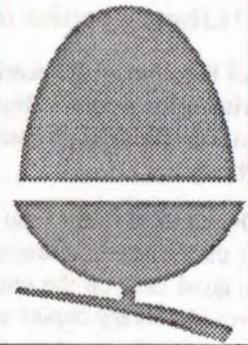


Developers' Newsletter No.21

February/March 1991



General news

○ Acorn Computers Ltd - mission statement

In order to ensure that Developers are aware of the areas in which Acorn directs its most significant effort, it may be helpful for you to read Acorn's mission statement which is as follows:

"Acorn will bring to its customers innovative personal computing products and services in partnership with third parties and achieve wide recognition for its quality and success."

We expect this to influence much of our work and our relationships with the third parties that all form part of the Acorn world, i.e. you! We hope you see noticeable changes to the good as a result of this. The Developers' Support scheme is just one aspect of this.

○ Developers' Support Scheme

Subscriptions have been pouring in for the new Support Scheme. A copy of the RISC OS Style Guide has been sent to all whose subscription has been received. Acorn will shortly be contacting a few suppliers of RISC OS compliant software with a view to inviting them to become the initial group of Key Developers.

The subscription deadline for continued support for those Developers previously registered (in 1990 and before) is 31 March. After that, Developers who find they had intended to subscribe, but have not done so, will be welcome to reapply for registration.

○ RISC OS Style Guide

In response to popular demand, additional copies of the RISC OS Style Guide (RRP £9.95) are available from this department at a discount price of £7.56 per copy. There is no VAT chargeable since the Style Guide is rated as a book. If you wish to purchase copies please make out a SEPARATE order and make your cheque payable to Acorn Computers Ltd.

Orders for the Style Guide which are incorporated with other items will be returned to you for amendment. Style Guide orders are being fulfilled from this department, not from the warehouse which supplies other items.

If you have comments on the content of the Style Guide, please feed them back to Ian Sewell for the next edition.

○ Archimedes 540 System and R200 Series

Demand for these items has been exceptionally high. It is hoped that all current Developer orders will be fulfilled by the end of April. If you wish to place an order, it has been agreed that your cheque will not be banked until Acorn is able to supply the required equipment.

○ Archimedes 540 Technical Reference Manual

Please note that the revised RRP for this manual is £65.00. The discount price on your October 1990 Price list is therefore incorrect. The revised Developer Discount Price for the Archimedes 540 Technical Reference Manual is £49.40.

The manual is currently being printed and is expected to be available during March.

○ The Acorn Education Directory

The Acorn Education Directory was produced in time for the BETT show in mid-January. Thank you to all those who supplied information. A copy of the directory has been sent to each supplier whose products are included so that any errors may be highlighted. As amendments are received, the database is being updated. If you were not one of the contributing suppliers, but you would like a copy of the Directory, please ask us for one.

We now wish to extend the scope of the database to cover all products available for use with Archimedes or BBC A3000 systems or with Acorn's Unix systems, not just those applicable to education. We will also include hardware/software packages sold as complete systems.

The intention is that, should a directory of suitable products be required for a given purpose (e.g. Industrial Training, Image Processing, Home Users), or if a complete Acorn directory is required, it can be produced from the information on the database.

A form (plus a sheet of notes for guidance on its completion) is enclosed for you to complete if you have products either available or close to completion. Please copy and complete it when you have products to be added and retain the blank form for future use.

○ Library copies of your products

All Developers are reminded that one of the membership criteria for Acorn's Registered Developers is that they provide finished product samples for the Acorn ISV library.

Owing to the very tight time schedule for the production of the Education Directory, some products were included in good faith on the understanding that suppliers would provide library copies after Christmas. In the New Year rush of activity, some of you have forgotten to provide the library packs. Please could you rectify this as soon as possible?

More than one supplier has asked why his products have been listed as "Contact supplier" rather than "Available now". This differentiation reflects the provision, or otherwise, of library copies. It also allows products expected to be completed within the lifetime of the Directory to be included without suggesting that they are available "off the shelf" from the day of the Directory's publication.

