot more
sold. That means that there will be lots of potential members out
there who will need help with word processing and computer
applications.
I have tried to put all our members in the picture with an honest
report of where your money goes. The purpose of this is to inform
you all so that you can understand that it costs more than you
realize to start a user group and to continue to be a success
story.
I am now keeping an exact account of our finances so that next year
I will be able to give you a fuller report.
If anyone has any specific questions about this report or on
anything else, then please phone me on (0297) 20456 so we can
discuss it further.

                                        Publisher: Chris Bryant

Here is the program to count the number of words in an ASCII file.
(Please refer to Part 1 in Volume 2 Issue 2 for details)

```c
#include crun2.lib
#include conio2.lib
#include file2.lib
#include numio2.lib
#define SPACE 0x20 /* Space */
#define CR 0x0d /* Carriage return */
#define LF 0x0a /* Line feed */
main()
{
char fname[20], a;
int fp, count, crlf, ch, space;

puts("Enter file name"); /* Prompt for filename */
gets(fname);
if (fp=fopen(fname,"r")==0) /* Open text file for reading */
   { puts("\nFile opening error"); exit(); }
crlf=0; space=0; ch=0; count=0;
while (eof()==0) {
   a=getc(fp); /* Read a charcter from the file */
   if (a==CR) { if (getc(fp)==LF) crlf++; }
   else if (a==SPACE) space++;
   else { ch++; crlf=space=0; }
   if (ch>0) { if (crlf>0) { count++; ch=0; }
               else if (space>0) { count++; ch=0; }
             }
}
putdec(count);
fclose(fp);
}
```

(8) How many hours per week do you spend with your computer?......

a) Leisure..........   b) Business..........

(9) Which of the following do you have:

a) mouse   b) digitiser [ ][ ]
c) scanner [ ][ ]   d) modem [ ][ ]

(10) Which of the following do you use in order of frequency:
Number in ascending order - ie.
      (1 would be the most frequently used - 5 the least).

a) word-processor [ ][ ]   b) database
c) spreadsheet [ ][ ]   d) desk-top publishing [ ][ ]

e) other - please state ....[ ]

(11) If you use a modem and would like your **Mailbox Number** published
with the aim that other members can contact you, state which service
(Telecom Gold/Prestel) ....and number:.................

(12) Do you use the groups Public Domain Library ...YES/NO ......

(13) Have you ever bought anything from any of the advertisers in PCW
File. If so please state what, and from whom purchased:

ITEM:

PCW FILE

READERS SURVEY

So as we can give our members what they want in their magazine we have
to ask a few questions. I hope you will spare a little time, complete
the following questionaire and send it back to me as soon as possible.
This will then be collated and entered onto a database so that we will
then have all the relevant facts to hand.   As you return your
questionaires to me I will assume that you have no objections to the
information being held on disc.   It is in your interest that we know
what you require from your club.

Please use block capitals.

Name:................................   Membership number:..............

Address:...........................

    ....

    ....

    Post code:...........   Telephone number:..............

Your age group - Tick the relevant box:

UNDER 16	▢	16 to 20	▢	21 to 30	▢
31 to 40	▢	41 to 50	▢	51 to 60	▢
60 to 65	▢	OVER 65	▢		

(1) Name the article which you found to be the best so far:

(2) What subject would you like dealt with in more detail:

(3) Do you believe that 'Company Watch' is beneficial? YES/NO ......

(4) Do you have anything to offer the club? (ie. articles, tips etc.)
(YES/NO) ...... If Yes to the above question please state what?

(5) If you have a telephone would you be willing to operate a
telephone helpline? (YES/NO)

(6) Do you know anyone else that lives near you who has a PCW?
(YES/NO) ......

(7) Would you be willing for your address to be divulged to any member
who lives in your vicinity so that they may make contact with you?
(YES/NO)

ITEM:

ADVERTISER:

(14) Would you like to see PCW File produced in A4 size? (YES/NO) .....

(15) What improvements/ additional services would you like to see offered from the user group?

(16) Would you be willing to start a Local user group in your area with the support of PCW File? (YES/NO) ....

(17) If you have any further comments or suggestions please write below or on a separate sheet.

