```
ENCINA                      119:56 remaining (100%)

                            SysOp utilities

SYSOP UTILITIES
_____
[A] View Call Log            [B] View System Log
[C] View Error Log           [D] User levels
[E] Userlist/Search          [F] On-line userlist
[G] User editor              [H] Read user's mailboxes

[1] BBS CLI      [2] OS CLI  [3] System utilities

[I] Log-off ALL users        [4] Check messagebase integrity
                             [5] Mend messagebase
[6] Generate filelist        [7] View conference access
[K] Refresh modem            [L] User deleter

[8] File list manager        [9] Import/export messagebase

System time (BST) : Thu Aug 17 13:22:11 1995      [M] Main menu
System loading    : 17 tasks

Please select (ABCDEFGH 123 I 4567KL 89 M /?) :
```
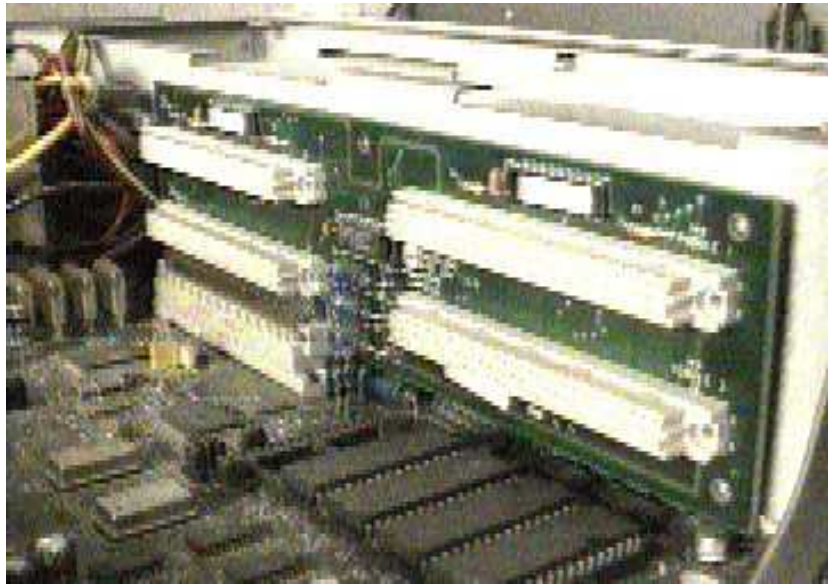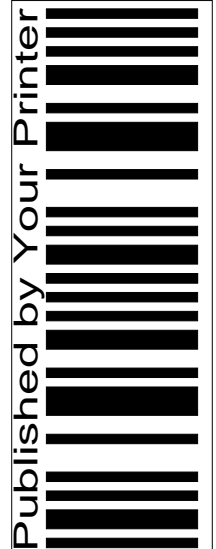
BBS Security

Second IDE drive for your A5000

In this issue:

☞ BBS Security - special article,

☞ Installing a 2nd IDE drive on an A5000,

☞ Password 'Obviousness' checker source,

☞ The Finishing Touch, slick presentation...

☞ ...And more!

Index:

Distribution stuff:

Editor . . . . . Richard Murray
Contributors . . Richard Murray, Niall Douglas, John Nagle
                 (C routine), James Larcombe, Nava
                 Whiteford, Justin Fletcher.
Graphics . . . . Richard Murray

For your information, and to use up this space, here is the hierarchy:
     Frobnicate is indirectly *owned* by BudgieSoft.
     BudgieSoft is owned by Richard Murray.
     Therefore Richard Murray owns Frobnicate.
     Indirectly owned means it doesn't say "A BudgieSoft production" all over it.
     Three blind mice! Three blind mice! La-la-la-la la-la la-la-laaaaa! Three blind mice!
     :-)

Editor's Page(s)

CROAK!

Here I sit, in France, writing the rough copy of this text on that squared paper that the Europeans seem to like so much.

There I am pictured above, relaxing in the sunshine where the temperature hit 37°C *in the shade!!!* That is before I helped bring in the Blé (wheat). For the faint hearted, I'll leave out a description of me *after* Blé-hacking.

I've taken this holiday to really examine France. I wonder – do the French yell various obscenities at "foreigners" (like a certain country I could name?). Do the French eat Frog's Legs?

The answer to both questions, as far as I can see, is NO. Sure, you do get odd looks from some people as you drive by with English plates, but nobody leans out of their window to yell things that you won't find in a conservative dictionary. The French actually appear to be very tolerant of me, an English person, even when my smattering of their language sounds like an old Liguaphone French course LP played at the wrong speed... backwards! "Please you I would like eat to eggs and apple-of-earth fried"...

As far as Frog's Leg's go, I've had little success in finding them in a supermarket. I've seen Escargot (snails!?) and even live pick-your-own crabs. I'm beginning to wonder if the French actually eat the things. Perhaps the idea of Frog's Legs was derived from the work of a French bloke called Voltaire who had a good party trick with "Voltaire and his re-animated Frog's Legs" (no prizes for guessing his subsequent claim to fame!).

There are a number of things I don't like about France and the French: Everything is taxed (in three bands, approx 6%, 14% and 22%); Our water supply comes from a hole in the ground; our sophisticated toilet macerates, dices, slices, pushes, mooshes, squooshes then ejects *it* into the stream; and – possibly most importantly – I'm lucky if I understand one word in fifty.

On the other hand, there are a number of things I *do* like: Most people are friendly and helpful; the shops are open much later; there is less crime (could you leave a Merc parked in England in a town, windows open and engine running whilst you pop off to get a beer?); their laws on "junk food" are stricter so their sausages and beans taste like sausages and beans - not some sweet tomato-related yuck; and you can buy some quite exotic things in tins (my culinary expertise will just about extend to 1) Open tin, 2) Dump contents into pan, 3) Light cooker, 4) Stir until hot, 5) Eat.).

I think, all in all, that if I had a "Carte De Sejours" and could "speaka de lingo", I'd have no problems with living in France. That's all that matters – to me *(to-oo me, dum-dum dum-dum dum... Mamma, 'Just killed a man. Put my gun against his head, pulled my trigger, now he's dead...)*.

Apology

I'd like to take this time to publically apologise to (Mr.) Nava Whiteford, who took the time to design a heap of Frobnicate logos. I, erm, kinda forgot. <blush!>

Okay, so Nava should see his work around, like the now magazine title... Tomorrow at ten I shall be hung for this error. Alternatively I could choose to receive six-of-the-best with a wet noodle. Decisions, decisions!

Is James "wizard"?

James Larcombe, of Dizzy Wizard Software, has kindly submitted one article in what I hope will be a long-running series. The article is called The Finishing Touch, and is most impressive. To see for yourself, take a peek at page 11.

Whose side are YOU on?

My little article on Internet/fidonet legislation has created a veritable storm. On one side we have the "Leave the 'Net in peace" crew who think my article is the next best thing to sliced StrongARM. The other side are the pro-censorship bods who say my article is unadulterated crap, I should burn in hell etc etc. It's so clear-cut it is fascinating! Pro, Anti and Leammealone.

It seems, however, that some people had difficulty in understanding my comparison of the Internet with CB radio. So allow me to explai…n...

Cast your mind back to when CB was a 'new' thing. That's roughly the state of the 'Net. New and wonderful.

Both fulfil the following criteria:

> Messages 'sent' via the system can be 'received' by a person in the right place, with the right hardware.

> Are fairly unrestricted forms of communication with little or no cost for 'sending' and 'receiving' (not including original hardware costs).

> Can be recorded without anybody knowing - your total audience is unknown. These records can be preserved indefinitely.

Now we all know what happened to CB – systems were allocated a frequency and restrictions (called 27/81) which is pretty much incompatible with the rest of the world. That is now changing to to European CEPT frequencies (called PR27GB). Let me tell you something, the government and their researchers aren't paying for any conversions. No no no. As well as paying a license fee for not-a-lot-really, *YOU* will also have to fork out about 100 quid for a new rig.

All this hassle and grief over a small limited-range radio transceiver system. Can you even begin to imagine what the government could do to the 'Net?

Ovation is pathetic?

It is funny how often I hear that one. However, a little research of Arcade in the beginning of July point to *about* 40 readers. 12 downloaded the Ovation version, 28 took the text&graphics. That's over 25% who see the pretty version. Not to worry. You can all look in the Impression version that is planned.

DIY A3000 Serial Port

The required IC's don't appear to be listed in the Maplin catalogue. I have, however, dug up an RS catalogue from 1991. Both items are listed there, with order codes. So the best bet is to call RS and ask. The general-public section is called ElectroMail, and is usually advertised in Everyday Electronics.

6551P Asynchronous Communications Interface Adaptor

6551P ACIA	28 pin	303-078	£5.40 each

LT1133 Multi-channel 5V powered RS232 drivers/receivers

LT1133	24 pin	659-090	£4.78 each

REMEMBER: THOSE ARE 1991 PRICES!!!