Acorn reserves the right to exclude from future directories any products of which library copies have not been provided.

○ Acorn's Level 4 FileServer and Broadcast Loader products

These products, mentioned in the previous newsletter, are expected to be available in quarter 2.

○ RISC OS Programmer's Reference Manual

The PRM has been temporarily out of stock. It is now available and we expect to fulfil outstanding orders during March. We apologise for any inconvenience its unavailability may have caused.

○ End user licences and lending libraries

One Developer has the following experience to pass on to you. A product was ordered by a local authority, an employee of which rang the supplier concerned to enquire about the terms of the end-user licence.

It transpired that the authority concerned purchases software which it loans out to teachers for a term at a time for use in project work. Clearly the teacher had no need, therefore, to purchase a copy of the software. If such library activities are widespread, then software suppliers are losing considerable revenue.

The particular case was resolved by the use of an amended site licence. This may be the way forward for other suppliers who become aware that the terms of their end-user licences are being thus contravened. If this concerns you, watch out for local authority (and similar)

libraries. They may not be aware that they are infringing copyright in this way.

You should also be aware that teachers' centres, where they exist, often buy software which is borrowed for short-term on-site evaluation. This activity is clearly in the interests of teachers, suppliers and LEAs alike.

○ Aggressive advertisements

From time to time our attention is drawn to promotional material from third parties supplying products to users of Acorn platforms. Concern is expressed when the producers of such material have used "knocking copy" to promote their product at the expense of another suppliers. Whilst suppliers are free to do this, within the constraints of the law, we would ask you to think twice before deprecating another product within the "Acorn World". By all means point out the strengths of your product, but let's aim to leave the customer with a positive view of the choice he is presented with.

○ Communications

Please remember that all communications (technical enquiries, orders etc.) should be marked for the attention of Sue Wall in the first instance and should quote your Developer number. Other Acorn personnel may answer your enquiries but you should not refer subsequent queries to them.

Recently, delays have been occasioned when individuals dealing with high-priority enquiries have been interrupted by Developers calling them direct. They have been asked to request that such people use the proper channels of communication.

Please remember also to quote your Developer number when calling by telephone and when sending email to ISVQuery@acorn.co.uk.

Additionally, my technical colleagues have asked that I remind you that you should make any complex technical queries in written form, by letter, by email or by fax. Experience has taught us that queries received in written form ensure more accuracy in response.

With the increasing use of facsimile messages it may help if we give some information about their use. Faxes often arrive with the text almost illegible. Please use a clear typeface. Computer listing printout is particularly poor when transmitted. Please ensure that the return fax number, your name, company name and developer number are included and that there is an indication to whom the fax is directed (e.g. Sue Wall, Technical Support). One further note, faxes and letters are given equal priority with regard to response; faxes are not necessarily given priority over other forms of communication.

○ Change of location

Towards the end of March, the Technical Support team will move to Acorn's Fulbourn Road site. The address there is:

Acorn Computers Ltd
Fulbourn Road
Cherry Hinton
Cambridge
CB1 4JN

Until you hear otherwise, we may be contacted at the normal, Newmarket Road, address. Note that either address will result in delivery to the team provided that it is marked for the attention of Developer Support.

○ Answering machine

Just a reminder that there is a dedicated line for registered Developers to which an answering machine is attached at all times. You can use this number to leave a message.

The number is: 0223 212011

International news

○ Australasia

Those of you exhibiting at, or attending BETT 91 in January will probably have noticed a high incidence of Australian and New Zealand accents amongst the visitors. No fewer than 9 employees from our Melbourne, Sydney and Auckland offices were in the UK for the show and to catch up with developments within Acorn.

Without exception, our visitors expressed nothing but amazement for the number, variety and quality of the Archimedes and A3000 products on show. They also remarked, however, that new products, some of which are crucial to the development of their markets, often take some time to reach Australia and New Zealand and they have asked us to stress the importance of supplying copies of new software for evaluation, demonstration and promotional purposes in each of the Acorn offices.