SEND TO:

PCW FILE READERS SURVEY,

11 Havenview Rd, SEATON, Devon EX12 2PF.

THANKYOU!

- - - - - - - - - - - - - - RENEWAL FORM - - - - - - - - - - - - - - -

This will be your last copy of PCW File. We hope you will be rejoining soon.

INLAND
1 Issue   - Sample   £1.50
6 Months - 6 Issues £10.00
1 Year   - 12 Issues £18.00

EUROPE
1 Issue   - Sample   £1.95
             6 Issues £11.50
             12 Issues £23.00

OVERSEAS
1 Issue - Sample   £2.25
          6 Issues £13.50
          12 Issues £27.00

I would like to re-commence my subscription from the May issue for six issues/ Twelve issues.

Make all cheques payable to AMSTRAD COMPUTING NEWSLETTERS.

Name (Mr,Mrs,Ms) :
Address   :
                   _____
                   _____
Postcode   _____

PLEASE PRINT CLEARLY

Thankyou.

Please indicate your age group by ticking the relevant box:-

UNDER 16 [_]   16 to 20 [_]   21 to 30 [_]   31 to 40 [_]
41 to 50 [_]   51 to 60 [_]   61 to 65 [_]   OVER 66 [_]

Make all cheques payable to AMSTRAD COMPUTING NEWSLETTERS.   Thankyou.

PLEASE PRINT CLEARLY

Name (Mr,Mrs,Ms) : ....

Address ....

....

....

Postcode ....

Please indicate your age group by ticking the relevant box:-

UNDER 16 [_]   16 to 20 [_]   21 to 30 [_]   31 to 40 [_]

41 to 50 [_]   51 to 60 [_]   61 to 65 [_]   OVER 66 [_]

Any comments that you may have:-

....

....

....

We look forward to hearing from you soon.

Send to: **PCW FILE (SUBS), 11 Havenview Road, SEATON, Devon, EX12 2PF.**

```
================================================================================
                               STOP PRESS!
================================================================================
```

COMPANY WATCH UPDATE

Further to my copy letter to Nabitchi which I sent you early last
month (and to your comments in PCW File last issue), I confirm that I
eventually received the MEMORY GUARD. It was in fact posted on the
date that I had given Nabitchi as the final day for delivery before I
took legal action, so that I received after the final date.

I was determined to see this matter through, had the Memory Guard not
arrived that morning I was going down to the County Court to issue a
summons. Needless to say, there was a covering letter from Nabitchi
stating that they couldn't understand why I had not received any of
the pieces that they been sending to me at intervals! We are all aware
how bad the postal service is, but it is nowhere as bad as Nabitchi
and other companies claim. Have you considered running a competition
for a series of new and refreshing alibis for computer shops to use, -
maybe paying you a royalty?

Would it be an idea to periodically list all the companies to date
that have failed various members, with an index so that one could
refer back to the original report? When I next wish to buy some item
by post, I will certainly remember not to use Nabitchi, but I could
overlook Silicon Systems and all the others.

                                                       Arnold Becker
                                         70 Argyle Road, London W13 8EL

```
================================================================================
                            KADOR - SPECIAL OFFER
================================================================================
```

Re-inking service - same day service - FREE transporter SAE - PCW File
readers special introductory offer £1.00. Ring 0685 883663 stating
your membership number for your SAE and FREE catalogue of KADOR
products.

   KADOR, Unit 18, Aberaman Ind. Est., Aberdale, Mid Glam CF44 6DA
```
================================================================================
                    DIGITA INTERNATIONAL - SPECIAL OFFER
================================================================================
```

        DATASTORE 2 - £29.95   SUPERTYPE 2 - £19.95

   CLASSIC SPACE INVADERS - £9.95   PERSONAL TAX PLANNER £19.95

              BUSINESS CONTROLLER - £79.95

(See Vol 2 Issue 1 for advert. State Membership number and mention PCW
File).

                        DIGITA INTERNATIONAL

   Kelsey House, Barns Rd, Budleigh Salterton, Devon EX9 6HJ

```
================================================================================
                JUNE COPY DATE: Wednesday 18th May 1988
================================================================================
```