Of course, now we come to the topic of article submissions. Feel free to submit articles in these formats:

> Ovation
> AcornDTP
> Impression/Style
> 1stWord+
> ASCIItext

We can also accept (will take time to convert):

> AMIPro
> WordPerfect
> XYWrite
> TechWriter
> WordZ

And graphics in just about all regular formats:

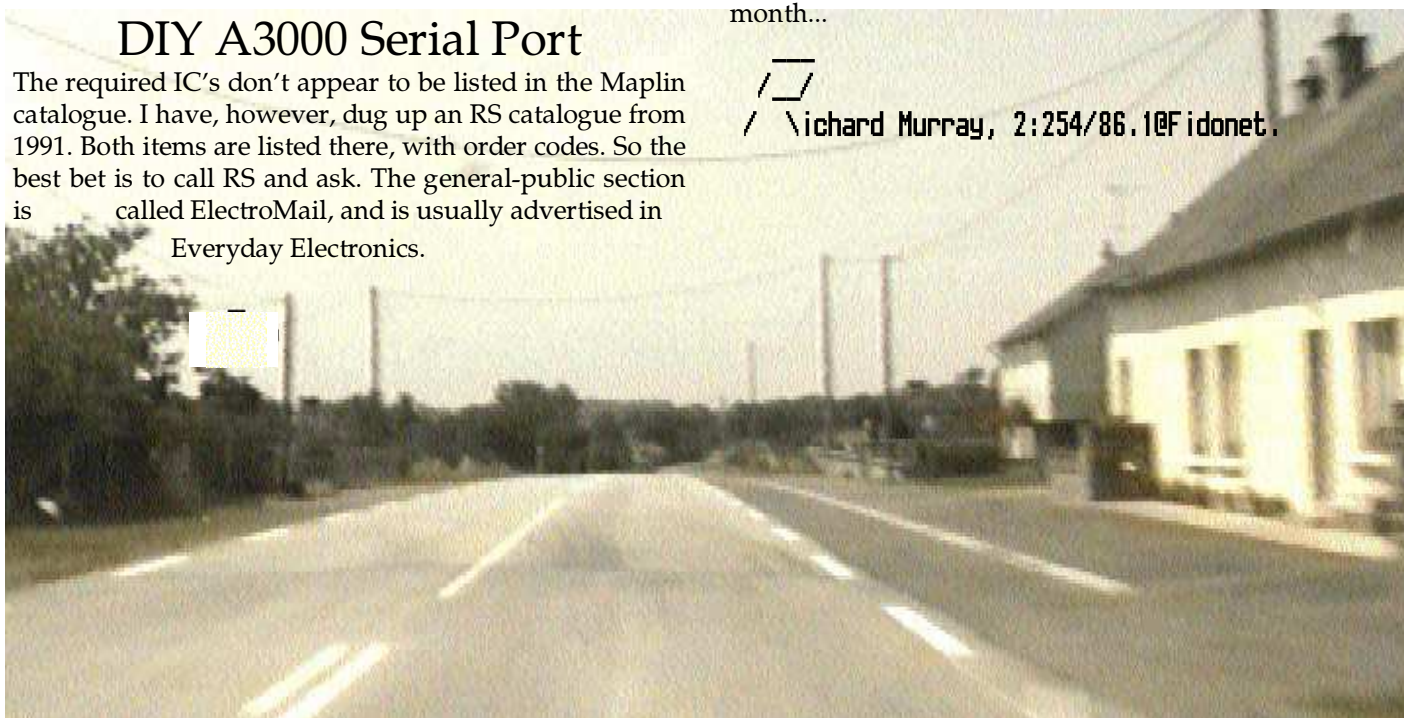> GIF, TIFF, Sprite, JPEG, PCX, DrawFile, ArtWorks...

If you *private* upload the files to me, please use the following archive formats:

> Acorn Sparkive or PK-Zip compatible.

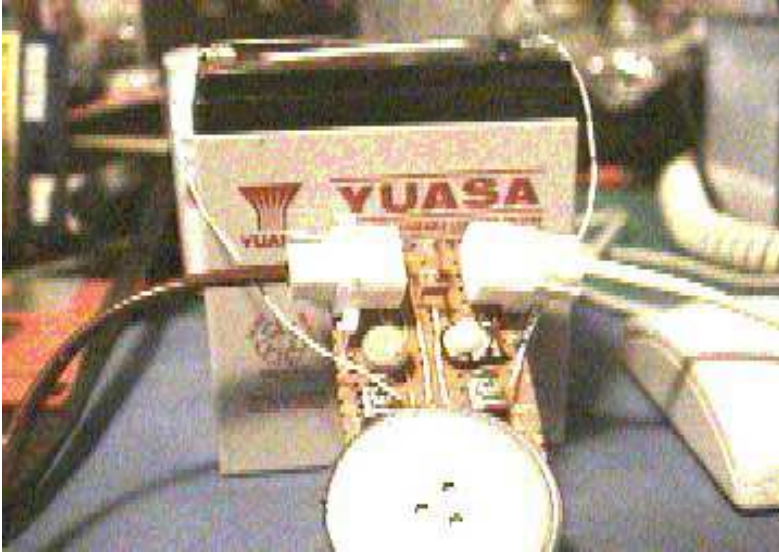That about wraps this up. Sorry that this issue is late.

What, with my harddisc death and being on holiday for a month...

```
  __
 /_/
/ \ichard Murray, 2:254/86.1@Fidonet.
```
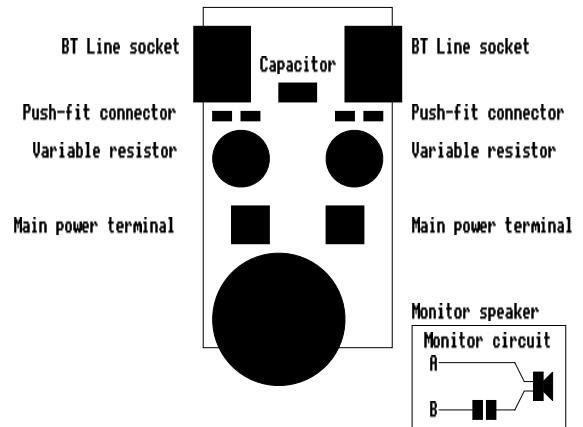
Modem to Modem link revisited

press-fit connectors in parallel with the line socket. Then you can simply shove any two phone wires across the terminals. The diagram below shows how I laid out my circuit on a piece of veroboard.

Here we return to the story of the modem-modem link, with a kind of FAQ:

My phones don't work or are real quiet.
Simple, change the active voltage through the circuit to be 12V - use a little battery like the Yuasa one shown.

My phones are so loud they break into oscillation.
If you are using more than 12V, drop to 12V. What I did was to replace the resistors with variable resistors to provide a kind of rough volume control (and as the battery was charged to 13.8V, not 12V - it provided a kind of *gain*).

How would I hook up a rotary-dial phone cord into a BT line socket?
Don't bother. Below you'll see a really rough diagram to a BT line socket module. When you rip out the line socket, consider also placing two of the
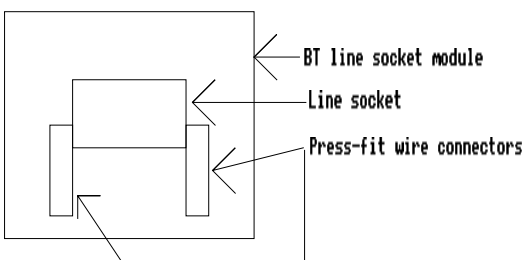
So, what do I do?
Hook up your modems. One one computer you want to type ATD (go on-line in originate mode) on one side, and ATA (go on-line in answer mode) on the other side. You may need to play with ATX to allow *blind dialling*.

And what about using a fax as a scanner?
This can be done. Hook your *fax*modem to one side and load your fax software. Hook your fax machine to the other side. Set up your paper. One the modem side, set your software into receive mode. On the fax machine, pick up the handset (if it has one, else press the on-line switch) and press the GO button.

What about a DIY exchange?
Yes, I suppose you could use a tone decoder, lots of relays and several of these circuits to build yourself a little telephone exchange. How would you handle BUSY? How would you RING? All for your experimentation...

Will foreign phones work?
The circuit was tested using a French phone...

Installing a 2nd IDE disc drive in an A5000

This article will assume that all you have is:

1. A harddisc
2. A screwdriver
3. A long IDE ribbon cable with three IDC connectors, one at each end, one in the middle.
4. A harddisc drive power splitter
No drive details except it's size.

That's all I had. So. Let's go!

The first step - is it possible to fit your drive?

1. Is your drive bigger than 512Mb?
2. Have you already two drives fitted?
3. Is your IDE drive a 'laptop' type?
4. Have you a 2nd floppy fitted?

Problem 1 can be fixed with Acorn's new Filer. That hasn't been officially released, so we'll discount it.

Problem 2 is insurmountable. IDE supports two devices, like a printer port supports one printer. That's that.

Problem 3 can be rectified, but it's a pain in the rear-end. The quick'n'dirty way to tell is to look for a power connector. If you have a big 4-way connector like on the 5.25" disc drives, your drive should be compatible. Some IDE drives want power down the interface cable, and that cable has a physical spacing about $2/3$ that of the A5000's connector.

Problem 4 is a pain to rectify. Normally the place where the 2nd floppy drive fits is where you'd place your 2nd IDE drive. You could also find a way to mount it in an expansion slot. Be careful of temperature.

Assuming all is okay, we can begin. To take your A5000 apart, you must remove the three screws down the left and right edges of the bottom of the casing, then slide the case off backwards. Remove the memory upgrade on the

front left, if you have one. Next, remove any expansion podules and unscrew the backplane (as indicated). Ease the backplane off. Unscrew the single screw holding the disc assembly in place. It is to the front-left of
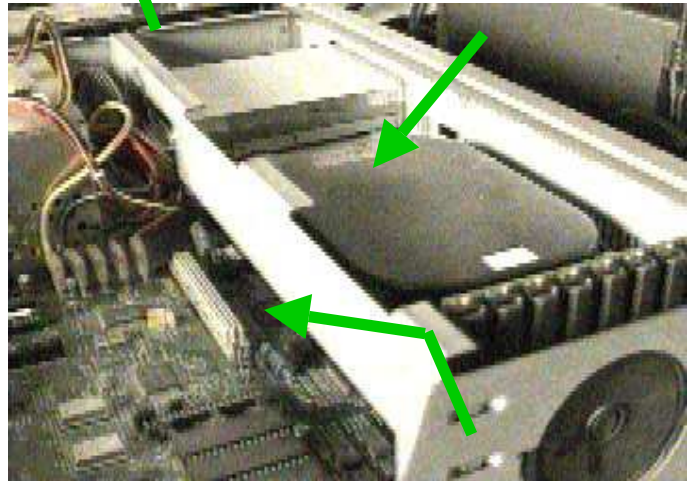
the floppy disc drive. Unplug all the cables, and if necessary make a note of which cable goes where. Then lift the disc assembly up, back and out.

The next suggested idea is to loosely hook up your equipment (monitor, both IDE drives) and power up to see if the drives work.

You'll need to *Configure IDEDrives 2.
My methods are a bit unorthodox. I'll hope you are tidier than that above.