Ian Sewell has been dealing with some developers recently regarding copies of specific items of software to be used in a number of Australian State tenders and, whilst the response from these developers has been positive, he would like to encourage others to commit to supplying:

Three full, production-quality samples of each new product to be donated for evaluation, demonstration and promotional purposes in each of the Melbourne, Sydney, and Auckland offices as soon as possible after release.

Two or three further copies, supplied at cost plus a small margin, provided on demand (under the terms of an Acorn Purchase Order), where such products are required to be evaluated outside Acorn (typically by State education authorities).

Demonstration and other copyright-free material for use by dealers.

Products supplied for this purpose can be sent to Acorn in Cambridge (addressed for the attention of Ian Sewell) and he will arrange to have them air freighted to Melbourne (for onward despatch to Sydney) and to Auckland as part of our weekly shipment.

Whilst increasing awareness of new products in Australia and New Zealand is clearly important, ensuring ready availability is, perhaps, even more important. After much discussion, it has been decided that Acorn Australia will, where appropriate, act as a distributor for third party products, using Acorn UK as a consolidator / shipper. Details of the way in which this service will operate will be sent to you in due course but, in the interim, it would be helpful if you would review any current supply channels and arrangements you may have so that you will be in a position to give a prompt response when the time comes. It is, perhaps, worth stressing that this function is not intended to compete with existing supply routes into Australia, but to complement them.

○ Canada

We continue to make good progress in Canada - representatives from three new school-boards were our guests at BETT recently, and all of them without exception expressed their surprise and satisfaction at the size of the Acorn world. As a result of this, Acorn machines are going to be evaluated formally by these boards. It must not be forgotten that it is only the combination of good software with the hardware which makes the offering appeal, so please continue to support the development of this potentially very important market.

○ Germany

Acorn will be exhibiting at CeBit in Hanover (March 13th to 20th) - this is one of Europe's most significant PC and IT shows. You will be most welcome if you decide to visit: we are in Hall 7, stand A49. Please do not forget Germany in your planning, either - whichever way you look at it, Germany is Europe's largest PC market, and can only continue to grow in importance.

A welcome too to our first German registered Acorn Developers - we look forward to a long and fruitful cooperation with you!

Marketing News

○ Acorn's PR

Some time ago we gave you details of Acorn's PR agency. Kindly note that all Acorn's PR activity is now being organised in-house. If you have news/new products which may be of mutual benefit in PR terms, please contact Brian Salter at our Fulbourn Road office (0223 245200).

○ Consumer Business Unit

● Magazines

In Newsletter No. 20, we gave you details of a number of magazines which may be interested in details of your latest and forthcoming products. Omitted from that list were:

Beebug - for BBC Model B, B+ and Master 128

RISC User - for Archimedes users - both from Beebug Ltd, 117 Hatfield Road, St Albans, AL1 4JS.

Contact: Editor - Mike Williams

Archive - for Archimedes users - from Norwich Computer Services,

Contact: Paul Beverley

Please note also that **Archimedes World**, with its free cover disc, has replaced **A & B Computing**.

● A message from Archimedes World

"The disc offers new possibilities for software distribution e.g. software updates, extensions and demonstrations.

We think that the cover disc will prove an efficient way of updating customers without the need for mail order. We'd be happy to make this facility available to Acorn and its independent Developers, given reasonable notice."

○ Education Business Unit

● Acorn's substantial market share

In January, following the arrival of figures from an independent market survey, Acorn published a press release giving details of the company's market share in the education market.

Dataquest now (December 1990) places Acorn 8th in its league of leading pc suppliers in the UK for the first 6 months of 1990, based on estimated shipments. RM moves down to 12th position. We are estimated to have a 4% share of the units shipped, just 0.1% below Apple.

