The best-selling RISC OS magazine in the world

we explain how to use the hot stuff

Join the worldwide code-cracking contest

Comparing two ways to program in BASIC

Handling your finances with a portable







FOR ALL YOUR ACORN HARDWARE & PERIPHERALS

INTERFACE	C			WTDA TTAT	0
				XTRA HAR	
25% off when bought with drive	or scanner	etc		Guaranteed 4MB+/sec	
CT's Storm SCSI interface offers unbeatable	lin	010502405		Castle Storm D	٢
performance. Using ISMB/s SCSI components	120,000	1		4GB XTRA 3.5" SCSI	
and our ultra-reliable SCSI FS, Storm's a	Sec 1	1.4		6GB XTRA 3.5" SCSI	
guaranteed winner.		Street &		8GB XTRA 3.5" SCSI	
	Ex VAT	Inc VAT		18GB XTRA 3.5" SCSI	
		S.6. (1996) 5 5			
A30x0 IDE interface kit - 2.5" hard drive		£61.10		VIDEO HA	ŀ
A3020 fixing kit - 2.5" hard drive	£8	£9.40		Fastest on market - externa	
A3/400 IDE interface for 2.5" & 3.5" h.d.		£70.50		use - StormPCI or Storm I	
Storm8 SCSI2 interface - A30x0 A4000	£88	£103.40		4GB Video SCSI external	
Storm16 SCSI2 i/f - A300/A400 A5/7000	£96	£112.80		9GB Video SCSI external	
StormDMA32 SCSI2 i/f RPC Phoebe	£128	£150.40			
StormPCI UltraWide SCSI i/f (Oct '98)	£199	£233.83		18GB Video SCSI external	
Storm16 SCS12/10BaseT Ethernet i/f	£148	£173.90		CD ROM	1
Storm16 SCS12/10BaseT&2 Ethernet i/f	£196	£230.30		inc FREE driver softwar	
					1
HARD DRIVES (BARE,)		Castle Technology's range of CD	
120MB A3000/A3010 interface included	£95	£111.63	4	drives are chosen for their relial	
				ease of use and robustness. They	
120MB A3020 fitting kit included	£59	£69.33		fast access times, and include d	
120MB A300/A400 interface included	£100	£117.50		software. They are particularly s	1Ü
500MB A3000/A3010 interface included	£128	£150.40		for multimedia applications.	
500MB A3020 fitting kit included	£89	£104.58			
500MB A300/A400 interface included	£134	£157.45		4x speed SCSI CD ROM drive	
210MB 3.5" IDE for A4000 & A5000	£45	£52.88	1	8x speed SCSI CD ROM drive	
500MB 3.5" IDE for A4000 & A5000	£55	£64.63		32x speed SCSI CD ROM drive	
1.2GB 3.5" IDE for RiscPC & A7000/+	£59	£69.33		24x speed IDE CD ROM drive	
2GB 3.5" IDE for RiscPC & A7000/+	£85	£99.88	23	32x speed IDE CD ROM drive	
4GB 3.5" IDE for RiscPC & A7000/+	£105	£123.38		40x speed IDE CD ROM drive	
100MB 3.5" SCSI	£39	£45.83		IDE CD driver for Risc PC & AT	10
500MB 3.5" SCSI	£59	£69.33		6x4x2 CD ReWriter inc !CDBur	'n
2GB 3.5" SCSI	£115	£135.13		6x4x2 Ext CD ReWriter inc !CD	
3GB 3.5" SCSI	£139	£163.33		6x2x2 CD ReWriter inc !CDBur	
4GB 3.5" SCSI	£159	£186.83		6x2x2 Ext CD ReWriter inc !CD	
6GB 3.5" SCSI	£239	£280.83		CD ROM fixing kit (data & aud	"
EXTERNAL SCSI	CACE	C		CD T(7
for hard drives CD drives & remo				7 SCSI CD towers	۷
FREE headphones and data cable w	orth over t	.20		Add the Castle Technology CD Tov	ve
The unique Combo Case - takes any				network and have simultaneous	
two SCSI devices & gets rid of all those				between 7 & 28 CD-ROMs. Enable	
			221		
the sest dences a gets the or all those	A TEL			resource direr to remain locked a	
cables, mains leads etc. Accepts any	FEE			resource discs to remain locked a	
cables, mains leads etc. Accepts any	JE:		(Constant)	untouched but accessible from al	1
	i.			untouched but accessible from al network. Up to 4 towers can be c	0
cables, mains leads etc. Accepts any	£69	£81.08		untouched but accessible from al network. Up to 4 towers can be o to one computer. Fully compatibl	0
cables, mains leads etc. Accepts any 5.25" unit.	£69 £40	£81.08 £47.00		untouched but accessible from al network. Up to 4 towers can be c	0
cables, mains leads etc. Accepts any 5.25" unit. Acorn M E U 2x CD + free 5.25" slot		0.000		untouched but accessible from al network. Up to 4 towers can be o to one computer. Fully compatibl	0
cables, mains leads etc. Accepts any 5.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI device Combo case for 2 SCSI devices	£40 £60	£47.00		untouched but accessible from al network. Up to 4 towers can be c to one computer. Fully compatibl Access CD network software.	0
cables, mains leads etc. Accepts any 5.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI device	£40 £60	£47.00		untouched but accessible from al network. Up to 4 towers can be o to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7 drive Tower	l e
cables, mains leads etc. Accepts any 5.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI device Combo case for 2 SCSI devices	£40 £60	£47.00		untouched but accessible from al network. Up to 4 towers can be c to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower	l e
cables, mains leads etc. Accepts any S.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI device Combo case for 2 SCSI devices SCANNERS inc FREE software wort	£40 £60 C	£47.00		untouched but accessible from al network. Up to 4 towers can be o to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7 drive Tower	l e
cables, mains leads etc. Accepts any 5.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI device Combo case for 2 SCSI devices SCANNERS inc FREE software wort The new ultra-slim ScanExpress 36-bit colour	£40 £60 C	£47.00		untouched but accessible from al network. Up to 4 towers can be o to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7 drive Tower	l e
cables, mains leads etc. Accepts any 5.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI device Combo case for 2 SCSI devices SCANNERS inc FREE software wort The new ultra-slim ScanExpress 36-bit colour scanner has a compact footprint, fast	£40 £60 C	£47.00		untouched but accessible from al network. Up to 4 towers can be o to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7 drive Tower SPEC	loe
cables, mains leads etc. Accepts any S.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI device Combo case for 2 SCSI devices SCANNERS inc FREE software wort The new ultra-slim Scan Express 36-bit colour scanner has a compact footprint, fast scanning speeds and quiet operation.	£40 £60 h £49	£47.00		untouched but accessible from al network. Up to 4 towers can be o to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7 drive Tower	loe
cables, mains leads etc. Accepts any 5.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI devices Combo case for 2 SCSI devices SCANNERS inc FREE software wort The new ultra-slim ScanExpress 36-bit colour scanner has a compact footprint, fast scanning speeds and quiet operation. free ImageMatter software and TWAIN driver	£40 £60 h £49	£47.00		untouched but accessible from al network. Up to 4 towers can be o to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7 drive Tower 32x CD 7 drive Tower CONTRACTOR OF FOR EXTERNAL I	l oe
cables, mains leads etc. Accepts any 5.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI device Combo case for 2 SCSI devices SCANNERS inc FREE software wort The new ultra-slim ScanExpress 36-bit colour scanner has a compact footprint, fast scanning speeds and quiet operation. free ImageHaster software and TWAIN driver free V interface/software kit (SCSI only).	£40 £60 h £49	£47.00		untouched but accessible from al network. Up to 4 towers can be o to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7 drive Tower 32x CD 7 drive Tower CO F F EXTERNAL I ZIP DRIVE (So	
cables, mains leads etc. Accepts any 5.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI device Combo case for 2 SCSI devices SCANNERS inc FREE software wort The new ultra-slim ScanExpress 36-bit colour scanning speeds and quiet operation. Free ImageHaster software and TWAIN driver free PC interface/software kit (SCSI only). Optional transparency adaptor available.	£40 £60 h £49	£47.00 £70.50		untouched but accessible from al network. Up to 4 towers can be o to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7	
cables, mains leads etc. Accepts any 5.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI device Combo case for 2 SCSI devices SCANNERS inc FREE software wort The new ultra-slim ScanExpress 36-bit colour scanner has a compact footprint, fast scanning speeds and quiet operation. free ImageHaster software and TWAIN driver free V interface/software kit (SCSI only).	£40 £60 h £49	£47.00 £70.50		untouched but accessible from al network. Up to 4 towers can be o to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7	
cables, mains leads etc. Accepts any 5.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI device Combo case for 2 SCSI devices SCANNERS inc FREE software wort The new ultra-slim ScanExpress 36-bit colour scanning speeds and quiet operation. Free ImageHaster software and TWAIN driver free PC interface/software kit (SCSI only). Optional transparency adaptor available.	£40 £60 h £49	£47.00 £70.50		untouched but accessible from al network. Up to 4 towers can be of to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7 drive Tower 32x CD 7 drive Tower SPEC SPEC CONTRACTOR SPEC CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR	
cables, mains leads etc. Accepts any 5.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI device Combo case for 2 SCSI devices SCANNERS inc FREE software wort The new ultra-slim ScanExpress 36-bit colour scanning speeds and quiet operation. Free Imageflaster software and TWAIN driver free PC interface/software kit (SCSI only). Optional transparency adaptor available. ScanExpress 6000 parallel	£40 £60 h £49	£47.00 £70.50		untouched but accessible from al network. Up to 4 towers can be o to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7 drive Tower 32x CD 7 drive Tower SPPE COPFF EXTERNAL I ZIP DRIVE (S Up to 20 times faster 80 times the capacity of standard floppy disc dr the Zip drive is now at	
cables, mains leads etc. Accepts any 5.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI device Combo case for 2 SCSI devices SCANNERS inc FREE software wort The new ultra-slim ScanExpress 36-bit colour scanner has a compact footprint, fast scanning speeds and quiet operation. Free ImageHaster software and TWAIN drivent free ImageHaster software and TWAIN drivent free ImageHaster software and TWAIN drivent free Software yoftware	£40 £60 6 h £49 £99 £119	£47.00 £70.50		untouched but accessible from al network. Up to 4 towers can be of to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7	
cables, mains leads etc. Accepts any S.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI device Combo case for 2 SCSI devices SCANNEERS inc FREE software wort The new ultra-slim ScanExpress 36-bit colour scanner has a compact footprint, fast scanning speeds and quiet operation. Free ImageHaster software kit (SCSI only). Optional transparency adaptor available. ScanExpress 6000 parallel ScanExpress 12000 parallel ScanExpress 6000 SCSI	£40 £60 5 h £49 £199 £119 £119	£47.00 £70.50 £116.33 £116.33 £139.83 £139.83		untouched but accessible from al network. Up to 4 towers can be of to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7	
cables, mains leads etc. Accepts any S.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI device Combo case for 2 SCSI devices SCANNERSS inc FREE software wort The new ultra-slim ScanExpress 36-bit colours scannier has a compact footprint, fast scanning speeds and quite operation. Free ImageMatter software and TWAIN driver free PC interface/software kit (SCSI only). Optional transparency adaptor available. ScanExpress 6000 parallel ScanExpress 12000 parallel ScanExpress 12000 SCSI	£40 £60 h £49 £199 £119 £119 £119	£47.00 £70.50 £116.33 £116.33 £139.83 £139.83 £198.58		untouched but accessible from al network. Up to 4 towers can be of to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7 drive Tower 32x CD 7 drive Tower SP 50 CO F EXTERNAL I ZIP DRIVE (S Up to 20 times faster 80 times the capacity of standard floppy disc. dri the Zip drive is now ar industry standard mea of storing and transfer data. Choose between	
cables, mains leads etc. Accepts any 5.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI devices SCANNERS inc FREE software wort The new ultra-slim ScanExpress 36-bit colour scanner has a compact footprint, fast scanning speeds and quiet operation. free ImageMatter software and TWAIN driver free PC interface/software kit (SCSI only). Optional transparency adaptor available. ScanExpress 6000 parallel ScanExpress 12000 parallel ScanExpress 12000 SCSI ScanExpress 12000 SCSI ScanExpress 12000 SCSI ScanExpress 70 SCI ImageMaster & Twain	£40 £60 h £49 £99 £119 £119 £169 £399	£47.00 £70.50 £116.33 £119.83 £198.58 £198.58 £468.83		untouched but accessible from al network. Up to 4 towers can be of to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7 drive Tower 32x CD 7 drive Tower SPEC SPEC CONTROL SPEC CONTROL SPEC CONTROL SPEC CONTROL SPEC CONTROL SPEC SPEC CONTROL SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPE	C S Soliin nr (n
cables, mains leads etc. Accepts any 5.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI devices SCANNERS inc FREE software wort The new ultra-slim ScanExpress 36-bit colour scanner has a compact footprint, fast scaning speeds and quiet operation. Tree ImageHaster software and TWAIN driver Free IT, Statter software and TWAIN driver Free PC interface/software kit (SCSI only). Optional transparency adaptor available. ScanExpress 6000 parallel ScanExpress 12000 parallel ScanExpress 12000 SCSI ScanExpress 12000 SCSI Scanflat 1200 pro SCSI ImageMaster & Twain Scanflat transparency kit - slides etc	£40 £60 h £49 £199 £119 £119 £119 £1399 £439	£47.00 £70.50 £116.33 £139.83 £139.83 £139.83 £139.83 £139.85 £1468.83 £57.58 £175.08		untouched but accessible from al network. Up to 4 towers can be of to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7 drive Tower 32x CD 7 drive Tower SP 50 CO F EXTERNAL I ZIP DRIVE (S Up to 20 times faster 80 times the capacity of standard floppy disc. dri the Zip drive is now ar industry standard mea of storing and transfer data. Choose between	C S Soliin nr (n
cables, mains leads etc. Accepts any S.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI device Combo case for 2 SCSI devices SCANNEERS inc FREE software wort The new ultra-slim Scan Express 36-bit colours scanner has a compact footprint, fast scanner speeds and quiet operation. Free PC interface/software kit (SCSI only). Optional transparency adaptor available. ScanExpress 12000 parallel ScanExpress 12000 parallel ScanExpress 12000 SCSI ScanExpress 12000 SCSI ScanExpress 12000 SCSI ScanExpress transparency kit - slides etc ScanExpress transparency kit - slides etc	£40 £60 6 6 6 7 6 19 6 119 £119 £119 £119 £199 £199 £19	£47.00 £70.50 £116.33 £139.83 £139.83 £198.58 £468.83 £57.58		untouched but accessible from al network. Up to 4 towers can be of to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7	C S Soliin nr (n
cables, mains leads etc. Accepts any 5.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI devices SCANNERS inc FREE software wort The new ultra-slim ScanExpress 36-bit colour scanner has a compact footprint, fast scaning speeds and quiet operation. Tree ImageHaster software and TWAIN driver Free IT, Statter software and TWAIN driver Free PC interface/software kit (SCSI only). Optional transparency adaptor available. ScanExpress 6000 parallel ScanExpress 12000 parallel ScanExpress 12000 SCSI ScanExpress 12000 SCSI Scanflat 1200 pro SCSI ImageMaster & Twain Scanflat transparency kit - slides etc	£40 £60 C h £49 £119 £119 £119 £169 £169 £49 £49	£47.00 £70.50 £116.33 £116.33 £139.83 £139.83 £139.83 £198.58 £468.83 £175.08 £175.08 £88.13		untouched but accessible from al network. Up to 4 towers can be of to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7 drive Tower 32x CD 7 drive Tower SPEC SPEC CONTROL SPEC CONTROL SPEC CONTROL SPEC CONTROL SPEC CONTROL SPEC SPEC CONTROL SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPEC SPE	C S Soliin nr (n
cables, mains leads etc. Accepts any 5.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI devices SCANNERS inc FREE software wort The new ultra-slim ScanExpress 36-bit colour scanner has a compact footprint, fast scanning speeds and quiet operation. free ImageMatter software and TWAIN driver free PC interface/software kit (SCSI only). Optional transparency adaptor available. ScanExpress 12000 parallel ScanExpress 12000 parallel ScanExpress 12000 parallel ScanExpress 12000 SCSI Scanflat 1200 pro SCSI ImageMaster & Twain Scanflat transparency kit - slides etc ScanExpress transparency kit - slides etc CanoScan 2700F film scanner	£40 £60 h £49 £99 £119 £119 £119 £169 £399 £49 £149 £149 £149	£47.00 £70.50 £116.33 £119.83 £139.83 £198.58 £468.83 £57.58 £175.08 £57.58 £175.08 £58.13 £586.33		untouched but accessible from al network. Up to 4 towers can be to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7 drive Tower 32x CD 7 drive Tower EXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL	
cables, mains leads etc. Accepts any S.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI device Combo case for 2 SCSI devices SCANNEERS inc FREE software wort The new ultra-slim Scan Express 36-bit colours scanner has a compact footprint, fast scanner speeds and quiet operation. Free PC interface/software kit (SCSI only). Optional transparency adaptor available. ScanExpress 12000 parallel ScanExpress 12000 parallel ScanExpress 12000 SCSI ScanExpress 12000 SCSI ScanExpress 12000 SCSI ScanExpress transparency kit - slides etc ScanExpress transparency kit - slides etc	£40 £60 h £49 £99 £119 £119 £169 £399 £49 £149 £149 £149	£47.00 £70.50 £116.33 £119.83 £139.83 £198.58 £468.83 £57.58 £175.08 £57.58 £175.08 £58.13 £586.33		untouched but accessible from al network. Up to 4 towers can be to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7 drive Tower 32x CD 7 drive Tower 32x CD 7 drive Tower 32x CD 7 drive Tower 5x CD 7 drive Tow	
cables, mains leads etc. Accepts any 5.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI devices SCANNERS inc FREE software wort The new ultra-slim ScanExpress 36-bit colour scanner has a compact footprint, fast scanning speeds and quiet operation. free ImageMatter software and TWAIN driver free PC interface/software kit (SCSI only). Optional transparency adaptor available. ScanExpress 12000 parallel ScanExpress 12000 parallel ScanExpress 12000 parallel ScanExpress 12000 SCSI Scanflat 1200 pro SCSI ImageMaster & Twain Scanflat transparency kit - slides etc ScanExpress transparency kit - slides etc CanoScan 2700F film scanner	£40 £60 h £49 £99 £119 £119 £169 £399 £49 £149 £149 £149	£47.00 £70.50 £116.33 £119.83 £139.83 £198.58 £468.83 £57.58 £175.08 £57.58 £175.08 £58.13 £586.33		untouched but accessible from al network. Up to 4 towers can be of to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7 drive Tower 32x CD 7 drive Tower EXTERNAL I CONTRUMEDIATION EXTERNAL I CONTRUE (SOUTH OF THE CONTRUET BUT IN THE CONTRUET BUT IN THE CONTRUET BUT IN THE CONTRUET Standard floppy disc drive is now ar industry standard mea of storing and transfer data. Choose between version (20x faster tha port version (5x faster Special offer	
cables, mains leads etc. Accepts any S.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI device Combo case for 2 SCSI devices SCANNEERS inc FREE software wort The new ultra-slim Scan Express 36-bit colour scanner has a compact footprint, fast scanning speeds and quiet operation. Free ImageHaster software and TWAIN driver free PC interface/software kit (SCSI only). Optional transparency adaptor available. ScanExpress 6000 parallel ScanExpress 12000 parallel ScanExpress 12000 parallel ScanExpress 12000 SCSI ScanExpress 12000 SCSI ScanExpress transparency kit - slides etc ScanExpress transparency kit - slides etc CanoScan 2700F film scanner FIXING KITS, CALE	£40 £60 5 h £49 £119 £119 £119 £119 £169 £399 £149 £149 £149 £149 £149 £15 £499 £149	47.00 £70.50 £10.50 £10.53 £139.83 £198.58 £195.58 £175.08 £488.13 £155.68 £156.68		untouched but accessible from al network. Up to 4 towers can be to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7 drive Tower 32x CD 7 drive Tower EXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL CONTEXTERNAL	
cables, mains leads etc. Accepts any S25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI devices Combo case for 2 SCSI devices SCANNERS inc FREE software wort The new ultra-slim ScanExpress 36-bit colour scanner has a compact footprint, fast scanning speeds and quiet oparation. Free ImageHaster software and TWAIN driver free PC interface/software kit (SCSI only). Optional transparency adaptor available. ScanExpress 6000 parallel ScanExpress 12000 parallel ScanExpress 12000 parallel ScanExpress 12000 SCSI ScanExpress 12000 Film scanner FIXING KITS, CAP Podule case for A3000 Fixing kits for hard drives	£40 £60 6 6 6 7 6 199 £119 £119 £119 £169 £399 £499 £499 £499 £499 £499 £499 £49	47.00 £70.50 £116.33 £116.33 £139.83 £139.83 £198.58 £175.08 £83.13 £55.83 £156.83 £156.83 £15.83		untouched but accessible from al network. Up to 4 towers can be of to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7 drive Tower 32x CD 7 drive Tower EXTERNAL I CONTRUMEDIATION EXTERNAL I CONTRUE (SOUTH OF THE CONTRUET BUT IN THE CONTRUET BUT IN THE CONTRUET BUT IN THE CONTRUET BUT IN THE CONTRUET STATES AND AND AND AND AND AND ADD AND AND AND AND AND AND AND ADD AND AND AND AND AND AND AND ADD AND AND AND AND AND AND AND AND ADD AND AND AND AND AND AND AND AND AND	
cables, mains leads etc. Accepts any 5.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI devices SCANNERS inc FREE software wort The new ultra-slim ScanExpress 36-bit colour scanner has a compact footprint, fast scanning speeds and quiet operation. Free ImageMaster software and TWAIN driver free PC interface/software kit (SCSI only). Optional transparency adaptor available. ScanExpress 12000 parallel ScanExpress 12000 parallel ScanExpress 12000 parallel ScanExpress 12000 SCSI Scanflat transparency kit - slides etc ScanExpress transparency kit - slides etc CanoScan 2700F film scanner FIXINC KITS, CALP Podule case for A3000 Fixing kits for hard drives A4 IDE hard drive fixing kit	£40 £60 6 6 6 7 6 7 7 6 7 7 8 7 8 7 8 7 8 7 8 7	47.00 470.50		untouched but accessible from al network. Up to 4 towers can be of to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7 drive Tower 32x CD 7 drive Tower 32x CD 7 drive Tower 50 F F EXTERNAL I C D T D RIVE (SO Up to 20 times faster 80 times the capacity of standard floppy disc dri the Zip drive is now ar industry standard mea of storing and transfer data. Choose between version (20x faster tha port version (5x faster Special imited offer	
cables, mains leads etc. Accepts any 5.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI devices SCANNERS inc FREE software wort The new ultra-slim ScanExpress 36-bit colour scanner has a compact footprint, fast scanning speeds and quiet operation. free ImageMatter software and TWAIN driver free PC interface/software kit (SCSI only). Optional transparency adaptor available. ScanExpress 12000 parallel ScanExpress 12000 parallel ScanExpress 12000 parallel ScanExpress 12000 parallel ScanExpress 12000 SCSI Scanflat t200 po SCSI ImageMaster & Twain Scanflat transparency kit - slides etc ScanExpress transparency kit - slides etc CanExpress transparency kit - slides etc Autor hard drive fixing kit AJ00 series backplane (4 way 4 layer)	£40 £60 6 6 6 7 6 119 £119 £119 £169 £149 £149 £149 £149 £149 £149 £149 £14	47.00 470.50		untouched but accessible from al network. Up to 4 towers can be of to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7	
cables, mains leads etc. Accepts any S.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI device Combo case for 2 SCSI devices SCANNEERS inc FREE software wort The new ultra-slim Scan Express 36-bit colours scanner has a compact footprint, fast scanning speeds and quiet operation. Free Imagelfaster software and TWAIN driver free PC interface/software kit (SCSI only). Optional transparency adaptor available. ScanExpress 6000 parallel ScanExpress 12000 parallel ScanExpress 12000 SCSI ScanExpress 12000 SCSI ScanExpress transparency kit - slides etc ScanExpress transparency kit - slides etc CanoScan 2700F film scanner FIXING KITTS, CALP Podule case for A3000 Fixing kits for hard drives A4 IDE hard drive fixing kit A300 series backplane (d way 4 layer) A7000/+ 1 slot backplane (not with CD	£40 £60 £99 £119 £119 £119 £149 £149 £149 £149	47.00 470.50 4106.33 4139.83 4198.58 4195.58 405		untouched but accessible from al network. Up to 4 towers can be of to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7	
cables, mains leads etc. Accepts any S25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI devices Combo case for 2 SCSI devices SCANNERRS inc FREE software wort The new ultra-slim ScanExpress 36-bit colours scanner has a compact footprint, fast scaning speeds and quite operation. Free ImageMaster software and TWAIN driver free PC interface/software kit (SCSI only). Optional transparency adaptor available. ScanExpress 6000 parallel ScanExpress 12000 parallel ScanExpress 12000 SCSI ScanExpress 12000 SCSI ScanExpress transparency kit - slides etc ScanExpress transparency kit - slides etc CanoScan 2700F film scanner FIEXING KITS, CALP Podule case for A3000 Fixing kits for hard drives A4 IDE hard drive fixing kit A300 series backplane (4 way 4 layer) A7000/+ 1 slot backplane (not with CD Risc PC 2 slot backplane	£40 £60 £99 £119 £119 £119 £1399 £149 £149 £149 £149 £149 £149 £149 £1	47.00 470.50 4116.33 4116.33 4139.83 4198.58 4199.58 4199.58 4199.58 4199.58 4199.58 4199.58 4199.58 4199.58 4199.58 4199.5		untouched but accessible from al network. Up to 4 towers can be o to one computer. Fully compatibl Access CD retwork software. 8x CD 7 drive Tower 32x CD 7 drive Tower 32x CD 7 drive Tower 32x CD 7 drive Tower 50 F F EXTERNAL I ZIP DRIVE (SC Up to 20 times faster 80 times the capacity of standard floppy disc dr the Zip drive is now al industry standard floppy disc dr the Zip d	
cables, mains leads etc. Accepts any S25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI devices SCANNERS inc FREE software wort The new ultra-slim ScanExpress 36-bit colour scanner has a compact footprint, fast scanning speeds and quiet operation. Free ImageHaster software and TWAIN driver free PC interface/software kit (SCSI only). Optional transparency adaptor available. ScanExpress 6000 pcsII ScanExpress 12000 parallel ScanExpress 12000 parallel ScanExpress 12000 SCSI Scanflat 1200 pro SCSI ImageMaster & Twain Scanflat transparency kit - slides etc ScanExpress transparency kit - slides etc ScanExpress for A3000 Fixing kits for hard drives A4 IDE hard drive fixing kit A300 series backplane (4 way 4 layer) A7000/+ 1 slot backplane 2nd slice for Risc PC inc I0Swatt PSU	£40 £60 h £49 £119 £119 £119 £169 £399 £49 £49 £49 £49 £49 £15 £499 BLES e £16 £8 £12 £18 £19 £19 £19 £19 £19 £19 £19 £19 £19 £19	47.00 £70.50 £116.33 £116.33 £139.83 £139.83 £139.83 £198.58 £175.08 £88.13 £156.33 £168.80 £88.13 £156.33 £16.80 £9.40 £14.10 £16.33 £16.33		untouched but accessible from al network. Up to 4 towers can be of to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7 drive Tower 32x CD 7 drive Tower 32x CD 7 drive Tower 50 F F EXTERNAL I C D D RIVE (SO Up to 20 times faster 80 times the capacity of standard floppy disc dr the Zlp drive is now ar industry standard mea of storing and transfer data. Choose between version (20x faster tha port version (5x faster Special offer C Tom C So cilicas it KEYBOARD Ergo keyboard for pre Risc PC Frgo keyboard for pre Risc PC Frgo keyboard for Risc PC A7000/- Keyboard for Risc PC A7000/-	
cables, mains leads etc. Accepts any 5.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI devices SCANNVERS inc FREE software wort The new ultra-slim ScanExpress 36-bit colour scanner has a compact footprint, fast scanning speeds and quiet operation. Free ImageMaster software and TWAIN driver Free PC interface/software kit (SCSI only). Optional transparency adaptor available. ScanExpress 12000 parallel ScanExpress 12000 parallel ScanExpress 12000 parallel ScanExpress 12000 SCSI Scanflat transparency kit - slides etc CanoScan 2700F film scanner FIXINC KITS, CALP Podule case for A3000 Fixing kits for hard drives A4 IDE hard drive fixing kit A300 series backplane (4 way 4 layer) A7000/+ 1 slot backplane Ind slice for Risc PC inc IOSwart PSU 2nd slice for Risc PC inc IOSwart PSU	£40 £60 £49 £119 £119 £119 £169 £149 £149 £149 £149 £149 £149 £149 £14	47.00 470.50		untouched but accessible from al network. Up to 4 towers can be o to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7 drive Tower 32x CD 7 drive Tower 32x CD 7 drive Tower 32x CD 7 drive Tower 5x CD 7 drive T	
cables, mains leads etc. Accepts any S.25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI devices Combo case for 2 SCSI devices SCANNEERS inc FREE software wort The new ultra-slim Scan Express 36-bit colours scanner has a compact footprint, fast scanning speeds and quiet operation. Free Imageflaster software and TWAIN driver free PC interface/software kit (SCSI only). Optional transparency adaptor available. ScanExpress 6000 parallel ScanExpress 12000 parallel ScanExpress 12000 parallel ScanExpress 12000 SCSI Scanflat 1200 pro SCSI Imageflaster & Twain ScanExpress transparency kit - slides etc ScanExpress transparency kit-slides etc CanoScan 2700F film scanner FLXING KUTS, CALE Podule case for A3000 Fixing kits for hard drives A4 IDE hard drive fixing kit A300 series backplane (4 way 4 layer) A7000/+ 1 slot backplane (not with CD Risc PC 2 slot backplane 2nd slice for Risc PC SCSI 1 & II cables choice from	£40 £60 £99 £119 £119 £169 £149 £149 £149 £149 £149 £149 £149 £19 £19 £19 £19 £19 £19 £19 £19 £19 £1	47.00 470.50		untouched but accessible from al network. Up to 4 towers can be o to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7	
cables, mains leads etc. Accepts any S25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI devices SCANNEERS inc FREE software wort The new ultra-slim ScanExpress 36-bit colours scanner has a compact footprint, fast scaning speeds and quite operation. Free ImageNaster software and TWAIN driver free PC interface/software kit (SCSI only). Optional transparency adaptor available. ScanExpress 6000 parallel ScanExpress 6000 parallel ScanExpress 12000 parallel ScanExpress 12000 SCSI ScanExpress 12000 SCSI ScanExpress transparency kit-slides etc ScanExpress transparency kit-slides etc CanoScan 2700F film scanner FIXING KITS, CAP Podule case for A3000 Fixing kits for hard drives A4 IDE hard drive fixing kit A300 series backplane (4 way 4 layer) A7000/+ 1 slot backplane (not with CD Risc PC 2 slot backplane 2nd slice for Risc PC SCSI 1 & II cables choice from SCSI/IDE ribbon cables from	£40 £60 £99 £119 £119 £119 £149 £1399 £149 £149 £149 £149 £15 £499 £149 £16 £48 £12 £48 £12 £48 £12 £48 £12 £16 £12 £15 £16 £15 £16 £15 £16 £15 £16 £15 £16 £16 £15 £16 £16 £16 £16 £16 £17 £16 £16 £17 £16 £17 £17 £17 £17 £17 £17 £17 £17 £17 £17	47.00 470.50 4106.33 4139.83 4198.58 4198.58 4198.58 4195.58 4175.08 405.58 4175.08 418.80		untouched but accessible from al network. Up to 4 towers can be of to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7	
cables, mains leads etc. Accepts any S25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI devices SCANNVERS inc FREE software wort The new ultra-slim ScanExpress 36-bit colours scanner has a compact footprint, fast scaning speeds and quite oparation. Free ImageNaster software and TWAIN driver free PC interface/software kit (SCSI only). Optional transparency adaptor available. ScanExpress 6000 parallel ScanExpress 12000 parallel ScanExpress 12000 parallel ScanExpress 12000 SCSI ScanExpress 12000 SCSI ScanExpress 12000 SCSI ScanExpress 12000 SCSI ScanExpress 12000 SCSI ScanExpress 12000 SCSI ScanExpress 12000 Film scanner FIXING KITS, CAP Podule case for A3000 Fixing kits for hard drives A4 IDE hard drive fixing kit A300 series backplane (4 way 4 layer) A7000/+ 1 slot backplane (not with CD Risc PC 2 slot backplane (not with CD Risc FC 2 slot backplane (not with CD Risc FC 3 slot backplane (from SCSI 1 & II cables choice from SCSI 1 Erminator/adaptors (selection)	£40 £60 £99 £119 £119 £119 £1399 £149 £149 £149 £149 £149 £149 £149 £1	47.00 470.50		untouched but accessible from al network. Up to 4 towers can be of to one computer. Fully compatibl Access CD retwork software. 8x CD 7 drive Tower 32x CD 7 drive Tower 32x CD 7 drive Tower 32x CD 7 drive Tower 50 C P E C C P C C C P C C C P C	
cables, mains leads etc. Accepts any S25" unit. Acorn M E U 2x CD + free 5.25" slot Case for single SCSI devices SCANNEERS inc FREE software wort The new ultra-slim ScanExpress 36-bit colours scanner has a compact footprint, fast scaning speeds and quite operation. Free ImageNaster software and TWAIN driver free PC interface/software kit (SCSI only). Optional transparency adaptor available. ScanExpress 6000 parallel ScanExpress 6000 parallel ScanExpress 12000 parallel ScanExpress 12000 SCSI ScanExpress 12000 SCSI ScanExpress transparency kit-slides etc ScanExpress transparency kit-slides etc CanoScan 2700F film scanner FIXING KITS, CAP Podule case for A3000 Fixing kits for hard drives A4 IDE hard drive fixing kit A300 series backplane (4 way 4 layer) A7000/+ 1 slot backplane (not with CD Risc PC 2 slot backplane 2nd slice for Risc PC SCSI 1 & II cables choice from SCSI/IDE ribbon cables from	£40 £60 £99 £119 £119 £119 £149 £139 £149 £149 £149 £149 £15 £499 £149 £16 £48 £12 £48 £12 £48 £12 £48 £12 £16 £12 £15 £16 £15 £16 £15 £16 £15 £16 £15 £16 £15 £16 £16 £15 £16 £16 £16 £17 £17 £16 £17 £17 £17 £17 £17 £17 £17 £17 £17 £17	47.00 470.50 4106.33 4139.83 4198.58 4198.58 4198.58 4195.58 4175.08 405.58 4175.08 418.80		untouched but accessible from al network. Up to 4 towers can be of to one computer. Fully compatibl Access CD network software. 8x CD 7 drive Tower 32x CD 7	