Why? Well - IDE drives work on the principle that one drive (master) controls the other (slave). You cannot have two slaves or two masters, but you can have a master and a slave. Determining this is a set of links or DIP switches. They are usually in the same place on the drive circuit, this is shown in the diagram on the next

page. You may be lucky enough to have the switch meanings detailed on the casing of the drive - but the A5000's I've seen are supplied with Conner drives, and all the Conner drives I've seen omit this little detail. The setup that worked for me was to leave the links on my existing drive (single drives are usually masters) and remove the links from my new drive. It took about twenty minutes of powering up and clicking until I hit the right combination.
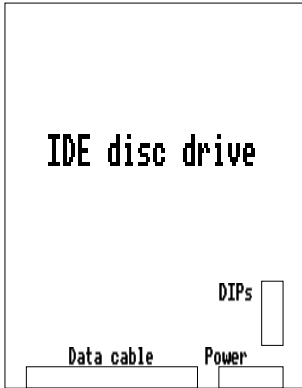
IDE disc drive
DIPs
Data cable   Power

If your drive is listed here, then these are your link settings...

	MASTER DISC					SLAVE DISC			
		Link settings					Link settings		
Drive	HSP	C/D	DSP	ACT	Drive	HSP	C/D	DSP	ACT
CP3044		X		X					
CP300084E		X			No slave drive				
CP30126		X							
CP30174E		X							
CP3044	X	X	X		CP3044				X
	X	X	X		CP300084E				
	X	X	X		CP30126				
	X	X	X		CP30174E				
CP300084E	X				CP3044				X
	X				CP30126				
CP30126	X	X			CP3044				X
	X	X			CP300084E				
	X	X			CP30126				
CFS210A	X				CFS210A				
CFS420A	X				CFS420A				
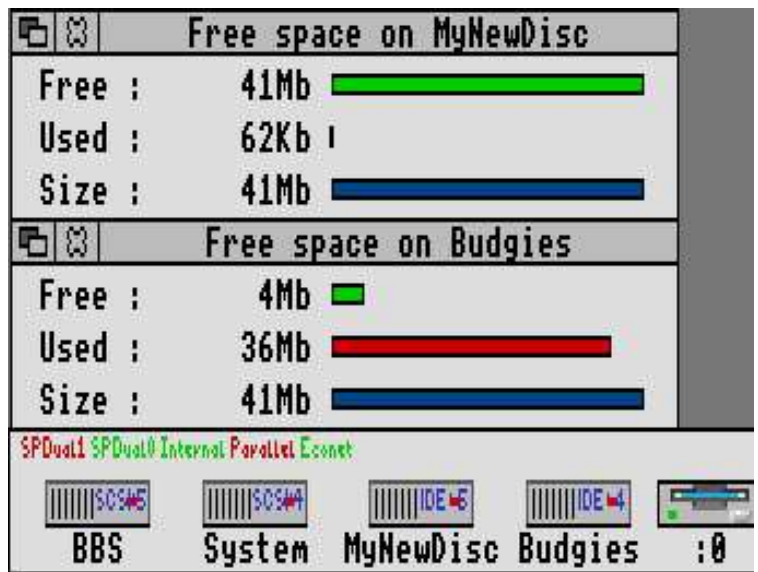
Once you've done this, you can begin the installation of the drive. If you are placing it in front of the power supply, space is tight so insert all the connectors into the drive before screwing it into place. Two hints for this stage:

1. Use little plastic spacers or four or five washers to raise the drive up off the bottom of the computer. This is to aid circulation and cooling.
2. Use the screws from the existing A5000 IDE drive. Those common hexagonal screws so

beloved of the PC casing world will fit, but they poke out a little and are not smooth. Personal choice you see... :-)

The picture you just saw indicates where *exactly* the 2nd IDE drive should go. You can see the power splitter.

Put your computer back together.

Formatting the drive is achieved with HForm (supplied somewhere on the discs that came with your computer, apps disc 2 I think). Load this up and select the new drive. It should identify the drive for you. Proceed with format.

DON'T GET THE DRIVE NUMBER WRONG. FORMATS ARE NOT REVERSIBLE - UNLESS YOU KNOW SOMEBODY DEEP IN THE NSA. :-)

But why?
* You bought a cheap drive at a car boot sale or computer auction.
* You bought a drive that came without any paperwork (dubious!).
* You were given a drive by a friend.
* Your job is to install and upgrade drives, this one of many destined for the bin - so you kinda gave it a loving home.
* You won the Lottery and have a nice harddisc collection.
* You ran out of space and wanted to DIY the upgrade.

And finally...

Frobnicate advises readers not to mess with their computer or drop tea in the ventilation slots. If you do - and it all goes **BANG!**, then we at Frobnicate can helpfully say "*tough luck*". In other words, if you have any doubts, don't do this. We are not responsible for your actions. I think that covers it. :-)   Happy upgrading!

The drive links chart taken from September 1995 Acorn User. Read it... It's a good magazine. :-)

EasyPeaC

This is the password obviousness detector program. It will compile with Acorn C (release 4).