Dataquest are one of the world's leading computer market research companies, so I'm sure you will agree that this presents us with a great PR opportunity.

● ACCESS IT

ACCESS IT, which incorporates the Acorn Networks '91 Conference, is a major training conference for teachers who are developing their use of educational computer systems in schools. In addition to the training sessions for teachers, there will be an exhibition by producers of educational software.

Date: Friday 5 July and Saturday 6 July 1991

Venue: The Jesse Boot Centre, Nottingham University

For further details contact: ACCESS IT Conference Administrator, Sales and Marketing Services, Acorn Computers Ltd, Fulbourn Road, Cherry Hinton, Cambridge CB1 4JN (Tel:0223 245200)

○ Added Value Business Unit

● 1000x1000 Resolutions Available for the first time

The AFB300 from SIMIS is a general purpose graphics board for application requirements ranging from simple framebuffers to high performance graphics. It is designed with a number of options available in order to suit the user's price/performance requirements. A minimum specification board will typically cater for medium resolution graphics (including 512 x 512 multi-buffered) and a full specification board will allow resolutions up to 1280 x 1024, 1024 x 1024 double-buffered, or lower resolutions multi-buffered. For further information please contact Chris Tubbs at SIMIS Ltd 0483 233048

● Computer Based Training

Academy Multimedia System (AMS) is an exciting new multimedia computer-based training system developed by Acorn Computers and Westland System Assessment Ltd. Combining Avanti - a sophisticated authoring and delivery system from Westland - with the Acorn A500/A400 series of RISC-based workstations, AMS is expected to set industry standards for CBT solutions into the next century. For further information please contact: Warwick Hirst at Acorn (0223 245200)

● X/Open Branding for Acorn's R260 Workstations with RISCiX 1.2

Just before Christmas 1990, the X/Open company confirmed that the R260 running the RISCiX 1.2 operating system satisfied the criteria for XPG3 Base Profile compliance. As a result Acorn has beaten many larger corporate members of X/Open in producing a conforming product. In addition, this is one of the first BSD-derived Unix operating systems to obtain X/Open's certificate. For further information please contact Tim Holland-Smith at Acorn (0223 245200).

○ Special Needs

● Touch screens

Please note that, following a meeting between various interested parties including Acorn a generic touch screen driver has been developed by Oak Solutions (a new company formed by the melding of Oak Professional Software and Oak Computers with Software Solutions). If you have software which could benefit by the use of a touch screen, contact Paul Fellows of Oak Solutions (Tel: 0954 211760) for further details.

We understand that there are four main types of touch screen technology:

Type	Resolution (dpi)	% screen blockage
Surface accoustic wave	16-100	5
Resistive	256-4000	20-40
Capacitive	1000	15
Infra Red	8	0

Technical information

○ Hardware addressing

Here follows a repeat of the "Acorn Health Warning" - apologies to those of you who always take note:

Please remember that Acorn reserves the right to change components as necessary. Third party applications should not, therefore, address the hardware directly.

Technology, as you are undoubtedly aware, changes apace. Chip manufacturers change their specifications (correcting bugs, implementing speed improvements etc.). Other opportunities sometimes occur in the lifetime of a computer product. Acorn will take advantage of such advances.

Devices such as key discs, dongles and other hardware-specific protection mechanisms could fall foul of such changes.

○ CLib 3.66

CLib 3.66 has now been released for support purposes following a positive response from those Developers who used it in pre-release form. This version of CLib (or any later one subsequently released) is the only one that Acorn will now permit to be distributed under licence. If you have a licence to distribute an earlier version of CLib with your applications you should now write in for an extension to allow you to substitute 3.66. If you program in C, please ensure that you begin to test your products against CLib 3.66 forthwith.

If you wish to distribute CLib 3.66 and have not asked for the formal release disc, please send an E format 3.5inch floppy disc to me with your request. Please note that if you distribute CLib under licence, you MUST release it in total, i.e. including Sysmerge and the Readme files. The Acorn part number for the released CLib 3.66 is 0270,828 - 01.