			A	ernal versions can be
XTRA HARD DI	RIVES		a service services	to the CT Combo case
Guaranteed 4MB+/sec read trans	fer rate with	1	1	ails see 'External SCSI
Castle Storm DMA32 SCS B XTRA 3.5" SCSI		(204.22)		n column 1). Maximum
IB XTRA 3.5" SCSI	£259 £339	£304.33 £398.33	data tra	insfer rate up to
B XTRA 3.5" SCSI	£429	£504.08		sec (Nomai).
GB XTRA 3.5" SCSI	£899	£1056.33	71P drive	e internal 100MB SCSI
VIDEO HARD D			ZIP drive	e external IOOMB SCSI
astest on market - externally boxed a use - StormPCI or Storm DMA32 car				e external parallel not A300 Parallel 71P driver (100MP)
B Video SCSI external	£449	£527.58		Parallel ZIP driver (100MB) Flyer 230MB SCSI external
iB Video SCSI external	£649	£762.58	MaxIT in	ternal 500MB SCSI drive
GB Video SCSI external	£1199	£1408.83		nternal 750MB SCSI drive xternal 750MB SCSI drive
CD ROM DRI		(20		mal IGB SCSI drive
inc FREE driver software & fixing astle Technology's range of CD ROM	kit worth	£29		rnal IGB SCSI drive
rives are chosen for their reliability,				ernal I.SGB SCSI drive ternal I.SGB SCSI drive
ase of use and robustness. They have	· ····································		JAZ inter	rnal 2GB SCSI drive
ist access times, and include driver oftware. They are particularly suitable		Ent		ernal 2GB_SCSI drive CD & 630MB optical SCSI dr
r multimedia applications.			STORAGE AND	
speed SCSI CD ROM drive	£29	£34.08		EW NEW
speed SCSI CD ROM drive	£34	£39.95		I"TFT
x speed SCSI CD ROM drive	£69	£81.08	FL/	AT SCREEN
x speed IDE CD ROM drive x speed IDE CD ROM drive	£45 £49	£52.88 £57.58		te 36 space-saving
x speed IDE CD ROM drive	£69	£81.08		creens from Ilyama. able area almost
E CD driver for Risc PC & A7000	£25	£29.38		Max resolution
4x2 CD ReWriter inc !CDBurn	£325	£381.88	1024	x768. Low power
4x2 Ext CD ReWriter inc !CDBurn 2x2 CD ReWriter inc !CDBurn	£389 £280	£457.08 £329.00		umption and
2x2 CD ReWriter Inc !CDBurn	£340	£399.50		ed eye strain make a top buy for
ROM fixing kit (data & audio cable)	£4	£4.70		ols and business.
CD TOWER	S			MEMO.
7 SCSI CD towers with locka	ble doors		1200 8	A400 I-4MB
d the Castle Technology CD Tower to your			and the second	A400 1-4HB A400 4-8MB
twork and have simultaneous access to	-	EU	A3000 I	
tween 7 & 28 CD-ROMs. Enables CD source discs to remain locked and	E	-	A3000 4	
touched but accessible from all over the			A3010 I-	erial port upgrade -7MB
twork. Up to 4 towers can be connected			A3010 1-	
one computer. Fully compatible with cess CD network software.	AL			A4000 2-4MB
	Restanting to	-	A5000 2 A5000 4	
CD 7 drive Tower x CD 7 drive Tower	£379 £579	£445.33 £680.33		A7000/+ 16MB SIMM
	COLUMN STREET, SALES	2000.33	a state of the second	A7000/+ 32MB SIMM
SPECI	AL			A7000/+ 64MB SIMM 2MB VRAM
OFFER	1			
EXTERNAL 100M	B			PROCESS
ZIP DRIVE (SCSI OR		EL)		& RISC
Ip to 20 times faster &			StrongAl	RM processor
0 times the capacity of a	1	and the second	Risc OS	3.11 chip set
tandard floppy disc drive,	dem)	24		3.11 manual set
ne Zip drive is now an and a standard means		27		3.11 hardware upgrade - A3 3.7 chip set
f storing and transferring	C-		ARM 610	processor (2nd user)
ata. Choose between SCSI ersion (20x faster than floppy)	or parall	el	ARM 3 p	rocessor for A3000 A300 A
ort version (5x faster than a f				MODE
	including FRE		Séle auto	ernal inc FREE online time
limited 🛛 🔚 🛷 🧭	driver softwar I FREE 100MB			
ETID:35 INC YAL			-Noton Charles P.	erry CHARGES - Next over £200 paid by debit of
KEYBOARDS MI	CE ET	C	Small it	ems
			12 2 3 7 1 12 - areas	er orders
go keyboard for pre Risc PC	£69	£81.08	10000	charge (inc collection)
go keyboard for Risc PC A7000/+ N/C yboard for Risc PC A7000/+ N/C	£39 £19	£45.83 £22.33		lcome payment by cheque and Debit cards.
yboard cable (6 way)	£IO	£11.75		ATIONAL ORDERS W
ouse for all Acorns (not A7000 etc)	£12	£14.10	1000	ANOTAL ONDERS W
ouse for A7000/+ N/C Phoebe ouse balls heavy (pack of 10)	£15 £15	£17.63 £17.63	CAST	E TECHNOLOGY, Ore Tr
oppy drive any Acorn except A300 A4	£30	£35.25	C 2 2 2 2 3 3 5 5 5 5 5 10	ridge Road, Framlingham,
placement floppy drive for A4	£79	£92.83	H 10.01100.0000	728 621222 FAX: 0800 7



For flexible, expandable storage, the infinite capacity of a removable drive is perfect. All drives are the latest spec, nd internal versions can be tted into the CT Combo case or details see 'External SCSI ases' in column 1). Maximum ata transfer rate up to .8MB/sec (Nomai).

	Contraction of the	A CONTRACTOR OF LO
ZIP drive internal IOOMB SCSI	£99	£116.33
ZIP drive external IOOMB SCSI	£99	£116.33
ZIP drive external parallel not A300 etc	£109	£128.08
Iomega Parallel ZIP driver (100MB)	£25	£29.38
Syquest Flyer 230MB SCSI external	£85	£99.88
MaxIT internal 500MB SCSI drive	£129	£151.58
Nomai internal 750MB SCSI drive	£165	£193.88
Nomai external 750MB SCSI drive	£215	£252.63
JAZ internal IGB SCSI drive	£189	£222.08
JAZ external IGB SCSI drive	£199	£233.83
Sylet internal 1.5GB SCSI drive	£219	£257.33
Sylet external 1.5GB SCSI drive	£255	£299.63
JAZ internal 2GB SCSI drive	£360	£423.00
AZ external 2GB SCSI drive	£410	£481.75
PD 24x CD & 630MB optical SCSI drive	£299	£351.33



£200 OFF!

Special brice or

1	11	T	Л.	11	77	RY
	И	E.	/1/	11	//	(Y

MEMOR	Y		
A300 & A400 I-4MB	£75	£88.13	
A300 & A400 4-8MB	£119	£139.83	Ac
A3000 I-4MB	£55	£64.63	in
A3000 4-8MB	£149	£175.08	re Si
A3000 serial port upgrade	£25	£29.38	
A3010 I-2MB	£25	£29.38	C
A3010 I-4MB	£59	£69.33	CA
A3020 & A4000 2-4MB	£35	£41.13	CA
A5000 2-4MB	£60	£70.50	CA
A5000 4-8MB	£139	£163.33	CA
Risc PC A7000/+ 16MB SIMM	£17	£19.98	EF
Risc PC A7000/+ 32MB SIMM	£39	£45.83	EF
Risc PC A7000/+ 64MB SIMM	£93	£109.28	EF
Risc PC 2MB VRAM	£69	£81.08	EF
	Contract of the lot of the	1	Pa

PROCESSORS & RISC OS

ARM 3 processor for A3000 A300 A400	£99	£116.33
ARM 610 processor (2nd user)	£69	£81.08
Risc OS 3.7 chip set	£50	£58.75
Risc OS 3.11 hardware upgrade - A300	£20	£23.50
Risc OS 3.11 manual set	£20	£23.50
Risc OS 3.11 chip set	£29	£34.08
StrongARM processor	£249	£292.58

£89 £104.58

MODEM

ELIVERY CHARGES - Next day insured FREE FREE Orders over £200 paid by debit card £7.05 mall items £6 (12.93 I other orders £II £18 £21.15 itting charge (inc collection) Ve welcome payment by cheque (allow 5 days to clear), redit and Debit cards.

DUCATIONAL ORDERS WELCOMED.

ASTLE TECHNOLOGY, Ore Trading Estate Voodbridge Road, Framlingham, Suffolk IP13 9LL EL: 01728 621222 FAX: 0800 783 9638

FREEFAX 0800 783 9638

COMBOS

Full range available - free fitting in combo case when all purchased at the same time

8x CD & 100MB HD - external SCSI	£130	£152.75
8x CD & 500MB HD - external SCSI	£150	£176.25

REMOVABLE MEDIA Zip 100MB media fR £9.40 Zip 100MB media (6 pack) £52.88 £45 Syquest 105MB media £29 £34.08 Syquest 135MB media 624.68 £21 Syquest 230MB media £19 (2233 Syquest 270MB media £32 £37.60 MaxIT 500MB media £29 £34.08 Nomai 750MB media £38 £44.65 JAZ IGB media £58 £68.15 SyJet 1.5GB media £55 £64.63 JAZ 2GB media £79 £92.83 PD 630MB media £18 £21.15 CD 630MB write once media (Pk of 10) £12 £14.10 CD 630MB re-write media £12 £14.10 COLOUR MONITORS

3 year warranty on all monitors (1 year		18)	
CT supply the full range of Acorn systems including the latest release — Phoebe. We offer special prices which include generous free software packages and the acclaimed Castle Technology technical support helpline.			
ACORN AKF18 14" - pre RiscPC 14" SVGA 15" digital SVGA 15" digital SVGA 15" digital SVGA liyama 17" digital SVGA Pro 0.25 liyama 21" digital SVGA liyama 14" colour LCD display (TFT Analogue)	£99 £85 £99 £189 £159 £329 £729 £729 £799	£116.33 £99.88 £116.33 £222.08 £186.83 £386.58 £856.58 £938.83	
INKJET PRINTE inc FREE data cable & Acorn driver' Advanced inkjet technology for bright colour		£20	
Advanced inkjet technology for bright colour images & fast printing times. Up to 720dpi resolution (near photographic quality). Supplied with Acorn drivers & data cables.	M	4	
CANON BJC-80 CANON BJC-4300 CANON BJC-4300 CANON BJC-4650 CANON BJC-620 EPSON Stylus colour 300 EPSON Stylus colour 440 EPSON Stylus colour 440 EPSON Stylus colour 640 EPSON Stylus colour 800 Parallel printer cable Turbo driver for above printers Acorn printer driver for any listed printer TCP/IP (LPR) postscript printer driver	£149 £84 £105 £227 £179 £109 £115 £149 £219 £10 £45 £10 £175	E175.08 E98.70 E123.38 E266.73 E210.33 E128.08 E135.13 E175.08 E157.33 E11.75 E52.88 E11.75 E52.88 E11.75 E205.63	
DOA warranty only			
JPI50 sheet feeder Master 128 motherboard German keyboards RisCPC/A7000 etc A5000 Power Supply Unit SJ Econet Bridge Acorn Econet interface SJ Econet starter kit PC card for A3000 A3010 A3020 A4000 Startwrite wordprocessor	£10 £10 £15 £20 £5 £20 £99 £5	E11.75 E11.75 E11.75 E17.63 E23.50 E5.88 E23.50 E116.33 E5.88	
Sales lines open Monday to Friday 9.00am Saturday 10.00am till 1.00pm Contact us by e-mail: sales@castle-techni Visit our web site! http://www.castle-tech	ology.co.u	ık	

All trademarks acknowledged. E&OE. All products carry a full I year warranty unless otherwise stated.