Further details of this program are given in the article on BBS security.

```
/*
        Obvious password detection program.

        Frontend/Acorn tweaks by Richard Murray.
        Original UNIX code by John Nagle.
        Tidied up for Frobnicate, August 1995.

                Table of triple usage in text

                24511 words were used to make this table.
                The words came from the files:
                        /usr/dict/words
                        obvpats.lp

                The table is 30 percent populated.
*/

long obvtab[27][27] =
{
    {   0X00100001, 0X00040000, 0X00040000, 0X00009000, 0X00808020, 0X00140000, 0X00000000, 0X00080000,
        0X00000002, 0X00000000, 0X00000000, 0X00000000, 0X00001020, 0X00000000, 0X00000010, 0X00000020,
        0X00000000, 0X00000000, 0X00000030, 0X00300100, 0X00000100, 0X00000000, 0X00000020, 0X00000000,
        0X00000000, 0X00000000, 0X00000030 },
    {   0X00090000, 0X000c708a, 0X022cd73e, 0X023ffbbe, 0X02fffffe, 0X002cd0da, 0X023cdae2, 0X02adf3b6,
        0X0024f222, 0X00dd7efa, 0X00008022, 0X02b5937a, 0X06fdfbfe, 0X02bdf37e, 0X07ffdfff, 0X003c3248,
        0X023dfb76, 0X00200000, 0X07fffffe, 0X02bbfbbe, 0X06bcfb6f, 0X055f7dfc, 0X02609232, 0X021cfbf6,
        0X02999222, 0X00bdf3ff, 0X06308232 },
    {   0X00080000, 0X07fdfbfc, 0X022c9226, 0X00008012, 0X00248222, 0X07dffbfe, 0X00200000, 0X00000000,
        0X00208020, 0X047ffdfe, 0X00000020, 0X00000000, 0X02208222, 0X00800220, 0X0000a022, 0X03fdfffe,
        0X00048000, 0X00000000, 0X02208222, 0X00308228, 0X00049062, 0X071efefc, 0X00000220, 0X00000020,
        0X00000000, 0X049d11a2, 0X00000000 },
    {   0X00080080, 0X02ffffffe, 0X000c0020, 0X0024932a, 0X0000802a, 0X06bdf3fe, 0X00000002, 0X00248220,
        0X02bdf3fe, 0X007df0fe, 0X00000000, 0X02bdfffe, 0X02208222, 0X00200222, 0X00008222, 0X07fffffe,
        0X00000102, 0X00200000, 0X02308222, 0X00188200, 0X02aca262, 0X003df27e, 0X00000004, 0X00000000,
        0X00000000, 0X001dd08e, 0X00000022 },
    {   0X00088022, 0X06fd7bfc, 0X02249222, 0X00209102, 0X02249332, 0X07fff7fe, 0X00249282, 0X02a43a22,
        0X00008222, 0X05fdf3fe, 0X00208022, 0X00000220, 0X02208222, 0X00208222, 0X00008223, 0X07fdf3fe,
        0X00049322, 0X00200000, 0X02208222, 0X0091bb2a, 0X00008302, 0X043dfafe, 0X00008222, 0X02048222,
        0X00000000, 0X00987aef, 0X00200000 },
    {   0X004c1030, 0X04ff79dc, 0X023c9226, 0X02bdf3fe, 0X04ddfbfe, 0X023c92fa, 0X0224f3e6,
        0X02224a222, 0X045d7afa, 0X00208022, 0X0218ca36, 0X02fdfbfe, 0X02a9f22e, 0X06ffffff, 0X05fd73d8,
        0X02bdb32e, 0X00200000, 0X07fffffe, 0X02fbfbbe, 0X06bdfb6e, 0X005d78bc, 0X066c8222, 0X029df37e,
        0X0333832a, 0X008df97f, 0X06648222 },
    {   0X00080000, 0X07bc7bfe, 0X00000222, 0X0000000a, 0X00008002, 0X02fc7abe, 0X022cb366, 0X00000102,
        0X00000022, 0X055c70fe, 0X00008000, 0X00000002, 0X02208222, 0X0000000a, 0X00000200, 0X03edf2be,
        0X00000008, 0X00000000, 0X02208222, 0X00118922, 0X028ca32e, 0X041c74b8, 0X00000000, 0X00000002,
        0X00000000, 0X00000000, 0X00000000 },
    {   0X00080000, 0X06fdf3fc, 0X00008222, 0X00000000, 0X00008022, 0X02fdf3fe, 0X00240220, 0X020d93a2,
        0X02bddffe, 0X047df0fe, 0X00000002, 0X00008200, 0X02208222, 0X02300222, 0X00318226, 0X02fdf3fe,
        0X00009220, 0X00000000, 0X02208222, 0X00919b06, 0X00048302, 0X061cf2ee, 0X00000000, 0X02048022,
        0X00000000, 0X00056002, 0X00000002 },
    {   0X00080000, 0X06fdfbfe, 0X02249222, 0X00048102, 0X00048202, 0X07fff2ff, 0X00208202, 0X00008022,
        0X00008122, 0X047dfcfe, 0X00000800, 0X00008220, 0X02248222, 0X0008a222, 0X0028c222, 0X06fdfeff,
        0X00209202, 0X00200000, 0X02249232, 0X00108302, 0X02bdf3fa, 0X071d71fe, 0X00000200, 0X00008322,
        0X00000000, 0X011d32be, 0X00000000 },
    {   0X00483010, 0X05dd7bbc, 0X022cf226, 0X023cdb2a, 0X02bdf6b6, 0X04fd79fc, 0X0234d262, 0X063df3a2,
        0X00000222, 0X00000202, 0X00208002, 0X02208a22, 0X02fdbbfe, 0X022df36e, 0X07ffffff, 0X05fd70be,
        0X02bdb766, 0X00200000, 0X02fdfafe, 0X02ffffff, 0X06bdfb6f, 0X000c7008, 0X02248222, 0X00008202,
```

```
       0X023082e2, 0X00000002, 0X04608022 },
   {   0X00080000, 0X07ed7bbc, 0X00000000, 0X00000000, 0X00000000, 0X009cd57a, 0X00000000, 0X00000000,
       0X00000000, 0X005070c4, 0X00000400, 0X00001000, 0X00000000, 0X00000000, 0X00000000, 0X02fc5bae,
       0X00000000, 0X00000000, 0X00000000, 0X00000000, 0X00000000, 0X015d7e96, 0X00000000, 0X00000000,
       0X00000000, 0X00000000, 0X00000000 },
   {   0X00080000, 0X07fdfff4, 0X00248222, 0X00040302, 0X00048022, 0X02fdf3f6, 0X00208222, 0X00048000,
       0X0014a022, 0X00ddf8fe, 0X00000002, 0X0000ca22, 0X0220a222, 0X00000022, 0X00208222, 0X01fdfb7a,
       0X00009202, 0X00000000, 0X02208222, 0X02b1abae, 0X00048302, 0X029d7110, 0X00000000, 0X00008322,
       0X00000000, 0X00ac9522, 0X00000000 },
   {   0X00088000, 0X07fffbfe, 0X02249222, 0X0234b322, 0X02bdf36e, 0X07fdfffe, 0X00bc93e6, 0X00048222,
       0X00008222, 0X05fffdfe, 0X00008000, 0X0288d322, 0X02bdb7fe, 0X0228e332, 0X00208020, 0X07fffffe,
       0X021ca362, 0X00000000, 0X02208022, 0X0299ab26, 0X06eca326, 0X055dfefe, 0X00008222, 0X02008322,
       0X00000000, 0X00bdfbfe, 0X00000022 },
   {   0X00080000, 0X07fdffbc, 0X002dd236, 0X0021fbfe, 0X00008020, 0X07ddfbfe, 0X00209220, 0X00000000,
       0X00208020, 0X053efcfa, 0X00000000, 0X00000000, 0X00008222, 0X0220a222, 0X02208222, 0X07fdfbfe,
       0X023c9be6, 0X00200000, 0X00088002, 0X0239a37c, 0X00048120, 0X041dfaf8, 0X00000020, 0X00008222,
       0X00000000, 0X001cd0a8, 0X00000000 },
   {   0X00180000, 0X06fdfbfe, 0X002c922a, 0X02349b22, 0X02bfffffe, 0X07fff3ff, 0X00249222, 0X02bdbb76,
       0X02208222, 0X057ffbfe, 0X00208022, 0X021d33ea, 0X02208222, 0X00008222, 0X0228c222, 0X07fdf2fe,
       0X00209220, 0X00200000, 0X0220822a, 0X02fdfbfe, 0X06adf3ee, 0X043dfafe, 0X02208222, 0X00048322,
       0X00100200, 0X01ffb11e, 0X02808222 },
   {   0X0008113c, 0X017f79da, 0X02fcd77e, 0X02349b2a, 0X02adfbfe, 0X037ef35c, 0X0234b262, 0X02bcf7f6,
       0X0204f222, 0X011c58fe, 0X00008222, 0X02a99b2e, 0X06fdfbfe, 0X02aff36e, 0X07ffffff, 0X045df9dc,
       0X02bffbae, 0X00200000, 0X06fffbfe, 0X02fbbbae, 0X02bdf3ee, 0X055f73ff, 0X02008a22, 0X06bdfb7e,
       0X02d043ea, 0X001dd37e, 0X06008222 },
   {   0X00080000, 0X07fffabc, 0X002c9022, 0X00008100, 0X00040002, 0X07fdfefe, 0X00241220, 0X00040002,
       0X023cd232, 0X057ff8fa, 0X00000002, 0X00000220, 0X02208222, 0X00208022, 0X00008020, 0X03fdfafa,
       0X022db322, 0X00040000, 0X02208222, 0X02b0bb2a, 0X0224832a, 0X041d7afe, 0X00000008, 0X00048202,
       0X00000000, 0X00949b86, 0X00000000 },
   {   0X00080000, 0X00100000, 0X00000000, 0X00000000, 0X00000000, 0X00000010, 0X00000000, 0X00000000,
       0X00000000, 0X00000000, 0X00000000, 0X00000000, 0X00000000, 0X00000000, 0X00000000, 0X00000000,
       0X00000000, 0X00020000, 0X00080000, 0X00000000, 0X00000000, 0X02008222, 0X00000000, 0X00000020,
       0X00000000, 0X00000000, 0X00000000 },
   {   0X00080010, 0X07fffffc, 0X022c9222, 0X023c9b2a, 0X02bdd366, 0X07ffffff, 0X00249222, 0X022cb322,
       0X02208222, 0X07fbfdfe, 0X00208020, 0X029df336, 0X02b98236, 0X0239936e, 0X02b9ab66, 0X07fffffe,
       0X023cb322, 0X00200000, 0X02248322, 0X02f3fb7e, 0X06bcf3ee, 0X01ddf2fe, 0X02208222, 0X00008222,
       0X00000020, 0X0099f0be, 0X00008222 },
   {   0X00081000, 0X03fdfffe, 0X02248222, 0X0224b323, 0X00248242, 0X07fffbfe, 0X02208222, 0X002c8220,
       0X02f5fa6e, 0X057ff8fe, 0X00200000, 0X0224a222, 0X02208222, 0X02208222, 0X02208223, 0X06f5f7fe,
       0X022c9326, 0X00200000, 0X00288222, 0X02bdf36e, 0X02edf7ff, 0X041df2fe, 0X00010220, 0X00248222,
       0X00000000, 0X001d78bc, 0X00000000 },
   {   0X001c1010, 0X03fdfbfc, 0X00248222, 0X02249102, 0X00048000, 0X03fdfbfe, 0X00249222, 0X00248022,
       0X02bffbfe, 0X047ff8fe, 0X00000000, 0X02000222, 0X02208222, 0X00208222, 0X00308223, 0X07fdfafe,
       0X00049222, 0X00000000, 0X02a08222, 0X02f1ab7e, 0X027c9be2, 0X031df2fe, 0X00000202, 0X01208322,
       0X00000000, 0X01ad328e, 0X000db2a2 },
   {   0X004c1010, 0X02dd7bdc, 0X027db736, 0X023c9b2a, 0X06ac92b6, 0X063df5f6, 0X0030b042, 0X002cf3a2,
       0X00004002, 0X057dd0be, 0X00208202, 0X00048a30, 0X06fdfafe, 0X007bf36e, 0X02bdfbfe, 0X023d5210,
       0X02bdbbfe, 0X00200000, 0X06fffbfe, 0X023bdbbe, 0X06bcf3be, 0X00202000, 0X00840220, 0X00000002,
       0X00309220, 0X00601022, 0X04208022 },
   {   0X00080000, 0X003d7fbc, 0X00004000, 0X00000000, 0X00000002, 0X039dfbfe, 0X00000000, 0X00000000,
       0X00000000, 0X057cdafe, 0X00000000, 0X00000100, 0X00008002, 0X00000000, 0X00000000, 0X02bcfa88,
       0X00008020, 0X00000800, 0X00000000, 0X000c1000, 0X02400220, 0X01000000,
       0X00000000, 0X00800200, 0X00008000 },
   {   0X00080000, 0X077d7bde, 0X00248222, 0X00208102, 0X02248220, 0X025d53bf, 0X00209202, 0X00000200,
       0X02208222, 0X055d70f8, 0X00000000, 0X02804200, 0X02180222, 0X00000222, 0X02bd03fc, 0X00fdf864,
       0X00209222, 0X00000000, 0X02008222, 0X02bdbb2c, 0X00208322, 0X00057100, 0X00000000, 0X00808002,
       0X02000000, 0X0000f022, 0X02000000 },
   {   0X00080000, 0X005870d8, 0X00000000, 0X00649322, 0X00000000, 0X021c7298, 0X00008000, 0X00201000,
       0X00208202, 0X0058f0fe, 0X00000000, 0X00000000, 0X00000020, 0X00000000, 0X00000002, 0X001d6090,
       0X00249222, 0X00200000, 0X00000000, 0X00000020, 0X02248326, 0X00051016, 0X00000200, 0X00008020,
       0X01008000, 0X04041080, 0X00000000 },
   {   0X004c1010, 0X0097f998, 0X00248232, 0X00009322, 0X0004c226, 0X00ddf0f6, 0X00201222, 0X0224f230,
       0X02048020, 0X00094030, 0X00004420, 0X00699a22, 0X0221e22e, 0X0310c3ba, 0X04fd78d8,
       0X023dd322, 0X00200000, 0X0234c272, 0X0039b32e, 0X02108322, 0X00095b88, 0X00000022, 0X0004832a,
       0X00000200, 0X02000000, 0X00000002 },
   {   0X00080000, 0X00557b8e, 0X00000000, 0X00000000, 0X00000002, 0X00bc5a3e, 0X00000000, 0X00000020,
       0X00000000, 0X003df0ae, 0X00000000, 0X00000000, 0X02008020, 0X00000002, 0X00000000, 0X0065e2b2,
       0X00000002, 0X00000000, 0X00008002, 0X00000008, 0X00000020, 0X00040820, 0X00008020, 0X00008020,
       0X00000008, 0X00002084, 0X06809222 } };


/*
       CONFIGURATION parameters
*/
#define MINLENGTH 5      /* minimum password length */
```

```c
#define MAXLENGTH 10     /* maximum password length */
#define MINNOFIND 2      /* minimum unusual triples */
static short unusual;    /* count of unusual triples */


static void dotriple(m1,m2,m3)
short m1,m2,m3;                          /* all in 0..26 */
{
        if (!(obvtab[m1][m2] & (1L << m3))) unusual++; /* check for triple */
}




static void obvword(word)
char word[];                            /* word to do, max 20 chars */
{       register int i;                 /* for loops */
        register int patcnt = 0;        /* count in word */
        register char ch;               /* working char */
        short pat[21];                  /* pattern of mapped values */
        for (i=0; word[i] && (i < sizeof(pat)); i++)    /* scan until null */
        {       patcnt = i;             /* max value */
                ch = word[i];           /* get character */
                if ((ch >= 'a') && (ch <= 'z')) pat[i] = ch + 1 - 'a';
           else if ((ch >= 'A') && (ch <= 'Z')) pat[i] = ch + 1 - 'A';
           else pat[i] = 0;             /* map into 0..26 */
        }
        for (i=0; i < patcnt - 1; i++)  /* for all triples */
        {       dotriple(pat[i],pat[i+1],pat[i+2]); /* do the triple */
        }
}


/*
        obvious  --  test word for obviousness as password

        Words are rejected for being too short, too long,
        or looking too much like English words.
*/
char *obvious(word)                     /* returns msg or zero if OK */
char word[];                            /* word to try */
{
        register int i = 0;             /* for length */
        while (word[i]) i++;            /* compute length */
        if (i < MINLENGTH) return("too short");
        if (i > MAXLENGTH) return("too long");
        unusual = 0;                    /* no unusual triples yet */
        obvword(word);                  /* try the word */
        if (unusual<MINNOFIND) return("too obvious");   /* too obvious */
        return((char *)0);              /* success */
}


#include <stdio.h>
char *obvious(char *);                          /* external */

int main()
{       char pword[200];                        /* potentially huge line */
        char *s;                                /* status from obvious test */
        printf("Password obviousness checker - try your passwords...\n");
        for (;;)
        {       printf("Test password: ");
                if (gets(pword) == NULL) break; /* read next try */
                if (pword[0] == '\0') break;    /* empty reply, quit */
                s = obvious(pword);             /* check for obviousness */
                if (s)                          /* if nonnull, bad choice */
                {       printf("NOPE. OBVIOUS: %s.\n",s); /* no good, print error msg */
                } else {printf("OKAY.\n");      /* OK, so state */
                }
        }
}
```