○ Sysmerge

Please note that, if you are distributing Sysmerge under licence from Acorn, you should ensure that you are now shipping the corrected version 1.02 rather than any earlier version.

○ RISC_OSLib

For those developers using C, please ensure that any comments you may have regarding RISC_OSLib are sent for the attention of Ian Sewell as soon as possible. Even if you have commented previously as part of a technical enquiry, we would be grateful if you could resend this information to Ian.

We would like to hear about specific bugs still present in C 3.1B, major omissions in functionality and any other constructive input. We hope to use the input this year in improving library support for C developers.

○ C 3.1b and RISC_OSLib

It has been brought to our attention that there is a problem in RISC_OSLib when trying to use the 'txtdit' section. The problem occurs during the linking stage where you get 'undefined symbols' which cause the linkage to fail with errors.

We now have a fix available which can be supplied on request (the fix is an object file which should be included at link time). Please send an E format 3.5inch floppy disc to me with your request.

○ BBC Emulator

Please note that the version of 65Tube on the new BBC Model B Emulator disc is version 1.60. A revised modules list is enclosed.

○ Utilities available to Registered Developers

A revised list of utilities available to developers is enclosed. There is no charge for these utilities but please send a 3.5inch disc formatted to E format if you require copies. Please note that, if you require several utilities you should send more than one disc.

○ Concept Keyboards

Further to the note regarding Concept Keyboard drivers in the October 1990 Newsletter (No 20), it proved difficult for all the participating parties to agree on the structure for one common filetype and set of SWIs. Consequently, three different ones have been allocated and are listed below. Those allocated to NCET are the result of discussions between representatives of NCET, ESPD, The Advisory Unit and Longman Logotron in an effort to bring a measure of standardisation and thus to make it easier for users than was the case with 8-bit technology.

If developers are intending to drive a Concept Keyboard from their software, they should use one of the file structures already available. Please contact the relevant bodies for details. Further filetypes will only be allocated for Concept Keyboard overlays in truly exceptional circumstances.

● Filetypes

Name	Number	Allocated to
Overlay	&C84	NCET
Concept	&CA7	Mikrodaisy
CKOver	&C83	Educ. & Microtech. Unit

● SWIs

Name	Number	Allocated to
ConceptUtils	&42980	NCET
ConceptKeyboard	&81600	Mikrodaisy
CK	&42840	Educ. & Microtech. Unit

● Contacts are as follows:

NCET, Tel: 0203 416994, contact: Tina Detheridge

Mikrodaisy, Tel: 010 47 67 25455, contact: Bernt Pedersen

Educational and Microtechnology Unit, Sandwell, Tel: 021 552 3373, contact: Mike Smith

○ The release 2 printer drivers

We informed you of the Release 2 printer drivers in the last newsletter. These have now been formally released for support purposes and should be substituted for earlier versions where you have a licence to distribute Acorn's printer drivers.

Please note that, like all other Acorn code, the printer drivers are not public domain. You do need a licence to distribute them.

If you have a licence to distribute an earlier version only, please write for the licence to be extended to cover Release 2.

You should always distribute the complete set of drivers with their accompanying text files (the released disc carries the Acorn part number 0270,824 - 01). If you need a copy of the Release 2 Printer Drivers, please send a 3.5inch disc formatted to E format.

○ Acorn items available for distribution under licence

The following is a list of some Acorn items which can normally be distributed under the terms of a binary distribution agreement:

Name	Version	Current licence fee
x !System	0.49	no cost
x CLib	3.66	no cost
Colours	0.52	no cost
x FPEmulator	2.80	no cost
WimpUtils	0.04	no cost
IRQUtils	0.12	no cost
x !Sysmerge	1.02	no cost
Outline Font Mgr	2.44	£100 exc VAT
SuperSample	0.06	included with OFM above
Printer Drivers	Release 2	£100 exc VAT
MsgTrans	0.06	included with PDs above
ChangeFSI	0.82	£100 exc VAT
65Host	1.60	£100 exc VAT

Please note that the licence fees given above are those applying to registered Developers who have paid their 1991 subscriptions. The usual licence fee, where applicable, is £250 exc VAT.