PHONE 01728 621222

FREEFAX 0800 783 9638

PHONE 01728 621222



features

Java It's the hottest thing since the Web, find out how to brew your own

Creating AUCD4

The trials, tribulations and lessons of the latest Acorn User CD-ROM



Get cracking Help RISC OS attract worldwide attention, join the RC5 cracking contest

Published by



Media House, Adlington Park, Macclesfield SK10 4NP e-mail enquiries@acornuser.com http://www.acornuser.com/ Tel: (01625) 878888 Fax: (01625) 850652 Printed by Apple Web Offset, Warrington

> Editor Steve Turnbull Art Editor Alan Jones

Contributors Dave Acton, Ian Burley, Mike Cook, David Dade, Dave Lawrence, Steve Mumford, Jill Regan, Steve Scott. Pam Turnbull. Paul Wheatley

Account Manager John Snowden Ad Production Steve Scott Production Manager Alan Jones Finance Manager Charlie Moran Circulation Director Darren Whiteman Distribution COMAG (01895) 444055 Managing Director Steve Turnbull

Subscriptions: Database Direct 0870 6060424 E-mail: dbscot@globalnet.co.uk 13 issue subscription rate: E39.99 (UK), E53.99 (EU), E68.99 (World)

Acorn User is available as speech from the Talking Newspaper Association UK

©1998 Tau Press Ltd.

No material may be reproduced in whole or in part without written permission. While every care is taken, the publishers cannot be held legally responsible for any errors in articles, listings or advertisements and the views of contributors do not necessarily reflect the views of the publishers

regulars

News Latest on what's happening in the Acorn market and beyond



Typography plus lots more

Getting Internet access via Freeserve plus hit counters for your web page

Public Domain Brand new Stunt Racer track designer, Revelation demos and more

PC column

Games benefits of the new PCPro 3 and its effects on CD access

- Is the Acorn music scene collapsing with the untimely death of Phoebe?
- Cover disc What's not on this month's cover disc because we couldn't fit it on

Game show

Deeper and down: not an ageing rock band, but a review of Descent

Subscriptions page Take advantage of our fantastic new offers – subscribe today



The Regan Files

Talking to Neil Carson and Mark Brinicombe, a major chunk of Causality

"On the Brink..."

Year 2000 video offe	r Page 14
Two Programmer's Toolk	cits Page 60
Advertisers Index	Page 23
Back issues	Page 70
Free Ads P	Pages 32 & 56
	CANDER CARL CONTRACTOR CONTRACTOR CONTRACTOR

hands on

Wimp C

Getting down to the basics of handling icons using the C language

*INFO

More mind-blowing stuff from the Double Dave's and their prolific pals





Rambles through Acorn Wood Mike Cook hikes through the misty glades of more Acorn difficulties

Subscription Offers

Take advantage of our fantastic offers on page 78

reviews

6 Portable money management We check out a range of finance packages for the Psion machines



Touchpad

Another alternative method of input, glide your finger and tap to click

System lockout

How much protection can you give your machine against hackers?



Wimp programming in Basic We compare WimpWorks and WimpBasic, which is the way to go?

education



Editorial



Dazzling graphics Dazzle Plus gets the treatment as we



Where in the world? An Acorn User buyer's guide to the

very best geography software



Next month in Acorn User

More on cooking with Java, more speakers for your computer. Plus an amazing Film Trailer cover CD On sale 24 December 1998

	Curriculum Training Associates
	Dept. AUxmas, 168 Elliott St.
	See us at The Acorn Midlands Show Gtr. Manchester
EMAIL: sales@cta.u-net.com http://	//www.cta.u-net.com Tel - 01942 797777 Fax - 01942 797711 M29 8DS
CTA DIRECT ARE NOW	*** XMAS OFFER*** FREE Internet connection worth £99
INTERNET SERVICE	inc 5mb webspace & 5 E-Mail accounts, on all new systems.
PROVIDERS	IDE HARD DRIVES AND SUB-SYSTEMS WHY PAY MORE???
We can offer Domain names,	A3000/A3010 Hard drives A3020 Hard drives A4000/A5000/A400 RPC 1&2/A7000
registration and maintenance, web design, virtual server, secure server,	Ex. VAT Inc. VAT Ex. VAT Inc. VAT Ex. VAT Inc. VAT Ex. VAT Inc. VAT Internal 85/120 Mb £ 99 £116.33 85Mb £49 £57.58 420Mb * £76 £89.30 512Mb £59 £69.33
Web server housing, Web & FTP space.	Internal 170 Mb £109 £128.08 170Mb £59 £69.33 540Mb * £85 £99.88 1.2Gb £70 £82.25 Internal 340 Mb £129 £151.58 340Mb £79 £92.83 700Mb * £93 £109.28 2.1Gb £80 £94.00
Introductory special offers	Internal 512 Mb £139 £163.33 512Mb £89 £104.58 1.2Gb *£115 £135.13 3.2Gb £90 £105.75
***1 extra Free months Access *** *** with all packs ***	Internal 1 Gb £159 £186.83 1 Gb * £159 £186.83 3.2Gb *£135 £158.63 6.4Gb £110 £129.25
1 years unlimited access for £99inc vat	Internal 2 Gb £169 £198.58 2 Gb * £169 £198.58 4.0Gb *£145 £170.38 8.4Gb £135 £158.63 Internal 3 Gb £179 £210.33 3 Gb * £179 £210.33 * inc. internal removable HD & 13.6Gb £200 £235.00
33K Modem and 1 yr. for £99 (£116.33) 56K V90 Modem + 1yr £125 (£146.88)	External A3000 add £20,00 +VAT includes CD ROM interface includes CD ROM interface includes CD ROM interface
233Mhz RiscPC Offers	
e.g. RPC SA 2M+32Mb/2.1G/32x CD	CD-ROMS SCSI HARD DRIVES IDE internal IDE external SCSI external 540M (limited Stock) £60.00 (£70.50)
& 17" monitor for only £1125 + VAT RPC SA base models from £854 inc VAT	32 x £45.00 (£52.88) £99.00 (£116.33) £70.00 (£82.25) £125.00 (£146.88) 1.0Gb £70.00 (£82.25)
AND we will match or beat your best offer.	24 x £39.00 £45.83 £95.00 £111.63 £60.00 £70.50.0 £115.00 £135.13 2Gb 7200rpm) £125.00 £146.88 16 x £34.00 £39.95 £89.00 £104.58 £40.00 £47.00 £95.00 £111.63 4.3Gb 540.00 or 7200rpm) £150.00 £176.25
A7000+ System Offers A7000 +16M / 2.1G / 32xCD /15" mon	12 x £34.00 (£39.95) £89.00 (£104.58) £34.00 (£39.95) £90.00 (£105.75) 4.3Gb (10,000rpm) £255.00 (£299.63) 8 x £30.00 (£35.25) £84.26 (£99.00) £30.00 (£329.00) 5.30.00 £32.25 £84.26 £99.00) 9.1Gb (7200rpm) £280.00 £329.00)
& Stereo Spk for only £749 ex. VAT	EXTERNAL IDE REQUIRE SUITABLE I/F EXT SCS1 includes SC
Please ask for other combinations	
Special Offer SCSI 8x 4 disc	REMOVABLE HARD DRIVES Panasonic PD / CD-ROM from £139.00 + Vat
	IDE internal IDE external SCSI internal SCSI external Parallel PC /Mac Parallel ACORN Zip 100 £69.00 £81.08) £129.00 £115.08) £100.00 £117.50) £100.00 £100.00 £117.50)<
A HIACHAROPES ANIV	
Autochangers only £99.00 + vat (£116.33)	Zlp 100 £59.00 £129.00 £137.50 £100.00 £117.50 £100.00 £117.50 £115.00 £137.30 Ezflyer 230 £105.00 £165.00 £165.00 £165.00 £215.00 £252.63 £100.00 £165.00 £165.00 £215.00 £252.63 £165.00 £165.00 £165.00 £215.00 £252.63 £165.00 £165.00 £165.00 £165.00 £215.00 £252.63 £165.00 £165.00 £165.00 £165.00 £215.00 £252.63 £165.00 £165.00 £165.00 £165.00 £165.00 £252.63 £165.00 £
	Ezflyer 230 £80.00 (£94.00) £130.00 (£152.75)
£99.00 + vat (£116.33)	Ezflyer 230 £80.00 £94.00 £130.00 £125.75) Nomai 750 £165.00 £193.88) £215.00 £252.63) Jaz 1Gb £189.00 £222.08) £199.00 £233.83) £224.00 £249.00 £292.58)
£99.00 + vat (£116.33) Limited quantity Available MONITORS Sale now on Ex. VAT Inc. VAT 14" SVGA 0.28 (3yr on-site) £89.00 £104.58	Ezflyer 230 Ezflyer 230 Extract 230
£99.00 + vat (£116.33) Limited quantity Available MONITORS Sale now on Ex. VAT Inc. VAT 14" SVGA 0.28 (3yr on-site) 14" SVGA 0.28 (3yr on-site) 15" SVGA 0.28 (3yr on-site) £110.00 £129.25 15" SVGA 0.28 (3yr on-site) £110.00 £129.25	Ezflyer 230 Extraction E80.00 (£94.00) £130.00 (£152.75) Nomai 750 £165.00 £193.88) £215.00 (£252.63) 5 Jaz 1Gb £189.00 £222.08) £199.00 (£233.83) £224.00 (£263.20) £249.00 (£292.58) Syjet 1.5G £219.00 (£257.33) £269.00 (£316.08) £279.00 (£327.83) £279.00 (£327.83) £279.00 (£327.83) £279.00 (£327.83) £279.00 (£327.83) £279.00 (£345.45) £324.00 (£380.70) #* REMOVABLE IDE REQUIRE SUITABLE INTERFACE. EXTERNAL SCSI INCLUDE SCSI I CABLE , SCSI II CABLE £5.00 +VAT EXTRA Interface Adapters Ex. VAT Inc.VAT EX. VAT Inc.VAT
£99.00 + vat (£116.33) Limited quantity Available MONITORS Sale now on Ex. VAT Inc. VAT 14" SVGA 0.28 (3yr on-site) £89.00 £104.58 14" SVGA 0.28 Multi-Media £110.00 £129.25 15" SVGA 0.28 (3yr on-site) £110.00 £129.25 15" SVGA 0.28 (3yr on-site) £10.00 £129.25 15" SVGA 0.28 (Multi-Media £129.00 £151.57 17" SVGA Home Multimedia £150.00 £176.25	Ezflyer 230 Ext. VAT
£99.00 + vat (£116.33) Limited quantity Available MONITORS Sale now on Ex. VAT Inc. VAT 14" SVGA 0.28 (3yr on-site) £89.00 £104.58 14" SVGA 0.28 (3yr on-site) £10.00 £129.25 15" SVGA 0.28 (3yr on-site) £110.00 £129.25 15" SVGA 0.28 (3yr on-site) £110.00 £129.25 15" SVGA 0.28 (3yr on-site) £10.00 £129.25 17" SVGA 0.28 (3yr on-site) £10.00 £125.25 17" SVGA 0.28 (3yr on-site) £20.00 £235.00 17" SVGA 0.28 (3yr on-site) £200.00 £352.50 17" SVGA 0.25 (3yr on-site) £300.00 £352.50	Eztlyer 230 Extraction E80.00 (£94.00) £130.00 (£152.75) Nomai 750 £165.00 £193.08 £215.00 (£252.63) 10000 (£263.20) £249.00 (£263.20) £249.00 (£263.20) £249.00 (£292.58) Syjet 1.5G £219.00 (£257.33) £269.00 (£311.38) £255.00 (£311.38) £279.00 (£232.83) £279.00 (£237.83) £279.00 (£237.83) £279.00 (£237.83) £279.00 (£237.83) £279.00 (£237.83) £279.00 (£237.83) £279.00 (£327.83) £279.00 (£327.83) £279.00 (£327.83) £279.00 (£327.83) £279.00 (£327.83) £279.00 (£327.83) £279.00 (£327.83) £249.00 (£327.83) £249.00 (£327.83) £279.00 (£327.83) £249.00 (£327.83) £249.00 (£327.83) £324.00 (£38.07) £300 £300.70) ¥ ¥ ¥ ¥ ¥ ¥ ¥ ¥ ¥ ¥ ¥ ¥
£99.00 + vat (£116.33) Limited quantity Available MONITORS Sale now on Ex. VAT Inc. VAT 14" SVGA 0.28 (3yr on-site) 14" SVGA 0.28 (3yr on-site) 14" SVGA 0.28 (3yr on-site) 15" SVGA 0.28 (3yr on-site) 15" SVGA 0.28 (3yr on-site) 15" SVGA 0.28 (3yr on-site) 17" SVGA 0.28 (3yr on-site) 17" SVGA 0.28 (3yr on-site) 17" NGA 0.25 (3yr on-site) 17" MUHisync (17" AKF50) 17" MUHisync (17" AKF50) 17" Ilyama Pro	Eztlyer 230 Ext. Var E165.00 (£193.88) £215.00 (£252.63) Jaz 1Gb £165.00 (£193.88) £215.00 (£223.83) £224.00 (£263.20) £249.00 (£292.58) Syjet 1.5G £219.00 (£257.33) £269.00 (£316.08) £219.00 (£233.83) £224.00 (£263.20) £249.00 (£292.58) Jaz 2Gb £269.00 (£316.08) £219.00 (£257.33) £269.00 (£317.88) £279.00 (£327.83) £279.00 (£327.83) £279.00 (£327.83) £279.00 (£345.45) £324.00 (£380.70) * REMOVABLE IDE REQUIRE SUITABLE INTERFACE. EXTERNAL SCSI INCLUDE SCSI I CABLE , SCSI II CABLE £5.00 + VAT EXTRA Idb Jazz £58.00 £68.15 100mb Zip £38.30 £45.00 1.68 Jazz £58.00 £68.15 Storm SCSI 16 bit (podule) £96.00 £112.80 120mb LS120 £7.50 £8.81 CDR CD-ROM £1.28 £1.50 CDR 10 pack £10.00 £11.75 Storm SCSI 32 bit (podule) £128.00 £150.40 230 Syquest £19.90 £23.38 CDR 10 pack
£99.00 + vat (£116.33) Limited quantity Available MONITORS Sale now on Ex. VAT Inc. VAT 14" SVGA 0.28 (3yr on-site) £89.00 £104.58 14" SVGA 0.28 (Multi-Media £110.00 £129.25 15" SVGA 0.28 (3yr on-site) £110.00 £129.25 15" SVGA 0.28 (3yr on-site) £100.00 £129.25 15" SVGA 0.28 (3yr on-site) £100.00 £129.25 17" SVGA 0.28 (3yr on-site) £200.00 £235.00 17" SVGA 0.28 (3yr on-site) £300.00 £352.50 17" Nultisync (17" AKF50) £300.00 £352.50 17" Ijama Pro £340.00 £470.00 20" SVGA 0.28 (Special) £300.00 £352.50	Eztlyer 230 Extra test E80.00 (£94.00) £130.00 (£152.75) Nomai 750 £165.00 £193.08) £215.00 (£252.63) 1000 (£263.20) £249.00 (£263.20) £249.00 (£263.20) £249.00 (£222.58) 1000 £219.00 (£257.33) £269.00 (£311.38) £224.00 (£263.20) £249.00 (£222.58) £219.00 (£233.83) £224.00 (£263.20) £249.00 (£222.58) £219.00 (£263.20) £249.00 (£222.58) £219.00 (£257.33) £269.00 (£311.38) £224.00 (£232.83) £279.00 (£237.83) £279.00 (£237.83) £279.00 (£237.83) £279.00 (£327.83) £249.00 (£327.83) £249.00 (£327.83) £249.00 (£327.83) £249.00 (£327.83) £279.00 (£327.83) £249.00 (£327.83) £249.00 (£327.83) £249.00 (£327.83) £249.00 (£327.83) £249.00 (£327.83) £249.00 (£327.83) £249.00 (£327.83) £279.00 £237.83
£99.00 + vat (£116.33) Limited quantity Available MONITORS Sale now on Ex. VAT Inc. VAT 14" SVGA 0.28 (3yr on-site) £89.00 £104.58 14" SVGA 0.28 (Multi-Media £110.00 £129.25 15" SVGA 0.28 (Multi-Media £129.00 £151.57 17" SVGA 0.28 (3yr on-site) £100.00 £129.25 15" SVGA 0.28 (3yr on-site) £100.00 £152.50 17" SVGA 0.28 (3yr on-site) £200.00 £352.50 17" SVGA 0.28 (3yr on-site) £300.00 £352.50 17" SVGA 0.26 (3yr on-site) £300.00 £352.50 17" Ilyama Pro £340.00 £399.50 19" SVGA 0.26 (3yr on-site) £400.00 £470.00	Eztlyer 230 Ext. VAT
£99.00 + vat (£116.33) Limited quantity Available MONITORS Sale now on Ex. VAT E89.00 fl04.58 14" SVGA 0.28 (3yr on-site) £89.00 fl04.58 14" SVGA 0.28 (3yr on-site) fl0.00 fl29.25 15" SVGA 0.28 (3yr on-site) fl10.00 fl29.25 15" SVGA 0.28 (3yr on-site) fl10.00 fl29.25 15" SVGA 0.28 (3yr on-site) fl0.00 fl252.50 17" SVGA 0.28 (3yr on-site) fl00.00 fl252.50 17" SVGA 0.28 (3yr on-site) f300.00 fl352.50 17" SVGA 0.26 (3yr on-site) f300.00 fl352.50 17" SVGA 0.26 (3yr on-site) f400.00 fl352.50 17" SVGA 0.26 (3yr on-site) f200.00 fl352.50 17" SVGA 0.26 (3yr on-site) f200.00 fl352.50 19" SVGA 0.26 (3yr on-site) f200.00 fl352.50 21" SVGA 0.25 (3yr on-site) f200.00 fl352.50 21" SVGA 0.26 (3yr on-site) f200.00 fl352.50 21" SVGA 0.25 (3yr on-site) f200.00 fl352.50 21" SVGA 0.25 (3yr on-site) f259.00 fl891.83 21" liyama Pro (A101GT) f259.00 fl891.83 21" liyama Pro (A102GT) f820.00 fl963.50 38	Eztiyer 230 External SCSI In CABLE (5:00) £130.00 £130.00 £132.75) Nomai 750 £165.00 £193.88) £215.00 £224.00 £263.20) £249.00 £229.258) Syjet 1.5G £219.00 £257.33) £269.00 £316.08) £279.00 £232.83) £224.00 £263.20) £249.00 £229.258) Syjet 1.5G £219.00 (£257.33) £269.00 £316.08) £279.00 £327.83) £279.00 £237.83) £279.00 £327.83) £279.00 £327.83) £279.00 £327.83) £279.00 £327.83) £279.00 £327.83) £279.00 £327.83) £279.00 £327.83) £279.00 £327.83) £279.00 £327.83) £279.00 £327.83) £279.00 £327.83) £279.00 £327.83) £279.00 £327.83) £279.00 £327.83) £279.00 £327.83) £279.00 £327.83) £279.00 £327.83 £279.00 £327.83 £279.00 £327.83 £279.00 £327.83 £279.00 £327.83 £279.00
£99.00 + vat (£116.33) Limited quantity Available MONITORS Sale now on Ex. VAT Inc. VAT 14" SVGA 0.28 (3yr on-site) 15" SVGA 0.28 (3yr on-site) 15" SVGA 0.28 (3yr on-site) 16" SVGA 0.28 (3yr on-site) 17" SVGA 0.25 (3yr on-site) 1800.00 £352.50 17" SVGA 0.26 (3yr on-site) 19" SVGA 0.26 (3yr on-site) 5300.00 £352.50 19" SVGA 0.26 (3yr on-site) 5300.00 £352.50 19" SVGA 0.26 (3yr on-site) 5300.00 £352.50 21" SVGA 0.25	Ezflyer 230 Extension