The Finishing Touch

By James Larcombe (Wizard)
of DizzyWizard Software.
8-7-95

Next time you think you have finished writing a Risc OS application, don't rush to release it. Too often we see nearly–finished programs littering the file areas of our bulletin boards, which work OK but lack that certain finesse which makes Risc OS so special. I'm not talking solely about PD apps here: look at Impression Publisher. An absolutely brilliant desktop publisher. However, there are several little design flaws in it which could have been ironed out so easily. The point this series will attempt to get across is that any application you write not be lacking on minor user interface details, which are so much simpler to implement than that fiendishly fast QuickSort algorithm that your application relies on!

This is a techie magazine: I'm going to get specific straight away. In each article of the series (which will run on until I run out of ideas!) I'm going to deal with another common and easily solvable problem. Let's look first at an area of considerable importance: graphics. The Risc OS desktop is essentially reliant on graphics. It is a Graphical User Interface after all, and that should not be forgotten. Graphics are most apparent on the desktop through icons.

Under Risc OS 3, it is possible to have several sets of icons, for use with different types of monitors. As the style guide says, you should not presume that all our users are going to have the same monitor as you have. You may even have noticed that a little utility comes on the app. discs called !SetIcons to deal with this. Applications should be aware of this.

You may by now be thinking: "Ah-ha! The Wimp handles this automatically. All I need to do is have several different !Sprites files, each with a different prefix, and they will be automatically selected." Well, bear with me.

The WIMP *does* automatically select which !Sprites file to use. This file is scanned on directory opens, and should be iconsprited by !Boot anyway. It should contain the application's own icon and any file icons it refers to (small and large). A different set of sprites should be designed for each different monitor type: see the table below for what the spritefiles should be called.

Filename	Monitor type	
!Sprites	TV-res sprites (standard should ALWAYS be present)	(Mode 12)
!Sprites22	Hi-res colour sprites	(Mode 20)
!Sprites23	Hi-res mono sprites (rare, but not extinct)	(Mode 23)

These are selected automatically, and if they aren't present then !Sprites is used. As a quick digression, it's worth getting someone good at art to do your icons, so they look decent. Anyway, don't force hi-res icons, like they do/did (can't remember) on the AU coverdiscs. This looks absolutely horrible on TV res monitors.

Now, obviously these sprites are loaded into the WIMP pool. However, you should **not** load all your app-specific sprites into the WIMP pool, because they will no longer be needed when the app quits. What you should do is define your own sprite area (ideally using some memory manager utility that supports sliding heaps like the one in WimpExtension, or use dynamic areas on Risc OS 3.50) and load the sprites into there when your app loads.

The problem is, the WIMP obviously cannot auto-load your own specific sprites for you, and therefore you may think that the auto selection of monitor types is useless. However, Acorn have anticipated this and have provided a SWI for your delectation which you should use before loading your sprites. Here is the info.

```
Wimp_ReadSysInfo      (&400F2)

Entry:
      R0 = 2

Exit:
      R0 -> Null-terminated
            string: see
            below.
```

NOTE: This SWI can also be used for other purposes, for example R0=0 exits with R0 set to the number of active tasks. Irrelevant for our current problem however.

The null-terminated string returned by this SWI can be "22", "23" or "24", for hi-res colour, hi-res mono and standard TV-res sprites respectively.

It doesn't take much imagination to work out how to use this SWI: the easiest way to deal with it is to have three sprite files within your "Resources (.UK.?)" directory, called "Sprites22", "Sprites23" and "Sprites24".
Then to find the correct file you need only to append the returned string to "<App$Dir>.Resources[.UK].Sprites" to get the fully correct filename for the current monitor setup.

Unfortunately for Niall (!) this SWI (or at least this item of the SWI) is not available under Risc OS 2, so in these conditions just use the standard sprite file ending in "24".

I hope this makes some of you think, and I hope the information is mildly useful. Thanks to Ben Harris for pointing all this out to me in the first place!

NEXT ISSUE: Iconising: bring an end to meaningless iconised titles!

Written by James Larcombe.
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BBS Security - Special Article.

BBS security

This is an article for Frobnicate. It is a much-much shortened version of the original text.
Due to the nature of this article, the full version (about 45K) is directly available only to known Acorn SysOps.

ArcBBS is by nature fairly stable and hackproof. However, incidents can happen both on the user end and the SysOp end.

Classification:
~~~~~~~~~~~~~~~~~~~

Incidents can be split into three categories:

User end:
    1. Harmless snooping.
    2. Hacking.
    3. Destructive activity.

SysOp end:
    4. Harmless looking.
    5. Alteration.
    6. Destruction.

1. Harmless snooping:
    Here the user has somehow managed to get somewhere they shouldn't get, or there is a loophole in the filebase system.

2. Hacking:
    This is very similar to '1' above, and likely to be the de–facto category if our user was to thump D(ownload), Z(modem) and get a copy of, say, private files. This method is also found upon the user pressing various keys that aren't listed on the menu. If your menu is sparse, it might be worthwhile defining some keys to log that they've been pressed. This, though, wanders into the realms of '1' above. Note that you'd need to jump to a duplicate menu with no prompts or menu file. The idea is the user is unaware that

anything has happened. If some keys redraw the menu, and others don't, it will arouse suspicion.

3. Destructive activity.
    This can occur mainly in three places:
    1. Via the BBS's SysOp Utils or Command Line.
    2. Via a door.
    3. Via the modem.

    1. Via the BBS's SysOp Utils or Command Line:
    Some parts of ArcBBS (like SysOp Utils) can be called by a script by anybody, but access restricted in the BBS CLI. To demonstrate, add two branches to your main menu. One to the script that runs the UTILS command for you, and another to enter the BBS CLI. Type UTILS in the CLI, nothing will happen. Via the script, up it comes.
    Don't forget to remove this!

    Now we all know that these facilities are needed, but each and every step of the way, you should have a GOTO_P or GOTO_IP command. This should have a different password for each item/level. You *can* write the passwords down in, say, your wallet. If you wallet is stolen, it is unlikely anybody will know what a string of words relate to. It's also unrealistic to expect you to implement tight security and commit all the codes to 'wetware'.

    Also, each step of the way, enclose a string of DOING_ALERT commands.
    This should be useful mainly for you to be informed if a user is where they shouldn't be.
    The DOING strings should ALWAYS be innocent. Stuff like "Netmail" or "FileList" or "Main Menu"... Even "Snooping" should be used.
    NEVER *never* never fill your strings with "User Editor", "MessageBase tweaker"

etc... I, here, have "SysOp Utils" set by the entry menu and everything else. It is reasonable to expect the users to assume there is a SysOp Utils section. It is not reasonable to advertise what's there.
Be wary of the user that continually snoops when you are on-line in the SysOp Utils and you are the only one on-line. I rarely repeatedly snoop when only the SysOp is online.

Note: Also note people in the ONLINE type doors. My !ONLINE will mimic the 'DOING' display - but automatically update itself as conditions change. There are a few other ONLINE doors, the most notable being SnooperPro by Ricky Sarge. Parlez and SubSpace also produce this display.

2. Via a door:
The weakest link in ArcBBS has got to be the doors, especially ones written in assembler/C (in BASIC, things to elevate you to SysOp status, and things to send OSCLIs are fairly routine. Even in assembler it is still possible to look and find certain dubious things. In C it is much more hidden. If you don't have the source, you can always load the code into Zap and read it, but 'cc' makes code that you wouldn't find in your worst nightmares).
Our principle, one which Andrew Lobel and I fell out over, is to check EVERY utility in use here.

I would advise the same action to you all. Check the doors. Software is supplied FreeWare with an 'as is' and 'no liability' type of notice. Thus the writer, at the risk of his own credibility, could knock up an app to *Wipe *. You would have little legal recourse as the notice relieved the author of liabilities. This is seen in bigger software too (look at RiscOS/Windows etc). If it crashes, it ain't our problem.
The author wouldn't mind much. S/he would have had their cheap thrill at causing mass grief.

Here I wish to quote part of Arcade's event file:

```
|
|Disc copy commands here
|
Copy SCSI::BBS+Mail.!ARCserver.User scsi::Quantum160.$.Backup.User
|
Copy SCSI::BBS+Mail.!ARCserver.Misc scsi::Quantum160.$.Backup.Misc
|
```

All well and good, and will preserve the user log and user records upon a *Wipe action...

...what about the Mail.* directory? The menus? The filebase? Sure Arcade probably has that covered (tape backup?), but need I say that a *lot* of data will be lost no matter how much care you take, and that patching this all together will be an immense pain in the butt?

As normal with BudgieSoft programs, the source is available in plain form to SysOps who ask. It may be as unreadable (or readable?) as the compacted version... But it's what I've written. Never count on the REMs to help. Allow me to quote a few REM lines:

```
WHEN &180    : PROCdumpchat        : REM Print
WHEN &181    : PROCmacro(1)        : REM Fkey  1
WHEN &189    : PROCmacro(9)        : REM Fkey  9

REM  1stWord+ codes:
REM
REM  [1f] - ignore line, control commands.
REM  [1b] - ignore this and next character.
REM  [1e] - expand to space.
REM  [1d] - expand it, and all following [1c]'s to spaces.
REM  [0b] - ignore line, footnote.
```

Sure, some are helpful, but others.....