Outline fonts may be sublicensed (Acorn itself supplies these under licence from Digital Type Services of Oxford.). The licence fee for EACH FONT (e.g. Trinity.Medium.Italic) is £250 per 1000 copies. The bitmap fonts may not be distributed.

○ Squeezing RunImages

All RunImages should be "squeezed" (or compressed with whatever proprietary technique a Developer wishes to use). Squeeze is a program supplied by Acorn which takes an executable file* and converts it to a smaller (half size in most cases) file. This results in advantages:

- the disc occupancy is reduced - more things can be put on the disc

- the loading time is reduced - especially from disc or network, but even from hard disc.

- it is harder to binary edit the image

* convert BASIC programs to executable format by adding some machine code to them which does a "**basic-quit @xxxxxxxx,xxxxxxxx" SWI command where the xxxxxxxx s are replaced with the start and end of the program text in memory. BASIC programs can be "crunched" to make them smaller: change multiple spaces to single spaces, rename variables etc (these changes usually make the program run faster, too!).

○ The use of TIFF files

Developers should use the TIFF file system for images with more than 16 colours which don't use the default RISC OS palette. In particular TIFF allows 256 colour images to have palettes specified with 16 bit integers on each of r, g and b. It also allows for 24 bit per pixel images... You can store the palette info with a one pixel image!

The TIFF spec is available from Aldus. You want the "TIFF Developer's Toolkit" from Aldus Europe Limited, Craigcrook Castle, Craigcrook Road, Edinburgh, Scotland, UK, EH4 3UH Tel 031.336.1727.

ChangeFSI can display most TIFF files. !Translator can manage a few as well, though it can't cope with any of the compressed formats (unlike ChangeFSI).

○ A new version of ChangeFSI

A new version of ChangeFSI (v 0.82) is available. Copies have been sent to a number of people who had earlier versions. If you need this later version and have not received a copy, please send an E format 3.5inch floppy disc.

○ PC Emulator patch

A patch is available which allows the PC Emulator to operate in machines with 8 megabytes or more. This is included in the Utilities list enclosed.

○ Application notes

In addition to the Utilities that Acorn provides to its Developers on request, there are some Application Notes available. A list is enclosed of those currently available.

New application notes include the following:

- Documentation for FormEd
- Monitor links

○ Computer viruses

As some of you will no doubt be aware there are now some viruses appearing for RISC OS. News of the "Extend" virus was published on page 10 of the March edition of BBC Acorn User. A small article on the program !VKiller also appeared on pages 20 and 30 of the March edition of The Micro User. Hung Computer Services effectively admits the existence of !VKiller in a screen shot on page 4 of the March edition of Archimedes World (A&B Computing). This exposure will have the effect of increasing end user awareness of the problem (possibly also of encouraging more virus writing).

As always, we must be vigilant for viral infection. So far there are only two known viruses, one is reasonably benign, the other much less so. The following description of the two viruses was written by Richard K. Lloyd of the Computer Science Department of Liverpool University.

● "Extend Virus technical information

This is a module which can go under 8 different filenames (the name is picked at random using the current time as a seed):

MonitorRM, CheckMod, ExtendRM, OSextend, ColourRM, Fastmod, CodeRM or MemRM.

The module itself, however, has the following title string:

Extend 1.56 (08 Jul 1989)

and is always known as "Extend" in the module list. For reference purposes, I shall refer to it as the "Extend Virus".