£99.00 + vat (£116.33) Limited quantity Available MONITORS Sale now on Ex. VAT Inc. VAT 14" SVGA 0.28 (3yr on-site) 14" SVGA 0.28 (3yr on-site) 14" SVGA 0.28 (3yr on-site) 15" SVGA 0.28 (3yr on-site) 1600 £129.25 15" SVGA 0.28 (Multi-Media £110.00 £129.25 15" SVGA 0.28 (Multi-Media £129.00 £151.57 17" SVGA 0.28 (Multi-Media £129.00 £151.57 17" SVGA 0.28 (3yr on-site) £00.00 £129.25 15" SVGA 0.28 (3yr on-site) £10.00 £129.25 15" SVGA 0.28 (3yr on-site) £100.00 £352.50 17" Multisyne (17" AKF50) 200.00 £352.50 19" SVGA 0.26 (3yr on-site) £300.00 £352.50 21" liyama Pro (A101GT) 21" liyama Pro (A102GT) 21" liyama Pro (A102GT) 21" liyama Pro (A102GT) 21" SUGA 0.25 (3yr on-site) £1505.00 £187.13 AKF18/2 Multisyne (14") AKF53 Multisyne (14") AKF50 Multi-syne (14") Multisyne A300/3000 cable £8.50 £9.90	Ezilyer 230 Ex. Val.
£99.00 + vat (£116.33) Limited quantity Available MONITORS Sale now on Ex. VAT Inc. VAT 14" SVGA 0.28 (3yr on-site) £89.00 £104.58 14" SVGA 0.28 (3yr on-site) £100.00 £129.25 15" SVGA 0.28 (3yr on-site) £110.00 £129.25 15" SVGA 0.28 (3yr on-site) £110.00 £129.25 15" SVGA 0.28 (3yr on-site) £100.00 £176.25 17" SVGA 0.28 (3yr on-site) £200.00 £352.50 17" SVGA 0.28 (3yr on-site) £300.00 £352.50 17" SVGA 0.28 (3yr on-site) £400.00 £470.00 20" SVGA 0.28 (3yr on-site) £400.00 £470.00 20" SVGA 0.28 (3yr on-site) £595.00 £699.13 21" Iiyama Pro (A101GT) £759.00 £891.83 21" Iiyama Pro (A102GT) £820.00 £963.50 38" SVGA (1yr on-site) £1595.00£1874.13 AKF18/2 Multisyne £115.00 £135.13 AKF50 Multi-syne (14") £159.00 £233.83 Multisyne A300/3000 cable £8.50 £9.99	Ezilyer 230 Exilian
£99.00 + vat (£116.33) Limited quantity Available MONITORS Sale now on Ex. VAT ne. VAT 14" SVGA 0.28 (3yr on-site) £89.00 £104.58 14" SVGA 0.28 (3yr on-site) £89.00 £104.58 14" SVGA 0.28 (3yr on-site) £10.00 £129.25 15" SVGA 0.28 (3yr on-site) £110.00 £129.25 15" SVGA 0.28 (3yr on-site) £10.00 £129.25 15" SVGA 0.28 (3yr on-site) £10.00 £176.25 17" SVGA 0.28 (3yr on-site) £300.00 £352.50 17" SVGA 0.26 (3yr on-site) £300.00 £352.50 17" Multisyne (17" AKF50) £300.00 £352.50 17" SVGA 0.26 (3yr on-site) £400.00 £470.00 20" SVGA 0.26 (3yr on-site) £400.00 £470.00 20" SVGA 0.26 (3yr on-site) £400.00 £470.00 21" SVGA 0.26 (3yr on-site) £400.00 £470.00 20" SVGA 0.26 (3yr on-site) £400.00 £471.00 20" SVGA 0.26 (3yr on-site) £400.00 £471.00 21" SVGA 0.26 (3yr on-site) £400.00 £471.00 21" SVGA 0.26 (3yr on-site) £400.00 £471.00 21" SVGA 0.26 (3yr on-site) £595.00 £699.13 21" liyama Pro (A101GT) £759.00 £81.83 21" liyama Pro (A102GT) £820.00 £963.50 38" SVGA (1yr on-site) £1595.00 £135.13 AKF18/2 Multisyne £115.00 £135.13 AKF53 Multisyne (14") £150.00 £135.13 AKF50 Multi-syne (14") £159.00 £233.83 Multisyne A300/3000 cable £5.50 £9.99 THE BEST! PRINTER PRICES (Please ring for latest prices) Ex. VAT Inc. VAT Canon BIC 800W portable col. £159.00 £186.83 Canon BIC 250 colour A4 £84.00 £98.70	Ezilyer 230 Exilyer 230 <thexilyer 230<="" th=""> <thexilyer 230<="" th=""></thexilyer></thexilyer>
£99.00 + vat (£116.33) Limited quantity Available MONITORS Sale now on Ex. VAT Inc. VAT 14" SVGA 0.28 (3yr on-site) £89.00 £104.58 14" SVGA 0.28 (3yr on-site) £10.00 £129.25 15" SVGA 0.28 (3yr on-site) £110.00 £129.25 15" SVGA 0.28 (3yr on-site) £110.00 £129.25 15" SVGA 0.28 (3yr on-site) £100.00 £176.25 17" SVGA 0.28 (3yr on-site) £200.00 £235.00 17" SVGA 0.25 (3yr on-site) £300.00 £352.50 17" Multisync (17" AKF50) £300.00 £352.50 17" SVGA 0.26 (3yr on-site) £400.00 £470.00 20" SVGA 0.25 (3yr on-site) £400.00 £470.00 20" SVGA 0.25 (3yr on-site) £400.00 £470.00 21" SVGA 0.25 (3yr on-site) £400.00 £470.00 20" SVGA 0.25 (3yr on-site) £400.00 £470.00 21" SVGA 0.25 (3yr on-site) £400.00 £470.00 20" SVGA 0.25 (3yr on-site) £400.00 £470.00 20" SVGA 0.25 (3yr on-site) £400.00 £470.00 21" SVGA 0.25 (3yr on-site) £400.00 £470.00 21" SVGA 0.25 (3yr on-site) £400.00 £470.00 20" SVGA 0.25 (3yr on-site) £400.00 £470.00 21" SVGA 0.25 (3yr on-site) £400.00 £470.00 21" SVGA 0.25 (3yr on-site) £1595.00 £1874.13 AKF53 Multisync (14") £165.00 £133.83 AKF50 Multi-sync (14") £115.00 £133.83 AKF50 Multi-sync (14") £15.00 £133.83 Multisync A300/3000 cable £8.50 £9.99	Ezilyer 230 Exilyer 230 <thexilyer 230<="" th=""> <thexilyer 230<="" th=""></thexilyer></thexilyer>
£99.00 + vat (£116.33) Limited quantity Available MONITORS Sale now on Ex. VAT Inc. VAT [4" SVGA 0.28 (3yr on-site) £89.00 £104.58 [4" SVGA 0.28 (3yr on-site) £110.00 £129.25 [5" SVGA 0.28 (3yr on-site) £110.00 £129.25 [5" SVGA 0.28 (3yr on-site) £110.00 £129.25 [5" SVGA 0.28 (3yr on-site) £100.00 £176.25 [5" SVGA 0.28 (3yr on-site) £200.00 £352.50 [7" SVGA 0.28 (3yr on-site) £300.00 £352.50 [7" SVGA 0.28 (3yr on-site) £300.00 £352.50 [7" Multisyne (17" AKF50) £300.00 £352.50 [7" NVGA 0.26 (3yr on-site) £300.00 £352.50 [2" SVGA 0.26 (3yr on-site) £595.00 £699.13 [2" liyama Pro (A101GT) £759.00 £891.83 [21" liyama Pro (A101GT) £759.00 £891.83 [21" liyama Pro (A102GT) £820.00 £963.50 [38" SVGA (1yr on-site) £1595.00£1874.13 AKF18/2 Multisyne £115.00 £135.13 [4KF53 Multisyne (14") £159.00 £135.83 [59.50] £199.99 THE BEST! PRINTER PRICES (Please ring for latest prices) Canon BJC 4300 colour A4 £110.00 £129.25 Canon BJC 4300 colour A4 £110.00 £129.25 Canon BJC 4300 colour A4 £115.00 £135.13 [59.50] Canon BJC 4400 colour A4 £115.00 £135.13 [59.50] Canon BJC 4400 colour A4 £115.00 £135.13 [59.50] Canon BJC 4400 colour A4 £115.00 £135.13 [59.50] Canon Stylus 440 colour A4 £115.00 £135.13	Ezilyer 230 Eallyer 230 <theallyer 230<="" th=""> <theallyer 230<="" th=""></theallyer></theallyer>
£99.00 + vat (£116.33) Limited quantity Available MONITORS Sale now on Ex. VAT Inc. VAT 14" SVGA 0.28 (3yr on-site) £89.00 £104.58 14" SVGA 0.28 (3yr on-site) £100.00 £129.25 15" SVGA 0.28 Multi-Media £129.00 £176.25 15" SVGA 0.28 (3yr on-site) £110.00 £129.25 15" SVGA 0.28 (3yr on-site) £110.00 £129.25 15" SVGA 0.28 (3yr on-site) £100.00 £176.25 17" SVGA 0.28 (3yr on-site) £300.00 £352.50 17" SVGA 0.26 (3yr on-site) £300.00 £352.50 17" Multisyne (17" AKF50) £300.00 £352.50 17" SVGA 0.26 (3yr on-site) £400.00 £352.50 17" SVGA 0.26 (3yr on-site) £400.00 £470.00 20" SVGA 0.26 (3yr on-site) £400.00 £470.00 20" SVGA 0.26 (3yr on-site) £505.00 £691.13 21" Iiyama Pro (A101GT) £759.00 £891.83 21" Iiyama Pro (A102GT) £820.00 £963.50 38" SVGA (1yr on-site) £155.00 £1874.13 AKF18/2 Multisyne (14") £115.00 £135.13 34KF50 Multi-syne (14") £115.00 £133.13 34KF50 Multi-syne (14") £150.00 £138.63 Canon BJC 250 colour A4 £84.00 £98.70 Canon BJC 4300 colour# A4 £110.00 £129.25 Canon BJC 4300 colour# A4 £110.00 £129.25 Canon BJC 450 colour A4 £110.00 £129.25 Canon BJC 450 colour# A4 £110.00 £173.01 Ex. VAT Inc. VAT Canon BJC 450 colour# A4 £110.00 £129.25 Canon BJC 450 colour# A4 £110.00 £129.25 Canon BJC 450 colour# A4 £110.00 £129.25 Canon BJC 450 colour# A4 £110.00 £173.01 Epson Stylus 850 Colour A4 £140.00 £173.90 Epson Stylus 850 Colour A4 £140.00 £173.90 Canon SJC 440 colour A4 £140.00 £173.91 Canon SJC 440 colour A4 £140.00 £173.91 Epson Stylus 850 Colour A4 £140.00 £170.25 Epson Stylus 850 Colour A4 £140.00 £170.25 Epso	Eztlyer 230 Extlyer 230 <thextlyer 230<="" th=""> <thextlyer 230<="" th=""></thextlyer></thextlyer>
£99.00 + vat (£116.33) Limited quantity Available MONITORS Sale now on Ex. VAT Inc. VAT [4" SVGA 0.28 (3yr on-site) £89.00 £104.58 [4" SVGA 0.28 (3yr on-site) £110.00 £129.25 [5" SVGA 0.28 (3yr on-site) £110.00 £129.25 [5" SVGA 0.28 (3yr on-site) £110.00 £129.25 [5" SVGA 0.28 (3yr on-site) £100.00 £176.25 [5" SVGA 0.28 (3yr on-site) £200.00 £352.50 [7" SVGA 0.28 (3yr on-site) £300.00 £352.50 [7" SVGA 0.28 (3yr on-site) £300.00 £352.50 [7" NUdisyne (17" AKF50) £300.00 £352.50 [7" NUdisyne (17" AKF50) £300.00 £352.50 [1" Multisyne (17" AKF50) £300.00 £352.50 [2" SVGA 0.26 (3yr on-site) £400.00 £470.00 20" SVGA 0.28 (5pecial) £300.00 £352.50 [21" SVGA 0.26 (3yr on-site) £595.00 £699.13 [21" liyama Pro (A101GT) £759.00 £891.83 [21" liyama Pro (A101GT) £759.00 £891.83 [21" liyama Pro (A101GT) £820.00 £963.50 [38" SVGA (1yr on-site) £1595.00£1874.13 AKF18/2 Multisyne £115.00 £135.13 [595.00 £193.88 £199.00 £233.83 [50.00 £193.88 [59.00 £186.83 Canon BJC 4300 colour A4 £43.00 £98.70 Canon BJC 4300 colour A4 £115.00 £135.13 [59.00 £186.83 Canon BJC 250 colour A4 £115.00 £135.13 [59.00 £186.83 Canon BJC 4300 colour# A4 £115.00 £135.13 [59.00 5tylus 440 colour A4 £115.00 £135.13 [59.00 5tylus 520 Colour A4 £18.00 £222.08 [59.00 Stylus 520 Colour A4 £18.00 £222.50 [59.00 Stylus 520 Colour A4 £18.00 £222.50 [59.00 Stylus 520 Colour A4 £18.00 £222.50 [59.00 Stylus 520 Colour A4 £13.00 £17.35 [59.00 Stylus 520 Colour A4 £13.00 £17.35 [59.00 Stylus 520 Colour A4 £13.00 £27.25 [59.00 Stylus 520 Colour A4 £13.00 £27.25 [59.00 Stylus 520 Colour A4 £13.00 £35.13 [50.00 Stylus 520 Colour A4 £13.00 £35.13 [50.00 Stylus 520 Colour A4 £13.00 £27.25 [59.00 Stylus 520 Colour A4 £13.00 £27.25 [59	Eztlyer 230 Ethyse 230 <theftys 230<="" th=""> Ethyse 230 Ethyse 2</theftys>
£99.00 + vat (£116.33) Limited quantity Available MONITORS Sale now on Ex. VAT Inc. VAT [4" SVGA 0.28 (3yr on-site) £89.00 £104.58 [4" SVGA 0.28 (3yr on-site) £10.00 £129.25 [5" SVGA 0.28 (3yr on-site) £110.00 £129.25 [5" SVGA 0.28 (3yr on-site) £110.00 £129.25 [5" SVGA 0.28 (3yr on-site) £10.00 £176.25 [7" SVGA 0.28 (3yr on-site) £200.00 £352.50 [7" SVGA 0.28 (3yr on-site) £300.00 £352.50 [7" NUdisyne (17" AKF50) £300.00 £352.50 [7" Multisyne (17" AKF50) £300.00 £352.50 [7" NVGA 0.26 (3yr on-site) £300.00 £352.50 [7" SVGA 0.26 (3yr on-site) £300.00 £352.50 [1" Multisyne (17" AKF50) £300.00 £352.50 [1" SVGA 0.26 (3yr on-site) £300.00 £352.50 [1" SVGA 0.26 (3yr on-site) £595.00 £699.13 [1" liyama Pro (A101GT) £759.00 £891.83 [21" liyama Pro (A102GT) £759.00 £891.83 [21" liyama Pro (A102GT) £820.00 £963.50 [38" SVGA (1yr on-site) £1595.00£1874.13 AKF18/2 Multisyne £115.00 £135.13 [4KF50 Multi-syne (14") £165.00 £193.88 [4KF50 Multi-syne (14") £165.00 £193.83 [48.50 £9.99] THE BEST! PRINTER PRICES (Please ring for latest prices) Ex. VAT Inc. VAT Canon BJC 300 colour A4 £18.00 £87.00 Canon BJC 4300 colour A4 £18.00 £22.08 Canon BJC 4300 colour A4 £18.00 £22.08 Epson Stylus 540 Colour A4 £18.00 £17.39 Epson Stylus 540 Colour A4 £18.00 £27.02 Epson Stylus 540 Colour A4 £18.00 £17.39 Epson Stylus 540 Colour A4 £18.00 £27.25 Epson Stylus 540 Colour A4 £18.00 £17.25 Epson Stylus 540 Colour A4 £18.00 £17.25 Epson Stylus 540 Colour A4 £18.00 £17.25 Epson Stylus 540 Colour A4 £18.00 £17.25	Ethyer 230 E165.00 (£193.88) £215.00 (£252.63) E80.00 (£94.00) £130.00 (£152.75) Syle1 1.50 £219.00 (£252.63) £224.00 (£237.33) £224.00 (£237.33) £224.00 (£237.33) £279.00 (£237.83) £279.00 (£237.83) £279.00 (£237.83) £279.00 (£237.83) £249.00 (£345.45) £234.00 (£306.07) ** REMOVABLE IDE REQUIRE SUITABLE INTERFACE. EXTERNAL SCSI INCLUE SCSI I CABLE, SCSI II CAB
£99.00 + vat (£116.33) Limited quantity Available MONITORS Sale now on Ex. VAT Inc. VAT 14" SVGA 0.28 (3yr on-site) £89.00 £104.58 14" SVGA 0.28 (3yr on-site) £10.00 £129.25 15" SVGA 0.28 (3yr on-site) £110.00 £129.25 15" SVGA 0.28 (3yr on-site) £110.00 £129.25 15" SVGA 0.28 (3yr on-site) £100.00 £176.25 17" SVGA 0.28 (3yr on-site) £300.00 £352.50 17" SVGA 0.28 (3yr on-site) £300.00 £352.50 17" SVGA 0.26 (3yr on-site) £300.00 £352.50 17" SVGA 0.26 (3yr on-site) £400.00 £352.50 17" SVGA 0.26 (3yr on-site) £400.00 £470.00 20" SVGA 0.26 (3yr on-site) £400.00 £470.00 20" SVGA 0.26 (3yr on-site) £400.00 £470.00 20" SVGA 0.26 (3yr on-site) £155.00 £691.13 21" liyama Pro (A101GT) £759.00 £891.83 21" liyama Pro (A102GT) £820.00 £963.50 38" SVGA (1yr on-site) £1595.00£1874.13 AKF53 Multisyne (14") £165.00 £133.88 AKF50 Multi-syne (14") £165.00 £133.88 AKF50 Multi-syne (14") £165.00 £133.88 AKF50 Multi-syne (14") £165.00 £133.88 Canon BJC 250 colour A4 £84.00 £98.70 Canon BJC 4300 colour# A4 £110.00 £129.25 Canon BJC 4300 colour# A4 £110.00 £129.25 Epson Stylus 840 Colour A4 £148.00 £98.70 Canon BJC 450 colour A4 £148.00 £98.70 Canon BJC 450 colour# A4 £118.00 £173.91 Epson Stylus 840 Colour# A4 £118.00 £173.91 Epson Stylus 850 Colour# A4 £188.00 £53.87 Epson Stylus 850 Colour# A4 £188.00 £53.87 Epson Stylus 850 Colour# A4 £188.00 £27.05 Epson Stylus 850 Colour# A4 £188.00 £27.25 Epson Stylus 850 Colour# A4 £17.00 £534.87 HP 670C Colour# A4 £17.00 £534.88 HP 670C Colour# A4 £17.00 £534.88 HP 670C Colour# A4 £17.00 £534.88 HP 895CXI Colour# A4 £22.00 £264.38	Efflyer 230 E180.00 E191.00 E130.00 E221.50 E224.00 E226.30 E224.00 (E237.33) E226.00 (E327.83) E224.00 (E327.83) E230.00 E330.00 E330.00 <the330.20< th=""> E330.00 E330.00</the330.20<>
£99.00 + vat (£116.33) Limited quantity Available MONITORS Sale now on Ex. VAT Inc. VAT [4" SVGA 0.28 (3yr on-site) £89.00 £104.58 [4" SVGA 0.28 (3yr on-site) £100.00 £129.25 [5" SVGA 0.28 Multi-Media £129.00 £129.25 [5" SVGA 0.28 Multi-Media £129.00 £176.25 [5" SVGA 0.28 (3yr on-site) £200.00 £235.00 [7" SVGA 0.28 (3yr on-site) £300.00 £352.50 [7" SVGA 0.26 (3yr on-site) £300.00 £352.50 [2" SVGA 0.28 (3yr on-site) £400.00 £470.00 20" SVGA 0.28 (5pecial) £300.00 £352.50 [2" SVGA 0.28 (3yr on-site) £595.00 £699.13 [2" liyama Pro (A101GT) £759.00 £891.83 [2" liyama Pro (A102GT) £820.00 £963.50 [3% SVGA (1yr on-site) £1595.00 £1874.13 AKF18/2 Multisync [4") £165.00 £133.13 AKF53 Multisync (14") £165.00 £133.83 Multisync A300/3000 cable £8.50 £9.99 THE BEST! PRINTER PRICES [Please ring for latest prices] Ex. VAT Inc. VAT Canon BJC 4300 colour A4 £84.00 £175.30 Epson Stylus 440 colour A4 £115.00 £136.13 Epson Stylus 440 colour A4 £115.00 £135.13 Epson Stylus 850 Colour A4 £115.00 £135.13 [Please ring for latest prices] Ex. VAT Inc. VAT Canon BJC 4300 colour A4 £115.00 £168.83 Canon BJC 4300 colour A4 £115.00 £168.83 Canon BJC 4300 colour A4 £115.00 £163.79 Epson Stylus 440 colour A4 £115.00 £135.13 [Pson Stylus 850 Colour A4 £230.00 £27.025 Epson Stylus 850 Colour A4 £180.00 £27.025 Epson Stylus 850 Colour A4 £282.00 £363.87 Epson Stylus 850 Colour A4 £282.00 £363.87 Epson Stylus 850 Colour A4 £282.00 £363.87 Epson Stylus 850 Colour A4 £180.00 £27.025 Epson	Erlbyer 230 Erlbyer 230 Event of the second s