```
REM
REM  WHAT'S GOING ON??? [Four Non Blondes]
REM  ==================
REM
REM 25 years and my life is still
REM Trying to get up that great big hill
REM Of hope
REM Foreign destination
REM
REM I realised quickly when I knew I should
REM That the world was never of this brotherhood
REM Of man
REM For whatever that means
REM
```

```
REM Into a grace of times when I'm lying in bed
REM Just to get it all out whats in my head
REM
REM And I'm, I'm feeling a little peculiar
REM
REM And so I wake in the morning and I step outside
REM And I take a deep breath and I get real high and I,
REM Scream from the top of my lungs,
REM "Whats going on?"
```

.....are no help whatsoever (unless you want to know the lyrics to the song in question).

Ask the writer for a source. Any *good* programmer, like myself, will happily offer peace of mind as well as functionality.

3. Via the modem:
Hey, the modem is pretty safe. Can't do much to it. Coo-el. You could whammy it with a small 26kV from the monitor, but you're more likely to find irate BT bods than an irate SysOp... What with digital exchanges and fibre optics, ideas like the Blotto Box need to be seriously revised.

I know you're all starting to think this is getting a bit loony, but it *is* possible. AT&T crashed remember? 911 got diverted? Your technology is MUCH less secure than that (should) had been. It's your system, your phone bill, your money.

4. Harmless looking.
There is no such thing as 'harmless' looking from the SysOp's end. All GOTO_P/GOTO_IP passwords are there, as is the facility to patch in a command to the menu. Do you check all menus? DaviD Dade and Dave Coleman, I can imagine would trust each other total control of each others systems. But would I be trusted or watched if I was there?

5. Alteration:
This is the lead on from '4' above, when our little snooper decides on changing something. This is the time to put your foot down, if you haven't before.

6. Destruction:
It should never get to this stage, but a determined person can totally destroy your system (including online backups). The good point, I suppose, is you can

totally destroy their face.

Crisis control:
~~~~~~~~~~~~~~~~~~

You should properly plan what will happen, and why. You *should* plan for a disaster, so if it occurs, it can be pulled off with the precision of a robot in a car factory.

These are the goals, in a suggested order:

    1. Maintain and restore data.
    2. Maintain and restore service.

    3. Figure out what happened exactly and how it happened.

    4. Avoid future incidents, retributions etc.
    5. Avoid looking like a jerk.

    6. Find out who did it.
    7. Kick his/her butt.

The order shown is what I, personally, rank the priorities. Of course, you may have different thoughts. My reasoning is given below, I'd be willing to hear your comments.

I don't mind if you copy this bit and pin it up on a wall. If the main SysOp is off somewhere, and an incident occurs, a co-SysOp or helper may be very unsure of how to handle it. They might not even realise something rank is going down.

If you are governed by a funder or a sponsor (college BBS?), you can bet your last penny on the fact the come the next board meeting, a bunch of techo-incompetents will want to play out a few scenarios that all seem to end up better than yours. Sponsors care about face. Funders care about reputation. SysOps care about data.

1. Maintain and restore data.
To me, the data is of upmost importance. You can replace files, you can replace hardware, fuses, RAM... But when data goes to heaven, it doesn't come back, so it *must* be protected.
There is nothing whatsoever that can take place of a good backup plan. Arcade's backing up the data each night is an example of a good strategy. If you can help it, don't make a

backup on top of a backup. That's a bomb waiting to blow.

As soon as an incident is underway, the first thing you should do is to take a coredump. This allows you to see what is/has happened at your own leisure. This will speed up the process of restoring service.

The next thing is to judge the severity of the attack.
Do you:

    a) pull the user into chat and yell?
    b) yank the line from them?
    c) yank all lines?
    d) freeze the system, have a few beers then return in no fit state?

Hint: Take your coredump in 1Mb chunks so you can load it without buying a 16Mb RiscPC... If you have a 16Mb RiscPC, you have problems. :-)

2. Maintain and restore service.
The next step is to restore the service. Your users rely on you. Whilst getting compliments and thanks may be likened to blood from a rock, if the system goes down - boy will they whinge...

3. Figure out what happened exactly and how it happened.
This it the real challenge, the interesting part, and in reality will rank the most important thing to you (restoring data is boring, playing forensic is fun)...
As I said, by taking an immediate core dump, you can sit down and try to figure out what went down. It also means, if you catch it in time, it'll be impossible for our hacker to return and destroy the evidence, as you'll have a copy of it all.
The ultimate realization is that you may never know exactly what went on, but you will get an idea of what to fix.

My coming "BBSmon" utility may be useful in times like this. It puts a slightly annoying extra load on the system, but by using a combination of ARCbbsFiler_GetStatusPointer calls and Wimp_Messages, it should record *everything* that a user does.

4. Avoid future incidents, retributions etc.

This course of action, unfortunately seems to be a patch-job. Rather than the SysOp engaging in attempting to hack their own BBS, most locate what they *think* is the fault, and simply patch the perceived hole.
In reality, this is far from the actual problem.

Unrelated example:
    Early SysOpChat's would crash both 1.63 and 1.64 of ArcBBS on quit. ArcBBS would sometimes draw part of the menus, and SysOpChat would definitely be gone. But what's going on? Steve Pursey's version worked. John Stonier's didn't. Mine didn't.
    My idea was somehow it was writing over ArcBBS workspace, and I ripped the program apart finding the fault.
    Of course, I didn't find the fault.
    I gave up, and came back later on a long shot. The long shot was to shove in a few Wimp_Polls between closing the window and quitting.
    It works.

I still don't know what *exactly* happened, but it goes to show that some lateral thinking is required, what you *want* to be the problem quite often isn't.
Note the emphasis on *want*. I wanted to believe that workspace was getting trashed as that was a plausible and valid reason. Just not the actual reason.

You must also take care not to alienate your hacker, as a casual looker may wander into the realms of dedicated hacker if you handle the situation wrongly.

5. Avoid looking like a jerk.
Another issue you might not realise the importance of is that of your PR. Did you find out what happened? Did you find out who? Was any private data leaked? Were you back up and running in 30 seconds flat? This may not quite be the world of the Internet vs. the media, but you will still look a jerk if somebody walks in and trashes your data.

6. Find out who did it.
I might as well skip this. Sure, if a user snoops to far, you will know who to have a friendly (intimidating?) chat to point out the error of his/her ways. But if this was a properly

mounted hacking attempt aiming at putting you U/S for a while, you might as well give up. The tracks will be well covered. Even if you do find out or know, you'll legally not stand much chance of a prosecution unless you have absolutely every book to throw. If you get personal and kick ass, you'll likely be the one in court. Sad but true. I can't electrocute a burglar without risking prosecution. The fact the burglar broke into my house and is walking off with my properly is a totally different matter altogether.

7. Kick his/her butt.
This can be done, with careful logging, traces and court orders. But don't hold out much hope. You run a BBS and those in power aren't too sure about this whole idea. BBSs are Internet and Internet is porn.
That's like saying WHSmiths is a sleaze shop, but look at the behaviour of those in power. Totally pathetic.
But if you can discreetly whammy the hacker's posterior quarters...

Another quote:
> Of course, incompetence is a double-edged banana. While we may know this new territory better than the authorities, they have us literally out-gunned.
> One should pause before making well-armed paranoids feel foolish, no matter how foolish they seem.

Scenarios:
~~~~~~~~~~~~~~~

If you are the type of SysOp that likes to get together in a group and debate, well... Here's some fuel for you.

> 1. You notice that at a certain time each day/night, 25 attempts are made on a user's password. That's 8 logons. Later you look in the SystemLog and notice the users chosen don't seem to form any pattern, but the password attempts are all the same, and the timings are the same.

> 2. You get a call from a concerned user saying that tacked to the end of an innocent looking module is some not-so-innocent information on phreaking.
> Six weeks later, the police inform you that

the information here was used to disable the emergency services network in Greater London for twelve hours.

3. A user you know calls in to report that he can't log into his account.
You look and find her account no longer exists.

4. A user reports that the last logon time on her account isn't hers.

5. A user you know calls you into chat and hurls abuse at you. When you discuss it with the user later, she says she was staying at a friends that day and away from the computer. The alibi is solid.

6. You logon one day and find that everybody has SysOp priv.

7. An irate user calls you and says that code downloaded from your system was infected with the T2 virus - and they don't have any virus remover, only an identifier.

8. Looking though the files, you feel like checking out that "GIF of a cat" which will be nice and restful. Upon loading it into FYEO2, you are horrified to see a half-naked girl, aged about 14, dressed in ripped school uniform. She is covered in blood and lying in a pool of blood. The file was uploaded 3 weeks ago and downloaded 37 times.

What would *you* do?

Panic level:
~~~~~~~~~~~~~~~~

Like the 'RiscOS3.80' distribution demonstrated, some things make for panic and swift action. However what if that same file was uploaded as "printer dumper" module or something. Or what about a pædophile GIF uploaded as "GIF of a cat"? Panic should be assessed before applied. The file in question might have been around a while. It might be a hoax, like the RiscOS3.80 patch.

Snooping:
~~~~~~~~~~~~~

Snooping is placing some form of monitor on the system in a hope to anticipate the future actions of the hacker. ArcBBS offers an ANSI snoop on the line.

Tracking:
~~~~~~~~~~~~

This is using system logs to assess what the hacker has done so far. My coming "BBSmon" utility will aid this if used at the right times.