The date seems to imply that it has been around for some time, which is a worrying thought indeed. It is 940 (&3AC) bytes long and initialises itself as a nameless Wimp task which then looks for Wimp Message 5 (double-click). It attempts either to create a !Boot in the application directory or to append to an already existing one the following lines:

```
IconSprites <Obey$Dir>!Sprites<&0D>
RMEnsure Extend 0 RMRun
<Obey$Dir>.ModName<&0D> ||<&FF>
```

The "IconSprites" line is omitted if it is appended to an existing !Boot. "ModName" is one of the 8 possible filenames. The Extend Virus uses the <&FF> (i.e. decimal 255) byte at the end as a self-check to see if has infected the !Boot file already. Of course, it copies itself to the new name inside the application directory as you would expect. Note the incorrect use of <&0D> (decimal 13) to terminate the lines, rather than the more correct <&0A> (decimal 10).

A shift-double-click does NOT cause an infection, but it DOES claim yet another 1K of never-to-be-released RMA.

I have gone through the entire code and the only destructive thing it does, apart from wasting disk space with copies of itself, is to claim the 1K of RMA for every double-clicked file or directory (eventually crashing the system).

● Extend Virus Execution Count

There was one bit of the Extend Virus module code that perplexed me - why would someone increment a memory location within the module and never use it? At first I skipped this code, but, remembering some viruses on the Amiga, I suddenly realised that the incremented value would be copied whenever the module duplicated itself during a new infection. Now if the original author was smart, he would have incremented the counter IF AND ONLY IF there was a completely successful new infection (in fact, he would have incremented it prior to the new infection and decremented it if the infection failed). However, the Extend Virus module actually increments the counter whenever it is first started (usually via the *RMEnsure appended to the !Boot)...thus the counter does not correlate to the number of infections so far. Because of this, I've decided to call it the "Execution Count" from now on.

● Extend Virus deliberately faulty virus coding ?

When the Extend Virus initialises itself as a nameless task, it does not save its task handle. Hence, when it comes to execute Wimp_CloseDown (only via a *RMKill - it cannot be killed by the Task Manager) it does NOT supply a valid task handle. Thus, opening up the Task Manager afterwards causes it to crash fatally...which isn't nice. I have managed to solve this problem 50% of the time.

The upshot of this all is that if !VKiller is run BEFORE the Extend Virus is, then !VKiller will patch the active virus in RMA so that it shuts down with a proper task handle and the Task Manager can still be safely used. However, should the Extend Virus already be present when !VKiller is run, then the Task Manager will fatally

crash the Desktop if it is opened (or is already open when !VKiller is run).

The solutions to all this are simple:

1. Close the Task Manager before running !VKiller.
2. Do not open the Task Manager after !VKiller has RMKilled the Extend Virus. My advice is to scan/innoculate the infected disc or discs and then hard reset the machine.

Hopefully someone out there in the Public Domain will be able to fill in the 'missing' code - see the FNgettashand() function in the !RunImage source code for more details. If this happens, then the precautions won't be so elaborate in future releases.

● Extend Virus Innoculation

!VKiller can innoculate a !Boot file. This involves fooling the Extend Virus that it has already infected that !Boot file by attaching the following to the end of the file:

```
IconSprites <Obey$Dir>!Sprites<&0A>  
|| This file has been innoculated against the Extend  
Virus<&0A>  
||<&FF>
```

The IconSprites line is only included if a new !Boot is created from scratch AND if the application directory contains an !Sprites file with the Sprite filetype. If the original !Boot was not properly terminated by a linefeed (<&0A>), then a linefeed will be appended prior to the addition of any innoculation lines. Note the critical difference between the Extend Virus infection and the innoculation: the penultimate line is terminated by <&0A> and not <&0D>. This is how !VKiller can differentiate between innoculations and infections.

Please note that creating new innoculated !Boot files from scratch will cause the double-click action to open a directory window to take longer because the applications inside that window have these new !Boot files.

● ArchieVirus technical information

This is a piece of ARM code that is appended to executables with the Absolute (&FF8) filetype. It is 920 (&398) bytes long and has a tell-tale 4-character string at the end of its code, "1210", which is used as an "already-infected" flag. The first instruction of the original executable is saved near the end of the virus code space and is replaced by a branch to the first instruction of the ArchieVirus code.