$ \begin{array}{c} \mathbf{L} \text{SABE} [\mathbf{L}_{2}, \mathbf{L}_{2}, \mathbf{L}$	Contraction in the local data and the local data and the		-		
	3 vr Warranty on A	LL Acorn MEMORY w	y Pay More??		
$ \begin{array}{c} \mathbf{E}_{\mathbf{r},\mathbf{r},\mathbf{r},\mathbf{r},\mathbf{r},\mathbf{r},\mathbf{r},\mathbf{r}$			AORY		
			The A MARTINE		
$ \begin{array}{c} 4.5 \text{ M} \text{ M} \left[1, 0, 0.500^{\circ} \right] & 4 \text{ F1} \left[2 \text{ F1} 2.53 \\ 3.20 \text{ F1} 1.5 \text{ M} \left[2.20 \text{ F1} 2.23 \\ 3.20 \text{ F1} 1.5 \text{ M} \left[2.20 \text{ F1} 2.23 \\ 3.20 \text{ F1} 1.5 \text{ M} \left[2.20 \text{ F1} 2.23 \\ 3.20 \text{ F1} 1.5 \text{ M} \left[2.20 \text{ F1} 2.23 \\ 3.20 \text{ F1} 1.5 \text{ M} \left[2.20 \text{ F1} 2.23 \\ 3.20 \text{ F1} 1.5 \text{ M} \left[2.20 \text{ F1} 2.23 \\ 3.20 \text{ F1} 1.5 \text{ M} \left[2.20 \text{ F1} 2.23 \\ 3.20 \text{ F1} 1.5 \text{ M} \left[2.20 \text{ F1} 2.23 \\ 3.20 \text{ F1} 1.5 \text{ M} \left[2.20 \text{ F1} 2.23 \\ 3.20 \text{ F1} 1.5 \text{ M} \left[2.20 \text{ F1} 2.23 \\ 3.20 \text{ F1} 1.5 \text{ M} \left[2.20 \text{ F1} 2.23 \\ 3.20 \text{ F1} 1.5 \text{ M} \left[2.20 \text{ F1} 1.23 \\ 3.20 \text{ F1} 1.23 $					TAcc+ £89.00 £104.58 5M £7 £8.23
	4-8 MB Up. (A5000*) ↓ £1	19 £139.83 16Mb SIMM £1	7.00 £19.98		1 ACCT 200.00 2110.00 0016 015 017 00
$ \frac{2300}{100000} + 23000 + 2$		Carris Stitler Sa	9.00 1.54.08		AL MAO 199.00 1110.55
$ \begin{array}{c} 1210 \\ 3200 \\ 3$		Jain ngh Clearance at	9.00 £45.83		
$ \frac{1}{12} \frac{1}{2} $		OTHER DELICA		RiscPC/A7000 10base2 &	TAcc+ £99.00 £116.33
$ \frac{1}{2} \sum_{i=1}^{n} \sum_{j=1}^{n} \sum_{i=1}^{n} \sum_{i=1}$			8 30 £45 00 C		
$ \begin{array}{c} \begin{array}{c} 2.50 \\ 2.5$				Premier Quality Ink Re	efills Desktop FAX MODEMS
$ \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c}$		20 £23.50 1-2 Mb (exchange) £6	6 00 f77 55		
$ \begin{array}{c} \label{eq:result} \believe (a. result) \bel$					
		15 104.05 200 CDDAM 600	00 £34.08 T	ri-Colour (C,M.Y) £15.0	00 inc ISDN modem (external) £169.36 £169
		J 221.0J	00 676 38		A THE AND TAY COLLEGE AND INCH CITO STILLES
			00 01 11 00		00 inc
					50 me
NUCE & KEVBOARDS		45 £52.88 with FPA socket	and a construction of the second second		K DX4-100 £233.99 inc VAT
	NEW A540 4Mb ↓ £	with FPA 10 fitted(25Mhz) £165.00 inc		
	MICE & KEYBOARDS			DELLA	
Aussen Gright Monse Case of Ca	Ex. VAT Inc. VAT				
Accorn BigGO Manuel Allow 12:00 FTRACKBALL Image: Allow of the second sec					RRECTION SYNDICATE
$ \begin{array}{c} 1 \\ reginant Baser, Calour and California Calif$	Acorn Replacement Mouse £12.00 £14.10				
129 1			ALL DE MARKET	Salter Co.	Only £27.00
High Quality High Quality Accord PLAN (MARCH 2000) Inc. VAI ARCSHARE Acons networking for PCs. 20.95 cec Vat (23.5) Inc. VAI Inc. VAI Inc. VAI ARCSHARE Acons networking for PCs. 20.95 cec Vat (23.0) Inc. VAI Inc. VAI Inc. VAI Inc. VAI And PCS acons Networking for PCs. 20.95 cec Vat (23.0) Inc. VAI	Ergo (std) RiscPC Keyboard £21.28 £25.00	£29.79 + VAT			
ARCSHARE Acorn networking for rec 29.05 ex Vat (23.0) in Vat senetwork section for Cards ETC Image: Status of Cards Status of Ca		III-LO	of UD		INC VAT
Area networks action for Cards ETC Image: Data and the second			£29.004		Energy and the second second
Pic 22:09 see Vari (25:09 me Vari see network section for Cards ETC. Pic 20:00 exc Vari (22:03) Pic Card Vari (22:03) Pi	ARCSHARE Acorn networking for		RiscOS 3	3.11 upgrades	
CALL Prices below include VAT THEE BARCGAIN BASEMENT Most Items will be at Acorn Show 1007 Disease 1133 Acorn Coll Wate Size 1133 1007 Disease 1133 Acorn Coll Wate Size 1100 1008 Disease 1133 Acorn Coll Wate Size 1100 1008 Disease 1100 Disease Size 1100 1100 1008 Disease 1100 Disease Size 1100 1100 1100 1008 Disease 1100 Disease Size 1100<	PCs £29.95 exc Vat £35.19 inc Vat	mouse	£25.00 ex		CONTRACTOR AND A DESCRIPTION OF A DESCRI
Acorn Software Bin 1000 Dawami CDE Basedin / Multimedia Kide Titles.for.PC PC CD-ROMS Buy 2 get one fr 2000 hyperson 1000 Dawami Fills	see network section for Cards ETC.	£12.00 +			
Acorn Software Bin (000 Dawami 2000 Dawami	and the second s	THE DADCAIN	DACEM	ENT Most	Items will be at A corn Shows
bit Densame ctilize Acom Reply CD (back in Slock) 5500 Body attenue Cluo Badt Cattury Atmase 553 Acom Pocket Book.Scholul 1000 The PDC DL 32 of a 1000 1000 The Acom Pocket Book.Scholul 1000 Budy attenue 1000 Acom Pocket Book.Scholul 1000 The PDC DL 32 of a 1000 1000 The Acom Pocket Book.Scholul 10000 10000 10000 <td>(All Prices below include VAT)</td> <td>I HE DARGAIN</td> <td>DASEN</td> <td>EIVI WOST</td> <td>items will be at Acom Shows</td>	(All Prices below include VAT)	I HE DARGAIN	DASEN	EIVI WOST	items will be at Acom Shows
	Acorn Software Bin	Acorn CD-ROM Software	CD Education / Multi	media/ Kids Titles for PC	PC CD-ROMS Buy 2 get one free
Acom Description FUN SCIOOL your scientisis Cloud Critical Path interative pame) 55 Avern Necke IbookAlink Upgrader 22000 Index warehouse 22000 Index wa	10/10 Dinosaurs £11.75	Acorn Replay CD (back in Stock) £5.00	3D Body adventure	£10.00	20th Century Almanac £5.00
Access robusts: Hosts: Allock. while Upgende 7772 Ling chaines in a proper data of the					Busy Town, triple title£5.00Critical Path (interative game)£5.00
Airs etc. Topic Ar CD Elonom KIDS CAD HYPERBACKGAMMON 55 Am Tech. Labelar 2000 TYTM Electricity and magnetism KIDS CAD HYPERBACKGAMMON 55 Bestig of War 2000 TYTM Electricity and magnetism KIDS MATTIS BY COLOURS HOA Bostig Manager 6300 TYTM Electricity and magnetism KIDS MATTIS BY COLOURS MATOS EARLY YEARS 55 CaburaSpectation Software) BOStig Manager 6300 MATOS EARLY YEARS 55 CaburaSpectation Software) CaburaSpectation Software) TyTM electricity and magnetism 55 Diffe from Pack (Canceroids Spectation) CaburaSpectation Software) CaburaSpectation Software) 55 Diffe from Pack (Caburase) CaburaSpectation Software) CaburaSpectation Software) 55 Diffe from Pack (Materoad) Liboo Diaband Guide Cr Ver 2 2.00 HOME Respectation Software) 55 Diaband Guide Cr Ver 2 2.00 HOME Respectation Software CoburaSpectation Software	Acorn Pocket BookA-link Upgrade ???? £10.00	Hutchinson Encyclopedia £39.00	GLOBAL FRENCH	£10.00	
Betchey Hard Dive Companion ±5.00 VTTM Idenents ±1.50 MATIS IN COURS £1.00 MARTIS IN COURS £1.00 MARTIS IN COURS £5.00 Boking Manager ±5.00 VTTM Idenents £1.500 MARTIS IN COURS £1.00 MARTIS IN COURS £1.0		TopicArt CD £10.00		£10.00	HYPERBACKGAMMON £5.00
Birds of War22.00VTTM inferralsE1.50MR FINE ARTST (1.00) MARIOS EARLY YEARS5.5Bosing Manager5.50Discover Spectraion Software5.50MINERVA AREWARE5.5MINERVA AREWARE5.5Cleardsr (Colours Spectraion Software5.50Dabhand Guide "Baget DTP"4.50MINERVA AREWARE5.5D'He Four Pack (Academa)1000Dabhand Guide "C" ver 25.50Dabhand Guide "C" ver 25.50MINERVA AREWARE5.5D'He Four Pack (Academa)1000Dabhand Guide "C" ver 25.50Dabhand Guide "C" ver 25.50San Digo Son, The Arimana Acoumes User 1000San Digo Son, The Arimana Acoumes User					
$ \begin{array}{c} Construct Section Sect$	Birds of War £20.00	YITM Materials £15.00	MS FINE ARTIST	£10.00	MARIOS EARLY YEARS £5.00
				ree culculator) wrotoo	
D'file four back (Aadeury) Filoson Dahhand Guide 'C' ver 3 £.500 Allas of Great Brain (Collinge Colling) RALROAD TYCCON (Three games) £.550 D'files four back (Commercial Script Filoson Dahhand Guide 'C' ver 2 £.300 NB BASKET BALL £1000 D'files four back (Mastercan) E1000 Dahhand Guide 'C' ver 2 £.300 NB BASKET BALL £1000 D'File four back (Mastercan) E1000 Dahhand Guide ''C' ver 2 £.300 NB BASKET BALL £1000 D'File four back (Mastercan) E1000 Dahhand Guide ''C' ver 2 £.300 NB BASKET BALL £1000 D'File four back (Mastercan) E1000 Dahhand Guide ''C' ver 2 £.500 NG CNENANAN 55 £.500 Deskfadi Teson back (Old rowne 530) £1100 Dahhand Guide ''C' ver 2 £.500 NG CNENANAN 55 £.500 Deskfadi Teson back (Old rowne 530) £1100 Nor to be listed Yarious Hardware bargains £.500 D'file four back (Old rowne 530) £1100 Nor to be listed Yarious Hardware bargains £.500 D'file four back (Coll rowne 530) £100 Nor to be listed Yarious Hardware bargains £.500 D'file four back (Coll ro	ColourSep (Colour Seperation Software) £8.00		Total South and the second second	and the second se	
Drief or the Yack (Gammeria) 10,000 Dabhand Guide "C ver 2 2,000 Holl E GARDNER CD £10,00 SorTKET FNCY CLOPEDIA £5 Drief or the Kak (Teesky le Scrip) 10,000 Dabhand Guide "Impression" £7,500 Holl B GARDNER CD £10,000 SorTKET FNCY CLOPEDIA £5 Drief or the Kak (Teesky le Scrip) 10,000 Dabhand Guide "Impression" £7,500 Holl B GARDNER CD £10,000 SorTKET FNCY CLOPEDIA £5 Drief or the Kak (Mahatan) 10,000 Dabhand Guide "Impression" £7,500 MS GNER CD £10,000 SorTKET FNCY CLOPEDIA £5 Drief or the Kak (Mahatan) £10,000 SorTKET FNAL £10,000 SorTKET FNAL £5 Drief or the Kak (Old Towns 53,600 £10,000 SorTKET FNAL £10,000 SorTKET FN					
DTile font Pack (TreeStyle Script) 21000 Dabhand "Graphics on the ARM £7.50 MS BASEL BALL 11000 DTile font Pack (Manattan) £1000 Dabhand "Graphics on the ARM £7.50 MS BASEL BALL 11000 DTile font Pack (Manattan) £1000 Dabhand "Graphics on the ARM £7.50 MS BOOKSHELF94 48.00 Desktaft £1000 Dabhand "Graphics on the ARM £7.50 MS BOOKSHELF94 48.00 Desktaft £1000 Desktaft £1000 MS BOOKSHELF94 48.00 Desktaft £1000 More to be listed £1000 MS BOOKSHELF94 48.00 Desktoft £1000 More to be listed £1000 MS BOOKSHELF94 40.00 Diarter £200 More to be listed £1000 MS BULZ ASTURES 60.00 £1000 Diarter £200 A100 bases from £10 MS Magic School Bus £15.00 FRAK (or RC C and A7000) NEW £10.00 A1000 bases from £125 £16.625 MS Magic School Bus £15.00 FRAK (or RC C and A7000) NEW £10.00 A3000 bases from £125 £10.00 KIN GREF £10.00				£10.00	
DFile Font Pack (Mantatan) ±1000 Databata (Julice Impression ± 27.50 Windows 50 (Shareware CD) ±55 DFile Font Pack (Master and the form est (Marker and the form est (Marke	D'File Font Pack (FreeStyle Script) £10.00	Dabhand "Graphics on the ARM £7.50		£10.00 f8.00	Travel Companion £5.00
DTHE Font Pack (0d Towne 536) £12.00 Zhi CUSET ACOTIN SOTUWIPE Miss Excentratives £15.00 WorkLD ATLAS V5.0 £5 Desktain £10.00 More to be listed Miss Excentratives £15.00 PC CD-ROMS Buy 2 get one fr DUNE (the game of the film) £10.00 <t< td=""><td></td><td></td><td>MS CINEMANIA 94</td><td>£8.00</td><td></td></t<>			MS CINEMANIA 94	£8.00	
Desktod ± 1000 More to be listed ± 0000 MS ENCARTA 96 OEM ± 1500 Desktop Thesaurus ± 11000 More to be listed ± 0000 MS ENCARTA 96 OEM ± 1000 Diary + ± 5000 More to be listed ± 0000 MS ENCARTA 96 OEM ± 0000 Diary + ± 5000 More to be listedMS ENCARTA 96 OEM ± 0000 Diary + ± 5000 More to be listedMS ENCARTA 96 OEM ± 0000 Diary + ± 5000 ± 3000 hases from ± 1000 MS USIC CENTRAL ± 0000 Easi Word ± 3000 hases from ± 1000 ± 10000 ± 10000 ± 10000 End Pack 1 (2 Disc Set) ± 10000 hases from ± 15000 ± 100000 ± 100000 $\pm 1000000000000000000000000000000000000$	D'File Font Pack (Old Towne 536) £12.00				
DeskTop Thesaarus £14.00 Also Endequoted Also Endequoted PCC CD-ROMS Buy 2 get one ftm Bit Endequoted Diary + £9000 Narious Hardware bargains MS ULIA CHILDS HARE CONKING £1000 File Agement file file file £1000 Diary + £9000 A3000 bases from £158 £99.88 MS ULIA CHILDS HARE CONKING £1000 File Agement file file £1000 File Agement file Agement file File Agement file File Agement file File			MS ENCARTA 96 OE!	M £15.00	DO OD DOMO D
Drifter£3000Various fraroware bargainsMs Mois Schult Les Irack£1000Fil7a FLIGHT SIM/ Phantom of the Open £10.0Easy ford 3£24.00Fil600 bases from£125£146.88£1000Fil7a FLIGHT SIM/ Phantom of the Open £10.0File and ICE£15.00Fil600 bases from£125£146.88£1000£15.00Fil6 G(UK and Ireland)£15.00Ford Pack 1 (2 bits Set)£10.00A4000 bases from£125£146.88£1000£1000Fil6 G(UK and Ireland)£1000Galacic Dan£10.00A6000 bases from£250£2500£15.00MANTIS + Civilisation£10.0Galacic Dan£10.00Fil6 Dass from£126£19.00£15.00Mastis E Civilisation£10.0Galacic Dan£10.00Panasonic PD sesi system int£19.00£19.85Yilfon0 £19.00£15.00Mastis E Civilisation£10.0Giola Effect£25.00Panasonic PD sesi system int£19.00£19.85Yilfon0 £19.00£15.00Filf A FLIGHT S back£10.00Impression Borders Discs 80 Otherse£1000Nouse pads from£0.85£1.00Yilf A FLIGHT S back£10.00My World Support Disc Ancient Egypt£12.00Nouse pads from£0.05£10.00Noe in the dark£10.00Ny World Support Disc Ancient Egypt£12.00NiceRest Mow S filconNiceCCARPET£10.00Ny World Support Disc Ancient Egypt£12.00NiceRest Mow S filconNiceCCARPET£10.00Ny World Support Disc Ancient Egypt£100	DeskTop Thesaurus £14.00		MS JULIA CHILDS H	OME COOKING £10.00	Character and the second secon
Easy Word£8.00A3010 bases from£100£117.50RUTE 66 (UK and Ireland)£15.00FIAA SUC.ER£10.00FIRE and ICE£15.00A3020 bases from£125£14.688£10.00FIAE Advolo bases from£250£29.075Font Pack 1 (2 Dis Set)£10.00FIAE Advolo bases from£250£29.075Nelson and his Navy£15.00MANTIS + Civilisation£10.0FAK (for RPC and A7000) NEW£14.00Monitors VariousPOAPOAPOANoPOAGalacti Dan£10.00Monitors VariousPOAPOACD General Resource TitlesEx. VAT Inc. VATMANTIS + Civilisation£10.0Galacti Dan£10.00Monitors VariousPOAPOACD General Resource TitlesEx. VAT Inc. VATNds GoLF£10.00Galacti Dan£10.00Bassonic PD ssis system ext £169.00£199.00£13.83Pioneer SCI 4x 6x stack ext £169.00£198.58CD General Resource TitlesEx. VAT Inc. VATGuide Effect£10.00HERO QUEST£10.00GodementsSyquest 1.51 of Pil por PC only £169.00£198.58£20.00Alternative PC Bases PentiImpression Borders Discs 80 Old Eg.J£10.00Start LC10/20/100 colour ribbon £5.00Mose padels for CD ROM (inc.vat)COREL ARTSHOW 5£20.00Alternative PC Bases PentiMy World Support Disc Ancient Egypt£13.00Incentext Web Analyser£10.00Macle CARPET£10.00BY MAIL or PHONE: Cheques or P.O.s should be mached with Stores £20.00Nucides II and Elements II£20.0	Drifter £30.00			£15.00	F117A FLIGHT SIM/ Phantom of the Opera £10.00
FIRE and ICE£15.00A3020 bases from£125£146.88£146.88£10.00£10.00£10.00Font Pack 1 (2 Disc Set)£10.00A3000 bases from£250£293.75£10.00Imagina Multimedia Reduced to clearLord of the Rings i£10.00FRAK (for RPC and A7000) NEW£10.00RPC bases from£468£549.90Nesson and his Navy£15.00MANTIS + Crillisation£10.00Galactic Dan£10.00f10.00POAPOAPOAPOAPOAPoasonic PD seis system int£19.00£163.03Understanding the Body£15.00MANTIS + Crillisation£10.00Galactic Dan£10.00f15.00Finer SCI 4x 6x stack et£109.00£198.58CD General Resource TitlesEx. VAT Inc. VATManTIS + Crillisation£10.00Guide£10.00f15.00f16.00£198.58£10.00f10.00f198.58£10.00f10.00f198.58f10.00Impression Borders Discs 80 Chinese£10.00f16.00f10.00f10.00f10.00f10.00f10.00f10.00f10.00f10.00My World Support Disc Ancient Egypt£12.00Incontext Web Analyser£10.00f10.00 <td< td=""><td></td><td>A3010 bases from £100 £117.50*</td><td>ROUTE 66 (UK and I</td><td>Ireland) £15.00</td><td></td></td<>		A3010 bases from £100 £117.50*	ROUTE 66 (UK and I	Ireland) £15.00	
Prom Pack 1(2 Disc Sel) 21000 Font Pack 2 (2 Disc Sel) 21000 Font Pack 2 (2 Disc Sel) 21000 Font Pack 2 (2 Disc Sel) 21000 Galactic Dan £1000 Galactic Dan £1000 Game ON (for RPC) £1500 Guide £1000 Panasonic PD sesi system int £139.00 £163.33 Panasonic PD sesi system ext £199.00 £198.58 Syquest 1.5G PII port PC only £169.00 £198.58 Syquest 1.5G PII port PC only £169.00 £198.58 Impression Borders Discs 80 Chinese £1000 Impression Borders Discs 80 Chinese £1000 £1000 Impression Borders Discs 80 Chinese £1000 £1000 Mouse pads from £2500 My World Support Disc Ancient Egypt £1200 MicroGrame S £1300 Muclides Hit M2 Ext Ext Desc Stores £1000 MicroBrack M2 Support Disc Ancient Egypt £1200 Microot Support Disc Ancient Egypt £1300 <td>FIRE and ICE £15.00</td> <td></td> <td></td> <td>.D £10.00</td> <td>KINGS QUEST VII CD £10.00</td>	FIRE and ICE £15.00			.D £10.00	KINGS QUEST VII CD £10.00
FRAK (for RPC and A7000) NEW£14.00RPC bases from£16.00Romans£11.00MS GOLF£10.00Galactic Dan£10.00F00.00£15.00Monitors VariousPOARomans£10.00Galac DA£15.00£15.00£15.00£16.00£16.00£16.00£16.00£16.00Global Effect£25.00£10.00£16.00£19.00£18.58£0.00£198.58£0.00£198.58£0.00£198.58£0.00£10.00£10.00£10.00£10.00£10.00£10.00£10.00£10.00£10.00£10.00£10.00£10.00£0.00£10.00£0.00£10.00£10.00£10.00£10.00£0.00£10.00£0.00£0.00£0.00£0.00£10.00£0.0		A5000 bases from £250 £293.75*		£15.00	MANTIS + Civilisation £10.00
Onlance Date210.00210.00210.00210.00210.00210.00Game ON (for RPC)£10.00£15.00Panasonic PD sesi system int£139.00 £163.33Files Control (198.58)Files Control (198.58)Files Control (198.58)Guile£10.00£10.00Files Control (198.58)Files Control (198.58)Files Control (198.58)Files Control (198.58)Files Control (198.58)Impression Borders Discs 80 Chines£10.00Files Control (198.58)Files Control (198.58)Files Control (198.58)Files Control (198.58)My World Support Disc Ancient Eyrt£10.00Files Control (198.58)Files Control (198.58)Files Control (198.58)Files Control (198.58)My World Support Disc Ancient Eyrt£10.00Files Control (198.58)Files Control (198.58)Files Control (198.58)Files Control (198.58)Mucled Support Disc Ancient Eyrt£10.00Files Control (198.58)Files Control (198.58)Files Control (198.58)Files Control (198.58)My World Support Disc Ancient Eyrt£10.00Files Control (198.58)Files Control (198.58)Files Control (198.58)Files Control (198.58)My World Support Disc Ancient Eyrt£10.00Files Control (198.58)Files Control (198.58)Files Control (198.58)Files Control (198.58)My World Support Disc Ancient Eyrt£10.00Files Control (198.58)Files Control (198.58)Files Control (198.58)Files Control (198.58)My World Support Disc Ancient Eyrt£10.00Files Control (198.58)Files Control (198.58)Files Control (198.58)<	FRAK (for RPC and A7000) NEW £14.00		Romans	£15.00	MS GOLF £10.00
Goide File£2500Pioneer SCSI 4x 6x stack ext £169.00 £198.58£169.00 £198.585000 @lip Art (WMF)£20.00UNDERSE A ADV/ SPEED/ SPACE£10.00HERO QUEST£15.00Doddments50.00 @lip Art (WMF)£20.00Alternative PC Bases PentieImpression Borders Discs 80 Chinese£10.00£0.00CRE Lol 20/20/100 colour ribbon £5.00Alone in the dark£10.00Alone in the dark£10.00Jahangir Khan Squash£8.00Mouse pads from£0.85 £1.00Alone in the dark£10.00Alone in the dark£10.00My World Support Disc Ancient Egypt£12.00PC Utilities & Languages (on CD ROM (inc vat) Incontext Web Spider£10.00EA COMPILATION CD (10 GAMES)£10.00HOW TO ORDEROuest for GOLD£8.00PC Utilities & Languages (on CD ROM (inc vat) Incontext Web Spider£10.00LITTLE BIG ADVENTURE£10.00HOW TO ORDERSiter Write£6.00MICROGRAFIX DESIGNER£25.00MICROGRAFIX DESIGNER£25.00LITTLE BIG ADVENTURE£10.00Siter Write£6.00MS WORKS V2.0 (Win 3.1 or 95)£10.00MS GOLF V2£10.00BY EMAIL: sales@cta.u-net.comSiter Write£9.00Photo Album maker£10.00MS HIVE£10.00SHIVE£10.00Siter Write£9.00Photo Album maker£10.00MS CAR RACING£10.00Carriage charges inc. ins. & packaging charged at Carriage charges inc. ins. & packaging charge	Game ON (for RPC) £15.00	Panasonic PD scsi system int £139.00 £163.33	and the second	and the second	SIM CITY £10.00
HERO QUEST£15.00Syquest 1.5G pll port PC only£169.00£198.5875.000 Clip Art (WMP) & images£25.00Alternative PC Bases PentiImpression Borders Dises 80 Old Engl.£10.00Jahangir Khan Squash£8.00KV (Platform Game)£8.00My World Support Dise Ancient Egypt£1.000My World Support Dise Ancient Greece£13.00Incontext Web Spider£10.00Outlides II and Elements II£25.00Outlides II and Elements II£25.00Start Write£8.00SitverBall£10.00Start Write£8.00Start Write£8.00Start Write£8.00Start Write£8.00Start Write£8.00Start Write£8.00World Support Disc Ancient Greece£10.00MicroGordaft X DESIGNER£25.00MicroGordaft X DESIGNER£10.00Start Write£8.00Start Write£8.00Start Write£8.00Start Write£9.00Start Write£9.00Start Write£9.00Start Write£9.00Start Write£9.00Start Write£9.00Start Write£9.00St		Pioneer SCSI 4x 6x stack ext £169.00 £198.58			
Impression Borders Discs 80 Chinese£10.00Mouse pads from £0.85£0.85£1.00from ONLY £249.00 + ring for latest prices.Impression Borders Discs 80 Old Engl.£0.00£0.85£1.00Impression Borders Discs 80 Old Engl.£0.00from ONLY £249.00 + ring for latest prices.My world Support Disc Ancient Egypt£12.00FC Utilities & Languages (on CD ROM (ine vat) Incontext Web AnalyserPC Utilities & Languages (on CD ROM (ine vat) Incontext Web AnalyserAlone in the dark£10.00Nuclides II and Elements II£25.00LOTUS SMARTSUTTE 97 FOR WIN 95£25.00LOTUS SMARTSUTTE 97 FOR WIN 95£25.00Nuclides II and Elements II£20.00LOTUS SMARTSUTTE 97 FOR WIN 95£25.00LITTLE BIG ADVENTURE£10.00Siter Write£8.00MS WORKS V2.0 (Win 3.1 or 95)£10.00MGIC CARPET£10.00Siter Write£8.00Photo Album maker£10.00MS GOLF V2£10.00Swiv (Budget Title)£9.00Photo Album maker£10.00MS HIVE£10.00Swiv (Budget Title)£9.00Photo Calendar maker£10.00MS HIVE£10.00World Class Leaderboard (GOLF)£18.00PC CD Business Titles£15.00RAC Rally£10.00Swir (Budget Title)£18.00PC CD Business Titles£10.00RAC Rally£10.00Swir (Budget Title)£18.00PC CD Business Titles£10.00RAC Rally£10.00Swir (Budget Title)£18.00PC CD Business Titles£12.00	HERO QUEST £15.00		75,000 Clip Art (WMF) & images £25.00	
Impression Borders Discs 80 Old Engl.£10.00Mouse paus irroin£0.05 \$1.00Alone in the dark£10.00ring for latest prices.Jahangir Khan Squash£8.00KV (Platform Game)£8.00My World Support Disc Ancient Egypt£12.00My World Support Disc Ancient Greece£13.00Incontext Web Spider£10.00Lortus SMARTSUITE 97 FOR WIN 95£25.00Nuclides II and Elements II£25.00Nuclides II and Elements II£20.00Start Write£20.00Start Write£20.00Start Write£8.00Start Write£0.00Start Write£0.00Start Write£0.00Start Write£0.00Start Write£0.00Start Write£0.00Start Write£0.00Start Write£0.00Start Write£0.00Start Write£0.00World Class Leaderboard (GOLF)£10.00World Class Leaderboard (GOLF)£10.00World Class Leaderboard (GOLF)£10.00King De Class Leaderboard (GOLF)£10.00Kord Class Leaderboard (GOLF)£10.00			COREL ARTSHOW 5	£29.00	
Maining Hain squash 15.00 1000 m Game) 15.00 1000 m Game) 1000 m Game) KV (Platform Game) £3.00 PC Utilities & Languages (on CD ROM (inc val) Angel Devoid (4 cd MEGA game) £15.00 HOW TO ORDER My World Support Disc Ancient Egypt £12.00 Incontext Web Analyser £10.00 FD Cutilities & Languages (on CD ROM (inc val) Angel Devoid (4 cd MEGA game) £15.00 HOW TO ORDER Nuclides II and Elements II £25.00 Incontext Web Spider £10.00 HERETIC (shadow of the serpent riders) £10.00 BY MAIL or PHONE: Cheques or P.O.s should be Quest for GOLD £8.00 Incontext Web Spider £10.00 LITTLE BIG ADVENTURE £10.00 BY MAIL or PHONE: Cheques or P.O.s should be Siter Write £8.00 MS WORKS V2.0 (Win 3.1 or 95) £10.00 MAGIC CARPET £10.00 BY EMAIL: sales@ctau-net.com Start Write £9.00 Photo Album maker £10.00 MS WORKS V2.0 £25.00 MS WORKS V2.0 £10.00 GFICIAL ORDERS by MAIL or FAX Swiv (Budget Title) £9.00 Photo Album maker £10.00 MS HIVE £10.00 GFICIAL ORDERS by MAIL or FAX Swiv (Budget Title) £18.00 <t< td=""><td>Impression Borders Discs 80 Old Engl. £10.00</td><td></td><td>Alone in the dark</td><td>£10.00</td><td></td></t<>	Impression Borders Discs 80 Old Engl. £10.00		Alone in the dark	£10.00	
My World Support Disc Ancient Egypt£12.00Incontext Web Analyser£10.00BY MAIL or PHONE: Cheques or P.O.s should be made payable to 'CTA DIRECT'.My World Support Disc Ancient Greece£13.00Incontext Web Analyser£10.00BY MAIL or PHONE: Cheques or P.O.s should be made payable to 'CTA DIRECT'.Quest for GOLD£8.00LOTUS SMARTSUTE 97 FOR WIN 95£25.00LITTLE BIG ADVENTURE£10.00BY MAIL or PHONE: Cheques or P.O.s should be made payable to 'CTA DIRECT'.Quest for GOLD£8.00MICROGRAFIX DESIGNER£25.00LITTLE BIG ADVENTURE£10.00BY MAIL or PHONE: Cheques or P.O.s should be made payable to 'CTA DIRECT'.SilverBall£10.00MS WORKS V2.00£25.00LITTLE BIG ADVENTURE£10.00BY EMAIL: sales@cta.u.vspiry date, issue no. if an MAGIC CARPETStart Write£8.00MS WORKS V4.0£25.00MS GOLF V2£15.00OFFICIAL ORDERS by MAIL or FAX StrongGuardPhoto Album maker£10.00MS HIVE£10.00OFFICIAL ORDERS by MAIL or FAX Small items (under 2Kg)no more than £6 + V Visual Backup£18.00FURBO CAD£15.00FREELASSAULT (Star Wars)£10.00One box of items totalling upto 25kg	KV (Platform Game) £8.00	PC Utilities & Languages (on CD ROM (inc vat)	Angel Devoid (4 cd ME	EGA game) £15.00	HOWMOORDER
Nuclides II and Elements II£25.00Incontext Web Spider£10.00HEREFIC (shadow of the serpent riders)£10.00made payable to 'CTA DIRECT'.Quest for GOLD£8.00LOTUS SMARTSUITE 97 FOR WIN 95£25.00LITTLE BIG ADVENTURE£10.00CREDIT CARD / SWITCH please give name,Revelation 2£9.00MICROGRAFIX DESIGNER£25.00LOOM£10.00Revelation 2£10.00SilverBall£10.00MS WORKS V2.0 (Win 3.1 or 95)£10.00MAGIC CARPET£10.00BY EMAIL: sales@cta.u-net.comStart Write£8.00MS WORKS V4.0£25.00MS GOLF V2£15.00OFFICIAL ORDERS by MAIL or FAXStrongGuard£25.00Photo Album maker£10.00NASCAR RACING£10.00VASCAR racingCarriage charges inc. ins. & packaging charged at CSSwiv (Budget Title)£9.00TURBO CAD£15.00NASCAR RACING£10.00Small items (under 2Kg)no more than £6 + VWorld Class Leaderboard (GOLF)£10.00FC CD Business TiltlesREBEL ASSAULT (Star Wars)£10.00One box of items totalling upto 25kg£6 + V		Incontext Web Analyser £10.00	EA COMPILATION CI	D (10 GAMES) £10.00	BY MAIL or PHONE: Cheques or P.O.s should be
Cluster for GDD Eastrop MICROGRAFIX DESIGNER £25.00 LOOM £10.00 address, tel, no, carl no, expiry date, issue no, if ar SilverBall £10.00 MS WORKS V2.0 (Win 3.1 or 95) £10.00 MAGIC CARPET £10.00 BY EMAIL: sales@cta.u-net.com Start Write £8.00 MS WORKS V4.0 £25.00 MS GOLF V2 £15.00 OFFICIAL ORDERS by MAIL or FAX StorngGuard £25.00 Photo Album maker £10.00 MS HIVE £10.00 OFFICIAL ORDERS by MAIL or FAX Visual Backup £18.00 TURBO CAD £15.00 NASCAR RACING £10.00 Small items (under 2Kg)no more than £6 + v World Class Leaderboard (GOLF) £10.00 PC CD Business Tilles REBEL ASSAULT (Star Wars) £10.00 One box of items totalling upto 25kg£6 + 12.01	Nuclides II and Elements II £25.00				
SilverBall £10.00 MS WORKS V2.0 (Win 3.1 or 95) £10.00 MAGIC CARPET £10.00 BY EMAIL: sales@cta.u-net.com Start Write £8.00 MS WORKS V4.0 £25.00 MS GOLF V2 £15.00 OFFICIAL ORDERS by MAIL or FAX StrongGuard £25.00 Photo Album maker £10.00 NS KOR RACING £10.00 OFFICIAL ORDERS by MAIL or FAX Swiv (Budget Title) £9.00 Photo Calendar maker £10.00 NASCAR RACING £10.00 Carriage charges inc. ins. & packaging charged at cc Visual Backup £18.00 TURBO CAD £15.00 Photo Album maker £10.00 Small items (under 2Kg)no more than £6 + V World Class Leaderboard (GOLF) £10.00 PCCD Business Titles REBEL ASSAULT (Star Wars) £10.00 Converter systems £12.40	Revelation 2 £29.00	MICROGRAFIX DESIGNER £25.00	LOOM	£10.00	address, tel. no, card no, expiry date, issue no. if any.
StrongGuard £25.00 Photo Album maker £10.00 OFFICIAL ORDERS by MAIL or FAX Swiv (Budget Title) £9.00 Photo Calendar maker £10.00 Carriage charges inc. ins. & packaging charged at comparison on one than £6 + v Visual Backup £18.00 PC CD Business Tilles F10.00 £10.00 Carriage charges inc. ins. & packaging charged at comparison on one than £6 + v World Class Leaderboard (GOLF) £10.00 PC CD Business Tilles REBEL ASSAULT (Star Wars) £10.00 Compare systems £12.00	SilverBall £10.00	MS WORKS V4.0 £25.00			
Swiv (Budget Title) 19:00 TURBO CAD 11:00 NASCAR KalloG 10:00 Small items (under 2Kg)no more than £6 + y Visual Backup £18:00 TURBO CAD £15:00 RAC Rally £12:00 Small items (under 2Kg)no more than £6 + y World Class Leaderboard (GOLF) £10:00 PC CD Business Tiltles REBEL ASSAULT (Star Wars) £10:00 Computer systems £12:4	StrongGuard £25.00	Photo Album maker £10.00	MS HIVE	£10.00	
World Class Leaderboard (GOLF) £10.00 PC CD Business Tillles REBEL ASSAULT (Star Wars) £10.00 One box of terms totalling upto 25kg		TURBO CAD £15.00			Small items (under 2Kg)no more than £6 + vat
Zast (as IID) COPEL DRAW VAO CD COMPACE SYSTEMS	World Class Leaderboard (GOLF) £10.00		REBEL ASSAULT (Sta	ar Wars) £10.00	One box of items totalling upto 25kg£6 + vat Computer systems£12 + vat
Zool (on HD) £10.00 COREL DRAW V4.0 CD £20.00 SLIPST REAM 5000 £10.00 All prices are correct going to press. E&OE DATA CAD V5.0 £20.00 £20.00 STELLAR 7 CD £10.00 All prices are correct going to press. E&OE	2001 (0n HD) £10.00		STELLAR 7 CD	£10.00	
Professor WINDOWS 95 (TUTOR) £10.00 THEME Hospital £15.00 An goods are guaranteed but not supplied on appro-		Professor WINDOWS 95 (TUTOR) £10.00	THEME Hospital	£15.00	an goods are guaranteed out not supplied on approval