Psychology:
~~~~~~~~~~~~~~~~

Do you let the hacker romp? Do you clear up after the hacker? Do you try to box him in? Do you send him messages? Do you pull him into a chat? Or a cooler psychology would be to hold their line open (put a retainer voltage on the line). Sadly, with exchanges like SystemX, SystemY, TLE4 and AXE7 - this is no longer possible.

Finalisations:
~~~~~~~~~~~~~~~~~~

1. Telling the world.
It's not unusual for a SysOp to contact other SysOps who could take over certain aspects of the affected system, from providing pointers to replacing the bugged mail system to provide a continual mail facility for all other users (depending on the severity of the situation).
It is, likewise, important to let the world know when you are closed for good or up and running about. If you have major probs, be cautious of giving out timescales (look to Acorn and the 486 card for reasons why not to give out timescales...).
Don't forget to write up a detailed report for your co-SysOps so they can amend their system if necessary, and thank those who have helped.

Also, you'll be left the fun task of explaining what happened to your users.

2. Remove the patches.
You might well have gone a bit loony and patched in loads of tools to chart everything... every keypress, every response, every SWI call, every time a molecule blows off. Most will interfere with system performance - utils are like that.
Other utils may be worth nicking by a clever hacker. Find out what the monitoring util is looking for, and you can kill it back (like the Extend 3 supposedly barfs all over !Killer).
Likewise a hacker that knows your tools will know what to avoid.

3. File restoration.
The most difficult part could come with file restoration. You might get off lightly with no physical damage, you might have had your filebase wiped. The more usual situation will be that you lost that days file uploads, the rest being on your last backup.

4. Policy.
After an incident is a good time to revise your policy and come up with new ideas. Do you wish to channel all uploads to a certain file area (like here on Encina) so everything has to be validated, or is it sufficient to let your users upload directly into the filebase (like on Arcade). Maybe you'd prefer a hybrid? Will you kill private mail for new users? Will you kill the 'guest' account? All sorts of follow-ons.

5. Liability.
Who is ultimately responsible? This depends on the incident, and takes a variety of forms.
If personal details were hacked, are you liable for any grief that user may subsequently receive? Did you take adequate prevention? Did you authorise a file by mistake?

An example of the latter, and I think we know the story behind this one:

```
Searching:Arc.Comms.BBSs
1391 ArmBBS057      178K (Archive) downloaded two times Validated
Dir No. 54  Uploaded 21/01/1995 by Godhak (1)
Short Description: !ARMbbs v0.57 Archimedes BBS server
```


6. Spin control.
Spin control is altering perceptions about your incident rather than playing with the facts.

Consider:

    1. To keep our system secure, we decided upon disconnecting it whilst reviewing all of our software.

    2. Because of a bug in our software, we were forced to shut down our system to prevent further damage.

1 is likely to produce a praiseful view of the way you handle your system and it shows a certain 'we care' attitude (keep our system secure).
2 is full of heavier words like 'forced' and 'shut' and 'damage' and, in short, you'll look a jerk. Refer to crisis control part 5. :-)

7. Discouragement.

The amount of attention the incident receives will determine largely whether or not it'll happen again. Don't give out details to those who aren't a SysOp - especially the computer literate that aren't involved as you might end up with problems from 'copycat' hackers (wannabe's). Claiming your system is invulnerable is stupid and likely to attract those that enjoy proving people wrong.
Claiming your system is the most stable is also a fallacy as no system has a guaranteed stability. This is an Acorn microcomputer remember? Not an autopilot. A good example was Andrew Lobel telling me I could point off of him as his system was "totally stable" and "more stable than Arcade". The fact that his Binkley is a bit naffed and doesn't support it's protocols properly... Human error there (other Bink's work!).

You should stress the hard work you put into repairs, and the inconvenience caused to legitimate users. The idea is to portray the hacker as an immature and inconsiderate. Don't make the hack out to be "so simple I could do that with a keyboard and and my nose" or the other extreme "wow, that was so complex you brilliant hacker you".

8. Press:
In the realms of ArcBBS'ing, it is unlikely you'll get much media attention - but then again you might.
Tell everybody involved to reply simply "No comment" to *anybody* that is not involved, even a legit. user.

9. Guest accounts.
The policy of providing Guest accounts is hotly debated in Unix/VAX circles as it can increase a hack potential by a factor of up to 1000.
However this is ArcBBS, not a fully blown OS, and a properly set up Guest account is not likely to cause much harm.
On 'alien' BBSs, I log on initially with a pseudo. I don't know the system. You must be joking if you think I'm going to give a new and unknown BBS all my personal details. There is a lot to be said for guest accounts. Don't forget to disable e-mail and file uploads.

10. Sponsoring.
This is more relevant in a school BBS. The idea is pupils who are granted access to the system, when they don't require it, should seek 'sponsorship' from a member of staff who will take responsibility for this persons actions.

11. No guest policy.
Is a dangerous one to adopt, as then legitimate users may well invite their guest onto their account. There is the obvious danger here.

Some protections you can employ in your software:
~~~~~~

1. Checksumming.
This is mainly designed to stop unwanted tweaks and decompacting, but it also (should) appear if a virus appends itself to the code. Not that I've dug out my copy of the T2 virus and tried it...

2. Regular reinstalling.
You could periodically extract the main code from a read-only archive to where it should be. This is the approach adopted by TRACK users, and is also called 'refreshing'.

3. File properties.
"BBSmon", when installed, will soon hardwire into itself the sizes of main files like !ArcServer.!RunImage, and do a running comparison. This means it needs to be fixed each upgrade, but I hope to make that as simple as possible.

Password security:
~~~~~~~~~~~~~~~~~~~~~~~~

Both ArcBBS and ArmBBS encrypt their passwords using a 1-way process. Archiboard doesn't.

1. ArcBBS:
This system is rather tight, password wise, there is no facility for verifying a password.ArcBBS is also case-sensitive. A tough nut to crack, and well done Hugo. :-)

2. ArmBBS:
Is also fairly tight, but has a mode whereby you can validate a password. It won't tell you the password, just whether you got it right or wrong.

3. Archiboard:
Has a lot going for it in the fact that you can't do much without first entering the password. However, once you've entered the password - the system is lying at your feet. Everybodies passwords. Getting the initial password is pretty easy if you are 'there'.

Passwords:
~~~~~~~~~~~~~~~~

A feature missing from the three systems above is 'Joe' checking. A 'Joe' is where the password and username are the same - something that happens all too often. It now seems, by the way, that an intentional idea or a bug? I'm not sure which, but press Return (for no password) in ArcBBS and you will be locked out. Hugo says I've buggered the script. By how can one bugger a line that says simply:
        do_set(10)
Hmm... Not much I can tweak there. If it's a bug, it gets my vote. Users without passwords are stupider than stupid itself (heavy emotions).

There is a popular idea that every machine has a Joe. On my BBS, not including the Guest logon, my userbase is about 45. I had two. I'd dread to consider how many a big BBS like Arcade or Digibank has.

A good password is one that is:
        * Not a mutation of the name or address ("yarruM drahciR" is easy).
* Not something the person likes (any body that knows me might try "Dire Straits").
* Not your girlfriend (anybody that knows me might try "". :-)).
* Not machine generated. My user ID at Bridgwater College was "1TD10", password "lbjsmvlq". Horrible horrible horrible.

Refer here to the 'Password obviousness checker' source in this issue.

The operation of this program is:

The algorithm used requires that the length of the password be within configurable length limits, and that the password not have triplet statistics similar to those associated with words in the English language. This is an inversion of a technique used to find spelling errors without a full dictionary. No word in the UNIX spelling dictionary will pass this algorithm.

Users should be advised to pick a password composed of random letters and numbers. Eight randomly chosen letters will pass the algorithm over 95% of the time. A word prefaced by a digit will not pass the algorithm, although a word with a digit in the middle usually will. Two words run together will often pass.

Statistics for the in-built table:
        Table of triple usage in text
        24511 words were used to make this table.
        The words came from the files:
                /usr/dict/words
                obvpats.lp
        The table is 30 percent populated.

```
#define MINLENGTH 5     /* minimum password length */
#define MAXLENGTH 10 /* maximum password length */
#define MINNOFIND 2     /* minimum unusual triples */
```

This program is lean, mean and green. The only word I chanced upon to be 'okay' is "UnixLib", oddly enough. Everything else I fed to it was no good - I've recently fed it the entire Ovation dictionary... See how it goes. I earlier fed it some 3000 A-words, and not one was okay. [hyphenated words are called okay 'cos of the hyphen. Ignore.]

Here is an obey file to feed it your own passwords file, in CLI:

```
Spool <Obey$Dir>.Results
Run <Obey$Dir>.!RunImage { < <Obey$Dir>.Dictionary }
Spool
```

And in a taskwindow:

```
TaskWindow  "<Obey$Dir>.!RunImage { < <Obey$Dir>.Dictionary }" -
wimpslot 16K -name PasswordChecker -quit
```

Conclusion:
~~~~~~~~~~~~~~~~
Security IS important, you CAN do something about it.

Thanks:
~~~~~~~~~~~
Thanks to everybody involved.
Thanks especially to (in no order):

    DaviD Dade,
    David Coleman,
    John Stonier,
    Steve Pursey,
    Andrew Lobel (yes, really... <grin>),
    Ricky Sarge,
    Niall Douglas,
    Richard Sargeant (had to fit in two credits for him, VVVV helpful),
    Robin Abecasis (*strstr etc... :-)),
    Hugo Fiennes,
    Keith Hall,
    Keith Marlow,
    Agent D.Masterson
    Dr. J.Turnwald - Computer Crimes Unit,
    Amy Hopkins,
    Whoever invented pasta (I'm munching through a platefull right now).

Finally, thanks to everybody else uncredited. If you helped and you want a credit, netmail me.

This is a 'living' work. I'll stroke it and tuck it into bed, but you must feed and water it. This is by no means a definitive guide to BBS security, and indeed it has many omissions which sadly the two spooks couldn't fill as the law is somewhat undecided...

If you get computer related grief beyond your capabilities (sick GIFs, bad viri etc), here's a number:
Scotland Yard Fraud Department, Computer Crimes:
0171 230 1109 or 0171 230 1244
Don't ask for Turnwald... Wrong Computer Crimes Unit. :-)

Written by Richard Murray. Last update : August 11th 1995.

Misrepresentation?