Here's a complete run-down of what ArchieVirus does when first run:

1. Attempts to infect executables (Absolute filetype) with the filespecs "@.*" and "%.*". In other words, all executables in the current and library directory are attacked.

2. Uses OS_File 36 as a "semaphore" to see if it is lodged in RMA. If a call to OS_File 36 returns with an error, then it hasn't infected the RMA yet, so it proceeds to claim 920 bytes of RMA, copy itself into there and points a claim of the OS_File vector to its new RMA location.

3. The time is checked to see if it is the 13th of the month. If so, the code loops indefinitely, displaying the 45-character message:

Hehe...ArchieVirus strikes again...

Since there is no linefeed present, this will fill the screen with a fast scrolling blur :-). Obviously, Shift-Ctrl will allow mere humans to read it. Interestingly, this is the only place that the virus name, ArchieVirus, is found and this is tricky to spot because it is EORed with &64.

4. Assuming it wasn't the 13th of the month (and NO, it doesn't check for a Friday!), then the original first instruction of the executable is replaced and the original normal code continues from &8000 onwards.

The OS_File vector claim is quite important, because this serves two purposes:

- a. It allows OS_File 36 to return without an error, signalling that the RMA is already infected.
- b. It checks for OS_Files 0 and 10 (Save memory to file), 11 (create empty file) and 12,14,16 and 255 (Load file). If any of these are encountered then an infection attack is activated (see step 1 above).

● ArchieVirus Decrement Count

Yet again, this is a virus that has a strange way of keeping track of infections. A count is DECREMENTED after a successful infection, which is strange indeed. It's as if the author was considering a "limiter" in the code (when count = 0, don't infect anymore), but decided not to include one at the last minute. Of course, it could just be a warped mind - only the author knows the original value of the count, so a simple subtraction will give ONLY HIM the number of infections. By the way, the copy of ArchieVirus I have has its decrement count at 1 in case you're interested. !VKiller will displayed this Decrement Count when the ArchieVirus is detected.

● Possibly serious problem with ArchieVirus

It's quite an obvious problem if you know about RMA and its foibles. If the user issues a *RMTidy or a *RMClear, then the RMA is completely reorganised. Hence, the OS_File claim made by ArchieVirus will be pointing to the wrong area of RMA and is quite likely to cause chaos (a machine freeze is a strong possibility).

● ArchieVirus Innoculation

The 4 character ASCII string "1210" at the end of the executable is checked for existence by ArchieVirus to decide if it has infected the executable yet.

It is therefore easy to inoculate against ArchieVirus in two steps:

- 1) Replace the first instruction of the original executable with the copy held in the virus code area and
- 2) Remove the 920 bytes of virus code and replace it with the 8 character string "Hypo1210" (this was the string originally used by Hugo Fiennes' "Hypothermic" inoculator so I've decided to stick with his convention).

Hence, the executable will shrink back in size to only 8 bytes longer than its original length and will have been inoculated too.

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Note that Richard makes reference to !VKiller, this is a program that he has developed to check for the existence

of, remove, and inoculate against viruses. This program is Public Domain. We are looking into the possibility of making it available to Developers and including it on our list of utilities etc. We have not yet, however, finalised this. We will give you more information in the next Newsletter. In the meantime, however, it is known to be available from:

- 1) SID.
- 2) Richard Cheung of Hung Computer Services Limited (82 Roe Lane, Kingsbury, London, NW9 9BD Tel: (081) 206 2324), a PD Library service.
- 3) Subscription discs from Micro User, from March onwards.

Acorn makes no claim about the quality, suitability, or otherwise of this program but merely notes its existence.

● Enclosures

Revised Utilities List
Revised Released Modules List
Applications Notes List
Product Directory Information Sheet
Acorn product Directory Information Notes

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ISV Department
Acorn Computers Ltd
Cambridge Technopark
645 Newmarket Road
Cambridge CB5 8PB

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