Phoenix burns after Acorn snub

Phoenix, the unofficial name for the organised effort to create a new company out of the ashes of the recently closed Acorn Workstations division, has suffered a comprehensive clipping of its wings. For anyone hoping that Risc PC 2 or 'Phoebe' would become a product for actual sale sooner rather than later - even, some might add, ever – the news is a devastating blow. Negotiations with Acorn were apparently proceeding smoothly, with some optimism that Phoebe could be on sale by Christmas, but Acorn abruptly terminated the dialogue and appointed the new Castle Technology company, CTL, as official Acorn distributor instead.

The Phoenix aim was to acquire from Acorn all the rights to RISC OS, the current desktop products range, including NCs, plus various

associated technologies and, last but not 'least, Phoebe. These were the primary assets Acorn had apparently decided were no longer of any worth when it announced the closure of the Acorn Workstations division in mid-September. Acorn's official statement back then even suggested that attempts to find a buyer for the division had failed, though we have yet to see any evidence that Acorn actually did try to sell the division bar a tentative approach from Eidos' founder, Stephen Streater.

The Phoenix members are mainly independent dealers and developers, with major companies represented including CJE Micros, Aleph One, Cumana, Si-Plan and many others, including

Tau Press who publish *Acorn User*. As reported last month, the Phoenix group formed a steering committee and each company donated a fee of £500 each to fund an organised business like initiative to secure financing, draw up a business plan and approach Acorn with the goal of buying the products business Acorn was apparently winding up in any case. Peter Bondar, the familiar ex-Acorn director who was responsible for leading the creation of the original Risc PC as well as Phoebe, had already posed some suggestions and was elected as the group's main executive.

Through some venture capital contacts in the Netherlands, Bondar quickly found

a Dutch organisation which specialised in bailing out under-performing high-tech companies and knocking them back into shape. The same organisation is credited with the recent rescue and restructuring of Tulip Computers, a major PC manufacturer in the Netherlands. Tulip's management was introduced to the plan, they showed positive interest and, to cut a long story short, we are told that Acorn's chief executive, Stan Boland and Peter Bondar agreed to formalise the proceedings through a jointly signed Memorandum of Understanding (MOU) whose aim was to provide an exclusive framework for the Phoenix delegation to prepare and present its proposals to Acorn within an agreed time period.

That agreement was signed on the afternoon of Tuesday October 6th. A few

days earlier, a draft of the MOU had been mistakenly published on Acorn Cybervillage Web site, but according to our sources, Acorn's Andy Mee reassured the Phoenix committee that this had not affected the negotiations in any way. The following Friday, Tulip personnel arrived in Cambridge to meet management Acorn's and to become better acquainted with who they were dealing with. We are told that the meeting was very positive and the Tulip party was given some kit to take home and play with.

A Phoenix meeting had already been planned for the next day, Saturday October 10th and Peter Bondar reported to all present

that things were going extremely well. Unfortunately, this coincided with news from Jack Lillingston that he had, at last, got his distribution deal signed and sealed. Not only that, but Lillingston collected his contract barely hours after the Tulip people had gone home. To put it mildly, there was consternation at the meeting – in the blink of an eye, Acorn had effectively torn up the MOU – but why? That's the \$64,000 cliché question.

Part of the answer may lie in what happened next, although as nobody seems to agree what really happened, we can only speculate. By Monday, Tulip apparently told the Phoenix committee that they had received a fax from Acorn inviting them to negotiate a separate deal, excluding Peter Bondar and Phoenix. It was only on the Tuesday that Acorn informed Laurie van Someren, a senior Phoenix committee member, that the MOU agreement was officially dead. Acorn have since denied that they sent the said fax to Tulip, so we can't actually be sure what really happened. Nevertheless, the Phoenix members were, quite rightly angered and saddened by what had happened.

As we go to press nearly four weeks later, the news is that further discussions with Tulip and Acorn have indeed taken place, but there hasn't been any obvious progress in the negotiations and in any case, the focus has moved away from traditional desktop computers and more onto NCs and other thin client technologies. The door remains ajar for Acorn to perform another U-turn, but realistically, there is practically no chance of the original Phoenix proposal being entertained. The flight of the Phoenix was a short and bumpy one, alas.

There are other potential reasons why Phoenix failed. One obvious explanation could have been that Acorn feared losing key engineering staff to the new proposed company, even though the MOU specifically forbade staff poaching. It's perfectly reasonably to speculate that some staff would have transferred of their own accord. Another more controversial reason put forward is that there was fatal conflict of character between Stan Boland and Peter Bondar, whom he effectively caused to leave Acorn back in June, along with Acorn president, David Lee, and other key management staff.

What's not so easy to explain is how Acorn turned away from a deal which could have netted them in excess of £2 million up front in a short time-frame and instead opted for a conventional and less profitable distribution deal with Jack Lillingston. Around the time of all this controversy, Acorn was disposing of further quantities of its ARM shares, so the immediate need for cash was no longer paramount, despite rumours of a seven-figure Acorn creditor being on the verge of bankruptcy.

Now that Lillingston has been handed the reins, we hope he can achieve at least some of the goals of the Phoenix initiative. The early signs are reasonably positive, but the universal factor remains Acorn. Lillingston says he has guarantees that Acorn will manufacture computers as long as he can take them off their hands. There are technical reasons why honouring such a promise will get more and more difficult over time. In the end, of course, time will tell.



Castle Technology picks up the pieces

In the wake of the failure of the Phoenix group to succeed in its plan to re-incarnate the axed Acorn Workstations division as a new, independent, company, it has emerged that Castle Technology's Jack Lillingston formed a new company, Castle Technology Limited, or CTL for short, and this has been appointed by Acorn as official dealer distributor for Acorn desktop computing products, including Risc PCs, A7000+ models and NCs.

Lillingston revealed that he approached Acorn with regard to taking on the distribution responsibilities very soon after the shock announcement that Acorn was closing the Workstations division. It's not surprising, then, that Lillingston chose not to join the Phoenix group - members of which each had to stump up £500 towards a fund to pay former Acorn director, Peter Bondar, to head the Phoenix bid. The story of the Phoenix initiative is told in a separate article here, but it has to be said that many of those close to Phoenix saw Lillingston's negotiations with Acorn as an un-wanted distraction. After all, if he secured his bid, Phoenix would almost certainly be critically compromised and vice-versa.

To make matters more complicated, early indications from Lillingston were that there was practically no room for Phoebe in his plans. That tune has more recently changed, though Lillingston refuses to be drawn into any detail or, indeed, any commitment regarding any plans he might have for Phoebe. Instead, Lillingston says he has seen Phoebe in 'all its glory' and he's very impressed with it, but his policy is not to pre-announce anything until it's commercially ready.

Lillingston concedes that there are those in the dealer and developer community who need reassuring about his motives and plans. An intensive campaign of telephone calls around the country to reassure key people has been largely successful, says Lillingston and now that more details of the CTL set up have been revealed, it can be seen that some concerns have proved to be unfounded.

For example, CTL has been set up along the strict interpretation of the trade/channel distribution model, which means CTL will not sell to end-users in the UK. Indeed, the original Castle Technology business which specialises in peripherals but also sold computers, will now no longer sell the latter once a recent sales campaign has expired. This point should be very reassuring to dealers as some previous third-party distributors appointed by Acorn did choose to run a retail operation alongside their distribution responsibilities.

This, says Lillingston, is a sign of further positive things to come. Lillingston says he wants to succeed where Acorn's old distribution policies had gone wrong. Marketing will also be a top priority – Lillingston says he will do his best to correct the ignorance in the general computer market of the inherent advantages of the Acorn platform, like low cost of ownership and a long usable life as well as the attractions of ARM technology and RISC OS.

The Xemplar factor can't be ignored and although Xemplar readily admit that Acorn sales to schools via their agency network of dealers have fallen sharply, they reiterated to us that they will not be pulling out of the Acorn market, despite a sales announcement on the Xemplar Web site implying that they were quitting. Lillingston believes that CTL can do better than Xemplar at getting Acorn computers into schools because CTL doesn't have the distraction of having to sell Apples and PCs, plus the independent dealers CTL now serves have greater freedom than Xemplar agencies to pitch for new business.

So what of the future? Dealers continue to prove that there is a solid, if receding, market for Acorn computers, but for Lillingston to be able to sustain his new business in the long term, where will he get new products and other developments from? Although he won't be drawn on this subject, there is speculation that he has been given a guarantee from Acorn itself to deliver certain developments and highest on the list is probably RISC OS 4, originally intended just for Phoebe, for upgrading A7000s and Risc PCs.

Acorn industry figures we have spoken to remain unconvinced that Acorn itself will, in the fullness of time, actually deliver the support and commitment that Lillingston says he has negotiated with Acorn. One source pointed out that further production runs of A7000s, for example, could be hampered by the lack of a key component. Lillingston points out that Acorn has just completed a new batch of A7000s and knows of no component supply problem. What the real truth is, probably only a few really know the answer.

Of primary importance by far for Lillingston and CTL is to get the Acorn market moving again. Since Acorn's closure announcement, confidence among even the most loyal of Acorn customers has been hit hard. The failure of the Phoenix initiative simply made things worse. Naturally, for the sake of Acorn dealers, developers and fans everywhere, we hope CTL proves to be very successful.



Xemplar's 'Last chance' mistake

A sales promotion announcement on Xemplar's Web site in the first week of November prompted many to think that Xemplar was officially getting out of the Acorn market, but it later transpired the wording of the announcement, which included the phrase to the effect that it was the 'last chance' to secure guaranteed supplies of Acorn products from Xemplar, was simply a reminder to customers that future supplies of computers from Acorn weren't guaranteed.

news

Head of marketing at Xemplar, Nick Evans, admitted that the wording, which he had coined, was inappropriate and it was quickly removed once alarmed queries started to come in. Xemplar boss, Brendan O'Sullivan had only a month earlier

emphatically denied rumours that Xemplar was quitting the Acorn market. Evans reminded us that Acorn's stated policy is to concentrate on activities other than desktop computers,

Year 2000 video

Tau Press' sister company Powertrack has become sole UK distributor for a new video on the potential social effects of the Millennium Bug. Steve Turnbull, Managing Director of Tau Press, stated "Acorn users can be *millennium-smug* about the ability of RISC OS machines to pass through the date change without even a twitch – but thinking the bug will have no effect on their lives is, unfortunately, naive.

"Even if all important PCs and mainframes are fixed in time – fairly unlikely in itself – there are millions of embedded processors that cannot be reached or replaced and their failure could wreak havoc on society's infrastructure.

"Our video explains the problem clearly, describes the potential effects and what people can do about it on a personal basis. We believe it's crucial that everyone sees this video so that they understand exactly what is going on."

See page 14 to order the video directly from Tau Press, or the subscriptions page to get the video as a special offer at a discounted price.



It seems that no guarantees to Xemplar have been made regarding supplies of other Acorn desktop products. Evans added that they would do their best to obtain alternative sources of Acorn product, once their existing stock in the warehouse had run down. Did this include talking to Jack Lillingston's new CTL distributions company, which is now Acorn's official independent distributor? If necessary, yes, said Evans, though both he and Lillingston admitted

that neither party had yet discussed this possibility to date. Xemplar also added that Acorn products

possibility to date. Xemplar also added that Acorn products would definitely be featured in the 1999 Tesco Computers for Schools catalogue.



Sony 200Mb floppy ships

Here's another job for parallel port RISC OS device drive whiz kids – Sony has at last started to ship the first HiFD 200Mb 'floppy disc' drive and at the same time Fuji has started shipping HiFD media. Like the already established 120Mb LS120 Superdisk which was pioneered by 3M/Imation, here we have a 3.5 inch form factor drive which can read and write ordinary 3.5 inch floppy discs as well as their own proprietary super high capacity discs.

The two big differences are that the Sony HiFD offering can read and write data much faster and it has a 200Mb capacity – a third more than the LS120. In fact the HiFD acts more like a slow



hard disc than a fast floppy disc and as its sustained read capability is 600K per second, it can easily stream MPEG1 video from a HiFD disc. Fuji says the discs will sell for around a tenner each, which is about the same price as LS120 media, but



Sony expect the drive to retail for around £149 inc. VAT, which is about £25 more than the equivalent LS120 drive parallel port drive. An IDE internal version will soon follow. Sony Computer Peripherals and Components: tel: 01932 816660.

Great news from Icon Technology

Show prices - even though the show was cancelled



EasiWriter professional

- Powerful, fully featured, multi-column word processor.
- Reads and Write MS Word 6, 7 & 8 (Office 97/97).
- Reads and writes HTML.
- Reads RTF (Rich Text Format).
- Creates Hypertext documents.
- Built in Table Editor.
- Automatic bulleted and numbered lists.
- · Mail merge.
- Automatic numbering of Lists, Sections etc.
- Pamphlet printing.

TechWriter professional

"Its great! At the risk of writing advertising copy for Icon Technology. no piece of software on any platform has made me grin with delight as I discover new features as much as TechWriter has." Archive

- All the features of EasiWriter professional plus a powerful easy to use equation editor.
- Writes TeX.
- Saves equations as GIF's (using InterGif) when writing HTML.
- Used by the Mathematical Association to produce the Mathematical Gazette.





Upgrade your StartWrite to EasiWriter professional for just £50.00 plus P&P and VAT.

Offer prices

Product	Normal price	Offer price	Including VAT and P&P
EasiWriter professional	£129.00	£96.00	£116.32
TechWriter professional	£199.00	£149.00	£178.59
Upgrades (includes new docur	nentation)		
EasiWriter to EasiWriter profession	nal	£40.00	£50.53
EasiWriter professional to TechWi	riter professional	£50.00	£62.27
TechWriter to TechWriter professi	onal	£50.00	£62.27
StartWrite to EasiWriter profession		\$50.00	£62.27
	students - check ou	ir Web site or rit	ng for details.

check our web site or



Icon Technology Limited Church House • Carlby • Stamford • Lincs • PE9 4NB Phone and Fax 01778 590563 http://www.iconsupport.demon.co.uk email: auoffer@iconsupport.demon.co.uk





2100 font CD from iSV

Pro-

() ()

Ġ

Originally scheduled for launch at the doomed Acorn World show, iSV Products has released *Professional Typography Expert 2100.*

The name might be a bit of a mouthful, but you certainly seem to get lots on the CD – over 2,100 high quality fonts, hinted with iSV's own NDT (no dropout technology) hinting system. Utilities supplied include a font cataloguer, Font Designers Toolkit and FontTrixPRO.