```
Area    : Netmail
From    : Charles Baylis
To      : Richard Murray
Subject: Misrepresentation in Frobnicate
Dated   : 22:53:33 07-Jul-1995
Delay   : 35 days, 21 hours
```

Hi there!

I've just d/led Issue II of Frobnicate, and I was disappointed to see that you credited AL with his scroll text. As you should realise from his incompetence with CastAVote, he would never have been able to produce that scrolltext if I didn't do it for him! I demand an apology in issue III! :-)

```
 __
/  |_  _  _ | ' _    Rooksoft Programmer
\__| ) (_\ |  |_ | (-'   FidoNet#2:257/110.1
```

PS What happened to the promised Impression version?

Erm, erm, erm... Sorry? Yes - well - the program didn't identify itself as being anybodies, but it makes sense now you mention it. So *SORRY*. :-)

There was no Impression version *promised*. I said I would look into it, and Chris Jackson (I believe) has begun a conversion - but as you'll appreciate - it isn't top of his priorities.

PS: What's your scrolltext algorithm? It's really quite fast.

Reader's Letters

Send your letters to:
"Richard Murray" at 2:254/86.1 (FidoNet) or "rmurray@digibank.demon.co.uk".

Charles Baylis; Misrepresentation.
Refer to the article on page 21.

To Mr.R.Murray and your Frobnicate
Readers section....

Yes unfortunately I do not have
ovation, like your other reader who
was only able to read the text
version....

First of all well done, and thanks for
the plugs for my BBs.

I read your comments on Armbbs and
would just like to add my twopence
worth!
No real comments on Armbbs, but on a
few occasions when I have 'polled' an
Armbbs system, on completion of the
poll I seem to still stay
connected..., I don't know how long
this connection would last for, but so
far I have been monitoring the calls
and have hit abort to drop the
carrier...

The current leader as you say 'Arcbbs'
is slowing lagging behind, as I write
this, nobody, including the two Daves
have managed to contact Hugo for well
over two months!!!

Because of the lack of support for
1.63 and the ongoing problems a
certain SysOp has been having, he has
decided to 'kill' off his Arcbbs
system and spend his money on another
host software.

I just looked, the last beta release
was March... for Arcbbs....

Steve Pursey, 2:254/86

Unfortunately, as I have explained, I don't like
Impression. Do you have Impression?
You are very welcome to the "plugs", that's what
the adverts page is there for.
I can't help with the ArmBBS problem. Try asking
Keith Hall.

ArcBBS may appear to be lagging behind, but it is
powerful and comprehensive software with a lot of
oomph! left in it. However, with the recent closure
of The Serial Port and Hugo's apparent
disappearance - the future of ArcBBS is unknown.
ArcBBS is Hugo's hobby - so he should continue
with it, although now with all that's going on it's
likely his heart won't be in it for a while. Look at
Acorn's main distributor. This is a bad summer, and
not just the heat.
We live in hope.

So how much uploading do you do for
Frob?
SW

It is nice to see somebody interested in the "behind
the scenes" stuff. Let's assume Frobnicate makes a
600K archive (it is currently about 800K
uncompressed, and not yet finished). We have
600K for Ovation and another 600K for the
text&graphics version. That's 1.2Mb. Now upload
that to the 'three' BBSs and we are looking at
3.6Mb (14400bps will manage about 1Mb in 12
minutes). Add a hypothetical Impression version,
and it's 1.8Mb over 3 BBSs or 5.4Mb in total - about
an hour of uploading. That's why I've decided to
upload the text&graphics versions to all BBSs, and
keep the pretty ones on Digital Databank. After
spending over £2000 last year on British Telecom -
I can't afford it any more.

If you have something you'd like to say in
Frobnicate, then please send an email to:

"Richard Murray", 2:254/61.1@Fidonet
or
"rmurray@digibank.demon.co.uk"

The usual rules about message editing apply.

Feetch, feetch!

This issue's *really useful software* review is going to look at "RecError" by Justin Fletcher.

This useful little module is designed to intercept any error boxes that appear and log them.

Why? Well, say you are running a BBS or some other unattended operation. Using the NoError module will 'cancel' the error for you. But is it a good idea to do that without at least recording what the error was?

To Justin Fletcher for an explanation:

How it works
 The module uses the WimpSWIVe module by Andrew Clover of Doggysoft. This allows modules to easily patch calls to the Wimp SWI base, and allows RecErrors to get in on all calls to ReportError and to send the information into a file for looking at. The file is opened only when needed, so it is perfectly safe to do silly things like *Close and other pointless things. The file also has it's type set after each error.

This useful little utility is available on all good bulletin boards. The right-hand column shows what you should expect from RecError.

Rating: V.Useful   90%

```
Another useful JF utility:

    Isn't the Filer boring ? Filer+ adds some
functionality to it, but it is still dull.
Whilst on Larger we have gorgeous slabs; in
all the other windows we can have a nice matte
effect with the tile_1 sprite (if you have
Wimp 3.22+), and although this looks ok, it
isn't great.
    So to relieve you of this boring omission
on Acorns part (yet another), here is
Filer+Patch. This is designed to patch the
module produced by the Filer patch program (©
Jens H Oveson), so if you haven't got the
FilerPatch, you cannot use this.
```

```
**ERROR**
  Error box title : Error from Edit
  Message         : This does not look like tokenised BASIC.

**ERROR**
  Error box title : Error from SCSI Filer
  Message         : Disc not understood - has it been formatted?

**ERROR**
  Error box title : Error from Edit
  Message         : Unrecoverable internal error (Data Abort);
preserving files in SCSI::System.$.!Scrap.ScrapDirs.ScrapDir.Edit
before exiting

**ERROR**
  Error box title : Error from Edit
  Message         : Data Abort

**ERROR**
  Error box title : Message from FidoMail
  Message         : Emlyn Owen is not in the address book. Add?

**ERROR**
  Error box title : Error from Pinboard
  Message         : Target error - (0B/00) Aborted command

**ERROR**
  Error box title : Error from Ovation
  Message         : You cannot link a frame with itself!

**ERROR**
  Error box title : Error from CastAVote
  Message         : Invalid data header (test operation ; vote
#-1)

**ERROR**
  Error box title : Error from Ovation
  Message         : Not enough memory! Make more room by closing
files, closing down other applications or reducing system memory
allocations from task manager.

**ERROR**
  Error box title : Error from unknown task
  Message         : <Obey$Dir>.ThrowUp not a file

**ERROR**
  Error box title : Error from HappyHak 1.00dev
  Message         : SWI name not known at line 2410

**ERROR**
  Error box title : Error from unknown task
  Message         : Assembler limit reached

**ERROR**
  Error box title : Error from Filer
  Message         : Unable to access media
```
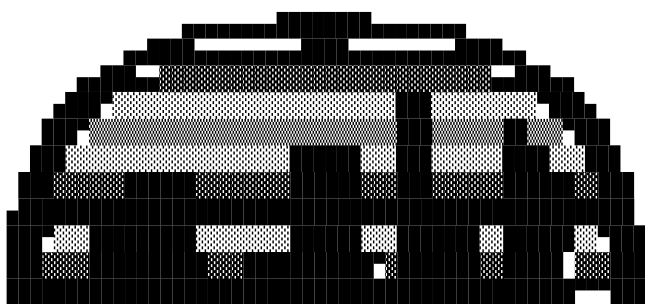
Notice Board

I hereby wish to announce the death of Bert the budgie, who died on Wednesday (16th August 1995) from stomach cancer.

Many of you that downloaded BudgieSoft programs will know Bert as "the budgie on my shoulder".

Requiscat In Pace.

If you would like to see what can be done with ANSI, then why not call SKYLINE ONLINE BBS on +44 0181 255 6912. The modem is a slow 2400bps, but a 14400bps is not far away.

Take my word for it – this looks *much* better in colour!

Following Frobnicate's recent review of ArmBBS, it has been noticed that Keith Hall is asking people to contact him if they are interested in using this capable software.

If that includes **YOU** and you have not yet contacted Keith:

```
The Plasma Sphere BBS   .-`T`-/-.      Fidonet#2:250/219.0
    Home of ArmBBS      /--\V _/\           2:250/222.0
                        !/\_ \./_ !
    24 hours a day      ! /V \ \!           2:250/2000.0
                        \V / ! /
                         '-/_!-`
```

Over 4409 files (178MB)

+44 01925 757920 / 757921

I wonder if anybody noticed the text effects new to this issue, like "proper" quotes, en-marks and em–marks, fine ligatures, accént mârks and more...

Next Month
(hopefully)

The rise of ASCII from Baudot and EBCDIC.
Floppy/hard discs - how they work.
Know your SysOps for the Oct. Acorn show.
Software Copyright.
Simple Centronics Control Interface.
The Finishing Touch.
And more, yet more.

Out in early September. Don't miss it!

ArcBBS SysOps
(and ArmBBS tooo)

Is your BBS lacking a certain je ne sais quoi? Maybe BudgieSoft can help...

CastAVote	The popular voting door, now comes with a smart install utility, an auto-configure utility, votes editor and many little support programs. Basic door with display output to support any BBS server.
DoorDocs	Maybe you were thinking of writing your own door? Maybe you need this invaluable reference.
HappyHak	Go on... Wind up your users with this one!
InfoSys	Alpha-release mail processor program. Not blinding yet, but some good stuff coming soon.
Linker	Link your BBS users to a blockdriver. On-line Internet door? Tested calls via ArcBBS local logon to DigiBank and Arcade. This little BASIC program is better than 80% efficient. :-)
ONLINE	This *exactly* mimics the ArcBBS ONLINE menu command – except it automatically updates itself. Fascinating stuff!
Parlez	The popular user-user message/chat door.
ReadTasks	A simple little on-line task list. Our 1st door.
ReadUser	Userful to restore data if something goes wrong. This will list all information on your users in text format.
SysOpChat	Our robust split-screen SysOp chat door.
TopFeatur	Techies only - this will create a nice display of your top 16 items.

Contact:
"Richard Murray", 2:254/86.1@Fidonet
for more information.