You also get PostScript name matching. The CD is priced £30 plus carriage, or £15 plus carriage for current users of Typography Vol.1. For more information, contact iSV on tel: 01344 455769 or check out their Web site at http://members.aol.com/isvproduct/

RILS BridgePr

PSION

10 34

20

Enter bid

Cancel

Pass

Hint

ок

--

"" Hat

扔

Purple Bridge

Purple Software has announced *Bridge* for the Psion Series 5 hand held computer. Purple chairman, Julian Swallow, commented: "This new title carries all the other 'top of the line' attributes you have come to expect from Purple Software products." In other words, it's fast, has a very intuitive user interface and some neat graphics. The price is £49.95 inc. VAT. Purple: tel: 0171 387 7777, Web: http://www.purplesoft.com



Bridge is a powerful application for the Psion Series 5 and compatibles that is suitable for beginners and expert players alike.

- Superb graphical display of hands.
- A choice of board layouts, backgrounds and card backs.
- Animated moves with a choice of animation speeds.
- Incorporates a fast and powerful Bridge engine.
- Uses a natural bidding system incorporating many standard and optional conventions.
- Includes a forty-page manual on the art of bidding in electronic form.
- Search for selected contracts such as "Slams" or "Games" or create custom hands.
- Play against the computer or take control of any of the players.
- Hints available for all bids and card play.
- Take back and replay individual tricks or review the whole hand in replay mode.

- A fully annotated score card for each rubber and cumulative ledger score.
- Save and load scores and current game position.

Languages: GB Compatibility: Psion Series 5 and compatibles RRP inc. VAT: £49.95

For more information please contact Gunnar LarsÈn: Purple Software Limited PO Box 7535 London NW1 2WF England Telephone: +44 (0)171 387 7777 extension 202 Fax: +44 (0)171 387 1188 e-mail: gunnar.larsen@purplesoft.com web: www.purplesoft.com

Psion Series 5s at school

Xemplar is yet to be persuaded that the Psion Series 5, the ARM-powered successor to the Psion Series 3 family, which includes the Acorn Pocket Book, is suitable for classroom use, but an experiment involving the use of Series 5s at Farnborough Sixth Form College could usher the S5 in as an ideal addition to schools. Using the S5's built-in wireless infra red port, students beam files from their S5s to a network server and as each individual S5 has a unique identity it can be used to track and monitor the work and attendance of students.

Dr John Guy, Principal of the college commented: "It represents a quantum

leap in educational administration which will have applications across the globe." It's unlikely the same experiment could be repeated using S3cs or Pocket Book IIIs because although these later models have an infra red port, it's only compatible with other S3c family machines.

New short-neck monitors by Nokia

The trendy term in monitors today is 'short neck' – a reduction in the length of the part of the tube which sticks out the back and houses the electron guns. By making the tube shorter, the entire case can be less deep, meaning the monitor screen can be positioned further away if the desk faces on to a wall, or simply to save desk space. Nokia has just announced a pair of 100 degree short-neck tubed monitors, which offer the most space saving yet.

The 447XS is a 17 inch display and the 446XS a 19 inch model. The 17 inch model can display a 1280x1024 screen mode at up to a refresh rate of 80Hz, while the 19 inch version boosts the refresh rate at the same resolution to 90Hz. Although as-yet





unsupported by Acorn, a powered USB hub is also provided in both models. The typical selling price for the 17 inch model is £299 and £419 for the 19 inch version, excluding VAT. Nokia's Web site is at http://www.nokia.com

Apology

In the December issue of *Acorn User* we mysteriously printed the wrong surname for Xemplar head, Brendan O'Sullivan – we apologise for this embarrassing error. If that wasn't bad enough, we got Castle Technology boss Jack Lillingston's name slightly wrong in the same issue too. Apologies all round.

Movies galore

The next issue of *Acorn User*, ironically, will profit in a way from the demise of Phoebe. Uniqueway had originally come to an agreement with Acorn to supply a number of high quality movie trailer clips to demonstrate Replay 3. Now that Phoebe is on hold, Uniqueway's Paul Middleton has offered the film trailer CD to *Acorn User* as a cover mount.

There will probably be ten or so trailers, including already released titles like *Lost in Space* and *Elizabeth* as well as forthcoming attractions including *What Dreams May Come* (Robin Williams), *Blade* (Wesley Snipes) and *Little Voice* starring Brenda Blethin and Jane Horrocks as well as a cameo appearance from Michael Caine.

The trailers range between 1 to 4.5 minutes and will definitely run on A7000+ or Risc PC machines and if there is space on the CD, smaller movies for older machines will also be included. Uniqueway, tel: 01222 464020, email: sales@uniqueway.co.uk

Competition winners

Over the past 6 months *Acorn User* has run many competitions but due to the changes we haven't released the winners' names. So here they are:

Exodus, June 1998

Chris Murray, New Milton, Hants; M. Jones, Chester; Jamie Goodliffe, Chesterfield, Derbyshire; W. M. Groenier, Amsterdam; M. Robinson, Middlesborough.

HP 690C, July 1998 A. Lowry, Chesterfield, Derbyshire

Canon BJC-7000, August 1998 Peter Davey, Slough, Berks; J. Modern, Catford, London.

Labtec Speakers, August 1998 W. Bayston, Sedgefield, Teesside

Olivetti JP-190, September 1998 S. Antczak, Oxted, Surrey

Blake's 7, October 1998 Helen Burke, London

New version of WimpWorks

Version 2.23 of Jaffa Software's application development tool, WimpWorks, is now available. WimpWorks allows anyone with a knowledge of BBC BASIC to produce powerful multitasking applications on any machine with RISC OS 3.10 or above. Jaffa strongly recommend that all existing users upgrade to v2.23 as there are numerous improvements, including the ability to access upgrades from the Web in future.

Upgrades to v2.23 can be obtained either via email request to: info@jaffasoft.co.uk, or by post to Jaffa Software, 28 Grange Farm Drive, Stockton, Rugby CV23 8FT The upgrade is free top existing users of WimpWorks v2.x while WimpWorks v1.x users are charged £10, there's a trade-in price from WimpBasic or WimpGEN of £15 and the full version is priced £35 – all prices inclusive.

Beebug closes retail business

Sheridan Williams, co-founder of Beebug, has announced that Beebug is to close its retail business. The shop in St. Albans was closed some time ago and now Williams, who is recovering from a chest injuries sustained in a car racing accident, has been forced to abandon most of the rest of the retail business which includes selling computers, peripherals and third party software and supplies, both from Beebug's St.Albans premises and also via mail order.

However, Beebug will retain development and support of its own software titles like *Sleuth* and *Ovation Pro* and will also strengthen its network installation and support business. Beebug magazine is unaffected by the changes with *Acorn User's* former editor, Mark Moxon, due to take over the reins for the 1999 volume. Beebug's Web site is at http://www.beebug.com

Acorn Southwest Show

The Acorn Southwest Show will once again be taking place at The Webbington Hotel in North Somerset. The date set for the show is Saturday 20th February 1999 and attractions will include a talks, demonstration, a games arcade and a charity bring & buy stand. For more information. Point your Web browser at http://www.argonet.co.uk/sw99 or phone 01707 390410.

Acor	Registered Developer Wiser Awards 1999 Huser Awards 1999 Huser Awards 1999 Huser Awards 1999		FONTCD WITH Worth	
	http://members.aol.com/i	Best graphics software Winner - DrawWorks2	QUOTE FCD1 W Free CD is Typos	
	Product Stitch 2	- Singer	rrp \$	Sale Price
	The complete package to produce cr DrawWorks Design Award winning vector graphics packa	er son	£31.50	£21.50
	Dr Fonty The enthusiasts font editor, full editine FairIsIe	BOS	£31.50	£21.50 £26,50
	Produce fairisle knitting patterns in se FontTrix PRO Quick and easy application to create	and the partition of the	£21.50	£11,50
	InformED Stand alone multi-tasking manuals in Mr Clippy The clip art manager, print, store & p		£21.50	£11.50 £16.50
	Report Generator Produce any type of standardised rep SeriaINET	n,	£21.50	£16.50 £16.50
	Simple home network for 2 computer TableCalc OLE The spreadsheet & table generator w	SUB-	£21.50 w/CSV export	£16.50
	ViVID 5000 Graphics enhancer for A3010/A3020 ViVID 20 Graphics enhancer for all pre RISC F	S SE	£16.50	£11.50 £11.50
	ViVID Gold (Colour Graphics enhancer for computers fitt Designers Solution	Card) ed with a ColourCard Gold	£16.50	£11.50 £59.50
	The complete design package, Draw graphics tablet and a FREE copy of		drz ciano s	
	FIRE FON	r CD WHH	N YOU O	RDER
	All offers apply	while stocks last. Offer prices ap	ply until 8th January 1999	47.57

All quoted prices (unless stated) are for single users versions only. Special offers relate to single user versions only.

Overseas orders please add £2.00 carriage All details correct at the time of going to press E&OE NDT & Typography are trademarks of ISV Products. All other trademarks are acknowledged This advert was produced using NDT fonts stored on the Typography CD & DrawWorks



iSV Products 86 Turnberry • Home Farm Bracknell • Berks • RG12 8ZH Tel 01344 455769





Cerilica Vantage

The disappearance of Computer Concepts left a gaping hole in the Acorn graphics market and despite PD plugsins and support for Artworks mostly from the likes of Martin Wurthner and Astute Graphics, we're in dire need of something completely new.

Fortunately the new vector drawing package from Astute Graphics is almost here: despite long-term worries caused by Acorn's plans to abandon Phoebe, the team behind the new package are far from giving up on the Acorn and have formed a new company to market and



A few of the features of Cerilica Vantage

company to market and support what is now called Cerilica Vantage.

Unfortunately, the grand scheme to relaunch the Acorn graphics scene by a consortium of Spacetech, Alternative, Akalat and Cerilica at Acorn World has had to be abandoned, but with luck this won't hold back *Vantage* too much. The application is currently being finalised for a UK release at a price of £200+VAT and should also be available outside the UK via local distributers. Some foreign language versions are also expected.

Chatting to Marketing Director Nicholas van der Walle has certainly left me in an upbeat mood and I can't wait to get my hands on *Vantage* and experience a level of design capability previously unheard of on a Risc PC. Watch this space. Cerilica can be contacted on 01989 567350

Picture of the month

'Joe Zone' is an unusual *Top Model II* rendering which takes this month's £20 prize plus a copy of Phantasm from Astute Graphics or, as they are now known, Cerilica. Artist Joe Burmeister describes his work on the picture: "I built the model by starting with the head, which I made out of polygons netted together by

hand. I split and added polygons till I had a face which looked like the photo I was working from.

"The glasses are every bit as simple as they look, the same with the body. The wall texture is from the *Top Model* texture CD. The other textures I made myself using *!Draw* and *!Paint*.



The light effect from the window is done by using a stretched-out rectangle on 'Add transparency'. The light bulb is as simple as it looks. The wiring is a cylinder distorted along a path."

Joe is now working with the VOTI team, so watch out for his graphics in future Acorn games. I couldn't resist including another picture on the cover disc from Joe which reveals his rather ironic sense of humour: it features a robot in a very human pose, getting down to some serious game play.

Typography

iSV has now launched a new version of its popular fonts CD. Professional Typography Expert 2100 includes all the fonts from Typography Volume 1 as well as 740 new faces and an array of tools like the Font Designer's Toolkit. Upgrading from Typography 1 costs only £10 plus carriage for a limited period.

Following the cancellation of Acorn World, iSV are also offering a range of special offers, details of which can be found on the company web site at http://members.aol.com/isvproduct/

Spacetech

Following the release of Photodesk 3, Spacetech have reaffirmed their commitment to the Acorn platform following the shock news from Acorn on the future of the Phoebe. Their next major releases will be CD-Rom based plug-ins for Top Model, including the long awaited TopAnimation and the very soon to be released Top3DFont.

Spacetech 01305 822753

Projection

Size, it seems, does matter, with yet another company boasting impressive performance from a small box size. This time it's a portable monitor projector in the form of the Impression A10 from Ask. The A10 offers 1024x768 resolution from a portable 4.9Kg at a RRP of £9,995.

> Ask 0171 436 1553

Print power

Canon are launching a rather unusual seasonal offer on seven of their top printers, ranging from the entry-level BJC-250 right up to the soon to be launched dual-head BJC-500.

Under the scheme, anyone purchasing one of these printers will receive a Blockbuster Video card entitling him or her to a free video rental each week for a year.

> Canon 0121 666 6262

Contacting me

You can contact the Graphics page by writing to me, Paul Wheatley, at Acorn User, Tau Press, Media House, Adlington Park, Macclesfield, SK10 4NP or, preferably, emailing graphics@acornuser.com.



On the brink... Year 2000

Pending Global Crisis

"The Millennium Bug is one of the most serious problems facing not only British business, but the global economy today. Its impact cannot be underestimated."

Prime Minister Tony Blair

The Crash of the Bank of England? Collapse of the Government? Just what difficulties will the Year 2000 cause you?

The "On the brink..." video is a non-technical explanation of the potential impact of the Millennium Bug in the world's computers and what you need to do about it.

Computers have been used to make modern society livable — it's hard to see how the infrastructure of the world could be managed without the hundreds of thousands of mainframe computers, tens of millions of desktop machines and two billion embedded microprocessors.

But on the 1st January 2000 some of those machines are going to fail and the potential results could be worse than all out global war.

The "On the brink..." 60 minute video features world-leading experts on Millennium Bug solutions and provides you with an understanding of what may be to come and how you and your family can avoid the worst. And it's a video you'll watch again and again, and recommend to your friends and their families so you'll be prepared for what may come.

ORDER YOUR COPY NOW

"Failure to deal with the
problem could lead to
commercial collapse. I
put it bluntly because I
want to get the message
across. It will not respect
national frontiers. Unless
we act now, there will be
international chaos."

Lord Sainsbury, Government Minister of Science and Technology

Saraharanan 1,2000	osbin
Januari	- a prepare video
unt a scare video	
How Can This Millenn a Personal Crisis?	ium Bug Present You Wilh Can You Be Prepared?

the "On the Brink" Video at £19.99 each

Add £1 P&P per video if ordering from the UK Add £1.50 P&P per video if ordering from Europe

copies of

YES! Please send me

In the Brink . .

YEAR 200 Pending Global G

Add £3 P&P per video from Outside Europe	Postcode Date of Birth E-mail			
I wish to pay by: Cheque/postal order (payable to Tau I Credit Card (Visa/Barclaycard/Master		Send your order to: "On the Brink" Video Offer, Tau Press, Media House, Adlington Park, Macclesfield SK10 4NP.		
Credit Card No:				
Please tick here if you do not wish to receive promotic	onal information fro	om other companies		

Name

Address



Free and easy?

Freeserve from Dixons sounds too good to be true. Free Internet access, free Web Space, free infinite e-mail addresses and free Usenet news. all at local call rates. Several sources from the Usenet newsgroups have described how to sign up for Freeserve without getting the PConly CD from a Dixons store. Could I do it myself on my Acorn Risc PC, armed with just the technical information gleaned from other experimenting users?

After a lot of fiddling and head scratching, the page pictured here shows that I was successful. I used Socketeer with Acorn Browse and the Acorn beta-test Secure Sockets Layer module. The Freeserve sign-up server prefers

m	
27	
	For make a not of your score drach.
	Your new o mail address as dayadij acade bha itreverve covak. Your new Finemerer iner name is a cando bha freeserve covak. Click the Finalmed burrouxo sacronaically spekine your computer with all the
	and consistent you need to conserve to the internet
	Whenever you want to contact to the laternet, click on the Preserve interest icon on your PC Deduce Calicy on the Onlock Express icon to use your e-mail.
	Colore support to available from the Environment humepages, www.threadew.anelingport
	wing 'Freesarve - Account details' 15K

Arcade BBS gets 5Mb more Web space

00:00

01:00

02:00

03:00

04:00

All the hits and more the Netherlands - yes, that's where the Ned bit

free.

Everything you've always wanted to know about your Web site, but didn't want to pay for. That's the free service offered by NedStat UK (http://uk.nedstat.net/) a website tracking service run by Compass Interactive BV of

1	Pageviews per hour					index page, you can have charts galore (like the example		
0-00:59	2.2%	06:00-06:59	4.7%	12:00-12:59	3.8%	18:00-18:59	1.3%	here) generated from
0-01:59	6.9%	07:00-07:59	7.9%	13:00-13:59	4.1%	19:00-19:59	0.9%	information gathered by the NedStat UK server, showing
0-02:59	5%	08:00-08:59	4.7%	14:00-14:59	3.8%	20:00-20:59	1.9%	number of hits per hour, hits
0-03:59	5%	09:00-09:59	8.2%	15:00-15:59	2.8%	21:00-21:59	1.6%	per day, where the visitors come from, and so on.
0-04:59	4.4%	10:00-10:59	7.6%	16:00-16:59	2.5%	22:00-22:59	2.2%	To see the charts and



Mornings are electric, apparently

Internet Exploder 4, and gives an error when Browse is used. Fortunately, Matthew Hambley had posted the solution in comp.sys.acorn.networking. You simply remove "/perl" from the URL whenever the error occurs, and you can then successfully finish your application.

Once the account has been created, it can be just as easily accessed from an Acorn machine. I used Socketeer again with the Acorn PPP module and PAP authorisation. For detailed information on how to do this, try Paul Vigay's RISC OS Internet Connectivity Web site for ANT Suite users at http://www.matrix.clara.net/Acorn/inet.html, or Richard Siggee's 'Freeserve on Acorn' page for Socketeer at http://www.siggee.freeserve. co.uk/

To open your free 5Mb Web site, you log into their FTP server at uploads.webspace. freeserve.net/ using one of the Freeware FTP clients. This automatically generates a default index page which you can replace with your own HTML creation. The Webspace FTPserver wouldn't let me create directories for image files, so be aware of this when testing a site on your own machine.

Freeserve Web sites seem interference-free at the moment, but will they make use of the demographic information given at signup? I'd keep hold of a paid subscription to an ISP for the time being, because in this world you usually get what you pay for. Having said that, the Freeserve technical support line costs £1 per minute at all times, so it'd better be good.

comes from. Providing your Web site receives

less than 10,000 hits a day, their services are

Just by retrieving their little icon onto your

diagrams, you click on the

above-mentioned icon which

takes you to your own NedStat

information page. There's no

numeric counter, as the full

offer much

information. NedStat don't

mention that visitors with

image-loading switched off or

with Lynx text-only browsers

will not register hits, but you

can't win 'em all.

stats

more

Ticker Clicker

!Ticker, written for Acorn 32-bit machines by Garan Jenkin, is an application which fetches news headlines from the BBC's online news server and scrolls them across the top of the screen. When an item is clicked on, the full story is fetched by your web browser. Ticker requires an established dial-up or Ethernet Internet connection, and can be set to use a proxy server. Other user settings adjust size, speed and position of the banner, and choice of low-graphics pages to speed up fetching. Ticker has to be the most ingenious freeware Acorn program of the year.

!Ticker http://www.geocities.com/ Paris/Lights/7724/

Spuddy hanging up?

Stephen Harris, sysop for the last four years of Spud's Xanadu, affectionately known as Spuddy, has announced that the system will soon be closing. Spuddy is a Sun network dedicated to the provision of free mail and Usenet service for the UK for the last eight years, and gave users free access to a full Unix shell and to a friendly BBS. Stephen points out that their original aim of free access has now been fulfilled by Dixons' Freeserve and others, and adds that running Spuddy has been a satisfying experience. You can wish him well by mailing sweh@spuddy.mew.co.uk, and see what you've just missed at their Web site.

> Spud's Xanadu http://www.spuddy.org/

V.90 ratified

The International Telecommunications Union in Geneva has now given final approval to the 56kbps modem standard known as V.90. Agreed on earlier this year and supported by both Rockwell and 3Com, the ratification is expected to restore customer confidence after confusion over the two previously competing systems. However vendors who had cut prices due to buyer caution do not now expect to regain their hoped-for profit margins. Incredibly we're still waiting for the V.90 UK Flash upgrade for our US Robotics Couriers.

Contacting me

Keep sending me interesting URLs for the next yoUR List by e-mail to david@arcade. demon.co.uk, or mail #2 on Arcade BBS 0181 654 2212.

public domain

There is hope

Despite the sad news from Acorn of the Phoebe's demise, the PD page rolls on as usual and, as you can see, this month's is packed with releases and utility updates. It's almost as if each author is doing his bit to give encouragement to the RPCII rescue plan. One word of advice – don't stop. The Public Domain has always been such a personal and friendly market and has played such an important part over the years that we can't give up now.

StrongARM Patch

Jan de Boer has constructed a rather nifty program to patch the StrongARM and deal with some of those niggling compatibility problems. Pcr13 changes SWI's that some programs construct on the stack into inline OS_CallASWI instructions. The effect of this is to patch programs like 65Host and Interdictor II. Pcr13 is on Jan's web site at http://home.worldonline.nl/ ~jandboer

AcornSite

AcornSite has been updated this month with an array of additions to what was already a wonderful PD links site. There's now a free ads page, support for Web page updates, a 'recent changes' page and a 'site of the month' displaying which link got the most votes. Check out Acorn site at http://www.visitweb.com/ acornsite

Acorn Emulation Page

David Sharp's emulation Web page – which I simply can't praise enough – is launching a two-stage emulation competition. As David explains "The competition is free to all who wish to enter, with the prizes of a copy of the excellent 6502Em and Z80Em, the commercial Acorn 8 bit and Spectrum emulators, kindly donated by Warm Silence Software."

Check out the excellent Web site at http://www.cybervillage. co.uk/acorn/emulation/competitio n/ Emulation on the Acorn is simply thriving, and it's great to have such a valuable news and links site for the scene.

Recommended PD Libraries

- APDL, 39 Knighton Park Rd, Sydenham, London SE26 5RN
- ARM Club PD Library, Freepost ND6573, London N12 0BR
- Five Star Marketing, 4 Shepherds Walk, Bushey, Hertfordshire WD2 1LZ

Stunt Racing

Back in the days of the ARM3 there were several crucial multi-player games you just had to own on an Acorn. As everyone knows, playability was (and still is) the key and several of these games combined great game play with the long lasting bonus of multi-player support. *Spheres of Chaos* and *Chocks Away* were both very popular, but the third favourite was always *Stunt Racer 2000*.

A classic game from a classic era, it's had new life breathed into its dated 16 colour body with an excellent PD release from David O'Shea, Robert Sullivan and the original main man behind the Fednet name, Andrew Hutchings. *SRDesign* is a desktop editor for Stunt Racer. The program allows you to create and edit your own Stunt Racer tracks.

I'd been meaning to review

the first PD release of the Stunt Racer editor for some time but I'd never quite got round to grappling with the interface in order to do it properly. This latest release brings it right up to speed with a desktop implementation that's just too good to ignore. The main window consists of of three panes: The plan view of your course, a height window and a set of track pieces - basically, it's a construction kit. Drag the height meter to the level where you want to add objects, select from the bottom window the piece you want to add, and click in the main window at the point where you want it to appear. You can zoom in, edit by dragging track pieces and delete pieces with a simple click of Adjust. A clear and simple toolbar makes for very easy direct access to the main editor functions.

There are one or two niggles like the edit window being too small (please make this scalable, guys!) and the way objects pop to the side when you drag them, but on the whole this is a massive improvement over the original editor. Full marks to the team of programmers as well as VOTI manager Nathan Atkinson for getting everyone working together.

You can download *SRDesign* from http:// ocean.ucc.ie/99/oshea/acorn/srdesign.html



Police action

LookOut is a useful and interesting utility which was originally written as a memory manager but has now been extended to perform policing functions in an educational environment. After loading, *LookOut* hides on your machine and monitors tasks starting up on the desktop. If it spots an "illegal" task, it can then display a warning to the user and, optionally, terminate the offending program.

Configuring can be done via a simple setup window. Just enter the task name or select from a list of currently executing tasks, then set the response required if this task is spotted by *LookOut*. The program is reasonably difficult to quit and so provides excellent protection from outlawed programs, perhaps on a school network. *LookOut* can be found on the September 98 subs disk from APDL.

Demo discussion

As you'll have gathered from the item on Rev 98, a new spirit of cooperation is spreading through the demo coding scene. Despite the recent bad news from Acorn, the teams are 100% committed to the platform and most teams are already considering plans for another competition next year.

Newsgroups are an ideal forum for discussing these events and it's hoped that the alt.acorn.demos newsgroup can do the job. If you're interested in the scene and want to voice your support or air your views, please get online and check out the group.

You can also vote for your all-time favourite demo by pointing your Web browser to http://www.ndirect.co.uk/~mrdalliard/. This is a great idea to stir up the 'old versus new' or 'design versus coding' arguments, but I'd like to see a voting system that allows the voter to choose first, second and third rather than just one favourite.

Evolution hits Rev 98

As mentioned last month, the future of the Rev 98 demo competition was put into serious doubt after the shock news from Acorn left the contest without a prize or a venue. Fortunately a rescue plan has been formulated, and the competition will be going ahead. Discussion between the main entrants and support from the PD Page has led to the announcement of a new-look competition held in cooperation with Acorn User.

The new competition, entitled Evolution, will no longer be a party event but will be linked with a special demo issue of the magazine. All demo's entered by 1st December will appear on a special cover CD, accompanied by all sorts of demo information and interviews in the magazine. There will also be a voting form, so that readers can choose their favourite production and enter a prize draw. Anyone interested in entering or sponsoring the event can contact me for more information here at the PD Page, and further information can be found on the Acorn Arcade web site at http://www.acornarcade.com/ More news soon.

> Early shots from Frederic Elisei of Arm's Tech and Paul Thomson of DFI of their entries for the Evolution Demo Competition



FSI Batch, mentioned previously on the PD Page has now reached version 2.2 with a number of bug fixes and feature additions including the ability to lock the aspect ratio of output sprites. Check http://www.argonet.co.uk/ users/tudor

Relics

Despite being quiet for many months, renowned demo crew The Xperience are still on the scene, despite having no plans for a new demo at this time. Fortunately, all is not lost for TXP fans as the group have just released an archive of source code from previous demos *Blu, Phonology* and *Xcentric*.

Unfortunately there's a problem with the release archive, but that should have been remedied by the time you read this. Demo source code is a great resource for new coders to learn the tricks of the trade, so point your browser to the TXP site at http://www.stud. uni-hannover.de/~bdl/Xperience and check out the source. Full marks to the team for making this valuable release!

TempDir

Quantum Software have updated TempDir which is now at version 1.28 and is freely available for download by registered users. As Stuart explains "The latest update allows the user to determine the format of the dated directory themselves, including producing ISO 8601 dated directories. This new ability also has the side effect of allowing the user to set *!TempDir* to produce a set of daily, weekly or monthly directories if they so wish." Excellent stuff.

Point your browser to the QS Web site for further information, http://acorn.cybervillage.co.uk/qs/

Squeak

Version 2.2 of Squeak, the PD Smalltalk system is now available on the web at http://sumeru. stanford.edu/tim. As Tim explains "Smalltalk is the original objectoriented programming language and environment from which most OS's have learnt about windowing, pixel displays, menus and so on." I've not had chance to try out the system at the time of writing but it does sound rather interesting. More info as it comes.

Contacting me

You can contact the PD Page by writing to me, Paul Wheatley, at Acorn User, Tau Press, Media House, Adlington Park, Macclesfield, SK10 4NP. Or preferably, by e-mail to pdpage@acornuser.com

Utility roundup

The pointer-hiding module in Zap had to be removed after it was found to crash on the StrongARM. Matthew Webster provides a nice little module that does the same task but better. *HideMows* does just what the badly spelt title says. If you do any typing, the pointer is hidden from view so it doesn't get in the way. The new feature is that *HideMows* brings back the pointer after a user defined delay. Crisp.

BarHide simulates a feature of the latest window manager by bringing the iconbar to the front of the screen if the mouse pointer is held at the bottom of the screen. Very handy for use in a cluttered desktop for those people who don't have the latest machines. Both *HideMows* and *BarHide* can be found with an array of other utilities on Arcade BBS.

Ticker is a little application that fetches news information from BBC News Online on the Internet and scrolls it across your desktop. As author Garan explains "The stories come directly from the BBC WWW server, which is updated regularly. Each item of news can be clicked on to open the full story in your Web browser. It is fully configurable to allow you to view only the headlines in which you are interested."

Download Ticker from http://www.geocities.com/Paris/Lights/7724/ticker.zip



esktop Projects Ltd 161-474 0781 Unit 2A, Heapriding Business Park, Ford St, STOCKPORT, Cheshire. SK3 0BT. www.desktopp.demon.co.uk VISA Accept Switch

Email: info@desktopp.demon.co.uk. Open Mon-Sat 10.00-18.00 hours.

Xmas



PCPro 3 delivers significant benefits

The latest version of PCPro has at last plugged some big gaps in the support for PC card software – notably the provision of VESA and Direct Draw support. The most obvious area to be enhanced is games – many simply would not run before, or were forced to operate in an inferior and slower manner. Having said that, I have also noticed the odd piece of ordinary software that fell over because of the lack of support for direct draw – I seem to recall some educational CDs at last year's BETT that looked interesting but failed to run.

So what games do now run? I do not pretend to offer an exhaustive list, but these packages and the tips needed to get them running may inspire you to try your favourite:

Duke Nukem 3D did run on previous versions but was painfully slow. Now I'm told it's around 5 times faster and

achieves a reasonable 15 frames per second using VESA 2 mode

at 320x400 resolution.

Sentinel Returns now works happily under Direct Draw provided you don't demand too much detail. Descent and the DOS version of Red Alert both benefit from a speed improvement as will the Mega Drive emulator Genecyst. In fact any game running at 320x200x8bit should run faster provided you set the fast video option on.

Direct X support isn't ready yet, but there's still



Sentinel Returns: Recognise this game?

hope for that too.

Remember that the built-in support for sound is adequate for most basic purposes but not up to running many games – some will simply crash if you try to use it. So if you are having sound problems, you might consider improving your system with PCSound Pro. Links to that, and other useful bits of software, plus information on the new PCPro3, can be found on Aleph1's site at www.aleph1.co.uk.

It may be worth a reminder that there is a games list at www.acorn-gaming. org.uk/PC/ but thus far it hasn't been updated to recognise the recent improvements in PCPro. On the other hand I guess if you discover some new possibilities that would interest others, log on and let them know.

Phoebe

I had expected to fill this months column with the latest on the chances of support for PC cards inside Phoebe. But with Phoebe (at the time of writing) dead if not yet completely buried, that has clearly been shelved too. I can only hope that something will come of the current discussions and that Phoebe with all its promise will be resurrected. Perhaps if that happens it should be called Phoenix.

Finally, it occurs to me that with the (hopefully temporary) loss of Phoebe, will mean that our reliance on the existing PCPro/PC card system will certainly continue for a while yet. So, what help do you need to run your cards ar maximum efficiency? Why not write in and I'll do my best to provide some intelligent and useful answers.

Contacting me

You can contact me, Mike Buckingham, by post at: Acorn User, Media House, Adlington Park, Macclesfield SK10 4NP or by dropping me an e-mail at: pcpage@acornuser.com

CDs – better now

I had an e-mail the other day from a reader who wanted to know about CDs – he was under the impression that they very often didn't work properly under *!PC*. Well I'm glad to report that any problems we have laboured under in the past are now history. It's sometimes hard to remember what was wrong, but I do recall that enhancements of Win 95 such as being able to handle long filenames on PC CDs aimed at Win95 users did cause problems. But in recent

ICC LICC

Duke Nuken: Now running much faster

months I've not had any problems reading CDs. Long file names are now supported and even Win95 only discs such as Britannica run reliably.

I did run into a problem with a new SCSI CD-ROM drive that appeared to think it was in fact seven drives and gave me a screen full of icons that all worked. Impressive to look at but hardly helpful. I'm glad to say that the author of the SCSI miniport driver, Andreas Walter, was extremely helpful and provided a patch that cured the problem by ignoring any duplicate reports. Come to think of it I'm not sure if this patch has made it into the software on general release but if you have this problem contact me and I'll sort out a solution with Andreas.

It might also be worth noting at this point that the new *PCPro* has an enhanced facility to set up SCSI devices. This allows you to set any SCSI device as 'ignored', 'reserve' or 'reserve forced'. It can be worth playing with these settings to ensure your SCSI device is behaving as desired. For example, I use different configurations with or without access to a SCSI drive. It's not enough to set the number of drives simply to one or two. You must also set the SCSI config for the single drive system to 'ignore' the second (SCSI) drive or it will appear anyway.



T

The Fourth Dimension, 78 Brighton Road, Worthing, West Sussex BN11 2EN Tel: 01903 213361 Fax: 01903 523679 Email: 4d@cje.co.uk Web: www.cje.co.uk/4d/ Prices and specifications are correct at the time of going to press. All prices are fully inclusive. E&OE.





After a few months busking in the cold, the Music Page finally returns to *Acorn User*. So what has happened in the Acorn music/audio scene since I last wrote this column back in June? Well, quite a lot actually, but it's not all good.

There are new packages appearing (see next month's review of Clares' Rhapsody 4) but the majority of thirdparties seem to be hedging their bets by writing PC/Mac versions of existing Acorn titles, and in the case of Sibelius, abandoning the Acorn format all together – though that's because the needed development software just doesn't exist for RISC OS. What seemed like a flourishing, dare I say it, growing market, appears to have turned into a rather stagnant mire.

I guess the easiest person/company to blame is Acorn for 'pulling-out' so unceremoniously on the 17th September. Just when everything was looking good for the future of RISC OS audio and ditching what could have been the best platform for creating music around. Now though, with the ever-growing onslaught of Wintel, plus the successful relaunch of Apple, it seems unlikely that anyone will see Acorn as a serious contender.

Probably the single most important ingredient for a successful platform is the availability of good software, especially the so-called killer-apps. The awardwinning Sibelius score writer was just such a program with people buying Acorn hardware just so that they could run it. Now though, due to Acorn's lack of support, Sibelius no longer see it as a viable proposition. The official line from Benn Finn (Managing Director of Sibelius) is as follows:

"As you may have heard, Acorn recently announced that they have decided to cease development of new RISC OS computers and of the C++ compiler that was due for release a few months ago.

"Acorn's decision unfortunately means

that it is now impossible for us to release the new *Sibelius* program for Acorn computers, as their C++ compiler is essential for us to make any further progress on the project.

"In the light of this, we will be extending the current special offer for Acorn *Sibelius users* until 28th February 1999. Before this date, registered owners of the program can purchase Sibelius for Windows at a special discount price."

So, it does indeed look like the end for Acorn *Sibelius*. A quick glance through *Sibelius*' new web site makes no mention of the Acorn version, in fact it makes no mention of Acorn whatsoever. This is particularly sad as it was *Sibelius*' success in the Acorn marketplace that allowed them to move in to the PC and Mac arena.

SIBELIUS

THE MUSIC NOTATION SOFTWARE

ESP thinking ahead

Expressive Software Projects are another hardware/software company synonymous with the Acorn market. So it's also rather disturbing to see them bringing out products specifically for the PC and Mac. To their credit though, they do say that they expect to eventually have versions of their software for all platforms (including Acorn) although it could still be construed as a step in the 'wrong' direction.

First off is kind of cross between a MIDI sequencer and MIDI player called *MIDIGrid*. The program, currently only available on the Windows platform, allows the user to arrange single or groups of notes on a grid and then played back.

This rather unconventional approach to writing and playing music has been designed and developed in conjunction with the York Electronics Centre at the University of York; one of several collaborations with outside companies that ESP are currently pursuing

Second, E-Scape is a musical performance

and composing tool ideally suited for people with restricted physical movement. The program has been designed to be easy to use and can even be operated with a single switch or by computer speech cues.

The program can also be operated using mouse, trackerball, sonic beams, or keyboards, making it accessible even to those who previously were unable to play a conventional musical instrument.

While I completely condone ESP's efforts to bring music to a wider group of users, I do hope that they continue to support the Acorn market and release RISC OS versions of *MIDIGrid* and *E-Scape* soon.

MIDIGrid costs £95 (exc VAT) and is currently only available for the PC. *E-scape* costs £250 (exc VAT) and is currently only available for the Apple Mac.

ESP can be found at 21 Beech Lane, West Hallam, Derbyshire, DE7 6GP. Phone 0115 944 4140, fax 0115 944 4150, mailto:sales@exsoftpr.demon.co.uk and http://www.cybervillage.co.uk/acorn/esp/



And finally...

So what of the future for Acorn music? Companies specialising in RISC OS audio software and hardware have come and gone in the past (who remembers Armadillo, or Mike Beecher's EMR?) so who's to say that another company won't appear and save the day? Personally, I can't quite see it happening, but I'd love to be proved wrong.

If you, or someone you know is in the process of producing that killer app, or even just have an idea for one, now is the time to stand up and let everyone hear. Who knows, you might even be remembered as the person who saved the (Acorn) world.

Contacting me

You can write to me, Rob Miller, at Music Page, Acorn User, Tau Press, Media House, Adlington Park, Macclesfield, SK10 4NP or by e-mail to: music@acornuser.com



Bishop's Stortford, Hertfordshire, CM22 7ED. Partners: Nigel D. & Sara L. Cannon. AU/Xmas '98. All Registered Trademarks acknowledged. Without Prejudice. All prices are UK £ sterling &, unless otherwise stated, exclude VAT and delivery. E&OE.



What we had to trim

Unfortunately there was so much that we wanted to fit on to this month's cover disc not only did we have to leave loads of great stuff off (including a superb new game that will have to wait until next month) but we also had to trim some of the features that have been included just to get them on.

So let's see what goodies are not quite the way they were supplied to us:

RC5 Cracking

We wanted to put both the multitasking and single-tasking versions on, but we couldn't. So we just kept the multitasker. As you have to have Internet access to use

this at all you can pick up the singletasking version from the distributed.net site. See the feature on page 49.

*INFO

Some of the example files have been cut from !Carbon, our apologies to Adam Granger on that. And we had to viciously prune the larger textures from Jan Vibes' !Textures program. *INFO starts on Page 57.

Rambles Extra

The LED controlware was supplied with the WimpBASIC source code, which we had to leave out. Other than that it works perfectly. Check it out on Page 74.

Disc information

The software on the cover disc has been compressed using ArcFS 2 from VTi, and are opened by running a copy of ArcFS then double-clicking on the archive to open it. There is a copy of ArcFS on each disc.

Most software will run straight from the archive, but some programs may need to be copied out of the archive before being run, uncompressing them in the process. Any program that saves a file to disc, for instance, will be unable to do so into the archives on the disc.

Faulty disc?

If your disc is faulty, test whether it will verify by clicking with Menu on the floppy drive icon and choosing Verify.

If it fails to verify or is physically damaged you should return it to TIB, TIB House, 11 Edward Street, Bradford, Yorkshire BD4 7BH. If it verifies successfully return it to the Acorn User editorial office at the usual address.

The Acorn User cover discs have been checked for viruses using Killer version 3.001 from Pineapple Software.

Regular & Features

CORNUSER Cover D

CHECKED . VIRUS CHECKED . VIRUS CHECKED . VIRUS CH

- Java: sample classes and HTML
- The multitasking RC5 cracking code, join the battle and help RISC OS win
- Run the Risc: LED display sequence control using PIC Plus (nearly) all the *INFO
- programs.

Extras

From fans of Mike Cook: LED controlware



AJS Computers	
Akalat Publishing	
Aleph One	
APDL	
Archive	
Argo	
Astute Graphics	
Cannon Computing	
Castle Technology	
CJE Micros	
Circle Software	
Cumana	
Cumbria Software Systems	
Curriculum Training Associates	
Daco Systems	
Data Store	
Davyn Computers	
Desktop Projects	

Eesox	
Electronic Font Foundry	47
Future Computing	
Icon Technology	
Irlam Instruments	
ISV	12
IT Consultancies	
Levens	
Liquid Silicon	
Pineapple Software	
ProAction	
R-Comp	55
Really Good Software Company	
SiPlan	
Spacetech	
Stuart Tyrell Developments	
Todd Education	51

To advertise in Acorn User contact John Snowden on 01625 539494

Christmas 1998 Acorn User | 23 http://www.acornuser.com/

	rchimedes Rublic Domain	
All prices includ This is only a fraction of Acorn format clip a	Le VAT and UK carriage except hard drives add £5 for of what we have available. We also have thousands of discs full of PD art. For a full catalogue on 800K or 1.6Mb disc please send 50p or two	internal drives, £8 external and Shareware and around 500 discs
Farmer F		w.apdl.couk/
3.5" IDE Hard Discs Drive Plus i/face	APDL Public Domain, Cli	1000
210 Mb £42 £81 420 Mb £52 £87 540 Mb £59 £107 850 Mb £71 £118 1.1 Gb £80 £127	 APDL PD-1 The best PD CD from the best PD library. Ow more than 100 novels, etc. No games, clip art, r APDL PD-2 Around 700 games and novelties, over 250 gam plus over 2,000 music files and more than 5 	music, or other non-serious stuff. Only £12.50 Both for just £22
2.1 Gb £91 £138 2.5 Gb £97 £144	DTP-1 and DTP-2 Each have over 500Mb of clip art f Draw, Sprite or Artworks format.	
3.2 Gb £99 £146 4.2 Gb £116 £163 4.2 Gb 5¼" £114 £161 5.1 Gb £122 £169	DTP-3 The third highly acclaimed APDL clip art CD. More for schools or anyone who needs a huge collection DTP-1 plus DTP-2 plus D	n of clip art at a sensible price. Only 217.50 DTP-3, just £40
6.3 Gb £137 £184 8.2 Gb £167 £214	DTP-4 Our new clip art CD. Over 12,000 clip art files, plus 170 high quality colour pictures. All catalogued and	complete with thumbnail images
11.8 Gb 5¼" £204 £251 'Plus i/face' price includes an APDL fast IDE interface.	Games CD 1 A collection of twenty of the best PD games from the CD on almost any machine. Hours	of all types. Ready to run direct s of fun for an unbeatable price. only £7.90
2.5" IDE Hard Discs A3020 3010/3000	Fantasy Pictures By request from our customers, the p of the APDL catalogue. Lots of Swor	
30 Mb £36 £79 60 Mb £49 £99 80 Mb £59 £109 120 Mb £67 £117	Education Resources A CD from APDL especially for school know you want. More than 5,000 Aco hundreds of e-texts, over 300 popular	rn format clip art images,
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	Earth in Space Pictures, databases, information on s missions, etc. etc. A huge amount of c	
250 Mb £89 £139 330 Mb £94 £144	Wizard Apprentice Have you got what it takes to be this great game with superb grap	come a Wizard? 100 levels of new low price
420 Mb £99 £149 512 Mb £123 £173 800 Mb - £178 2.1 Gb - £197	Last Cybermoch, Sea Trek,	ames. AlfaXL5, Pharoahs Secret Tombs, Caves of Confusion, Robocatch, and two Jewels of Jezabar. Also available on disc.
A3010/3000 includes APDL IDE interface, A3020 includes fitting kit	APDL ideA fast IDE interfac	
SCSI Hard Discs 210 Mb £35 420 Mb h/h £55 540 Mb £68 1 Gb h/h £79	 No complicated setting up. It's self-configuring so just plug it in! Uses DMA (Direct Memory Access) on Risc PC. More than twice as IDE interface or others which don't use DMA. Includes CDFS and ATAPI CD drivers for many popular CD ROMs. Four devices, any combination of CDs and hard drives. 	32 Mb SIMM £43.00 32 Mb High Clearance £49.00
1 Gb £94 4.2 Gb h/h £159 4.2 Gb £186 8.7 Gb h/h £329	 Up to 8 partitions, so you can have large drives on pre RO 3.6 machin Software in flash EEPROM for easy update, including VProtect for ea Can use DOS formatted drives or removable discs. Supports the new range of Syquest SparQ low cost 1Gb removable dr 	PD CD - 3 £8.50 arlier machines. PD CD - 4 £12.50 PD CD - 5 £8.50
'h/h' indicates half-height approx 1½ inches high, others are 1" high. IDE CD ROM drives Internal	 Connectors are available for external drives or CD ROMs Fits A310, A400, A5000, A540, A7000 and any RiscPC. All these features for the incredibly low price of A version to fit the A3000, A4000, A3010 or A3020 is also available above features. 	e. This has all the Hero Quest (not S/Arm) £8.50
Drive with all cables and drivers for RO 3.6+ where required	above features, supports two internal and two external devices, and Syquest drives	Question Gold
16x£4524x£4732x£51Drive including APDL IDE interface	The 1Gb Syquest SparQ drive is the ideal solution for backing up larger hard drives where old technology like a Zip drive just isn't realistic. It's big enough to hold a lot of data, and with our interface it's faster than the	General software Faster PC - £20 The alternative XT PC emulator. Works on any model with 2Mb RAM from an A3000 to a Strong ARM Risc PC.
16x £89 24x £92 32x £98 36x £103	built-in hard drive on a RiscPC so you can use it as an extra hard disc. Discs are much cheaper than anything of comparable size, just £29. The drive can be fitted in a 3½" or 5¼" drive bay. SparQ internal IDE drive complete with TWO discs and APDL fast	PowerBase - £15 Ready-to-use version of the very popular and easy to use Shareware database. With examples, tutorials and printed manuals. Better than most products costing many times the price. This will
External Drive in case with power supply and	IDE interface. Solve all your backup problems for just £209 NEW - APDL printer port Syquest drive	do everything that 99% of database users need. We are now the distributor for Graham Crow's Desktop Suite
including an APDL IDE interface. Probably the best way to fit a CD to a pre- RISC-PC machine. 16x £146 24 £145	At last, you can now have a 1Gb Syquest SparQ printer port drive at a realistic price. It isn't as fast as the IDE version but you can fit it to any machine with a bi-directional printer port (ie. anything with a hi- density floppy drive) and move it between machines. With Acorn and	MenuBar - £15 The very best pull-down menu system. An absolute essential for any hard disc user. You can switch between up to 30 different menu bars. Tiger - £15 Lets you use very long descriptive
24x £151 32x £157	DOS driver software. Special introductory price, just £199 NEW - Very fast SCSI interface	filenames. Unlike some products this is very robust as it works in parallel with the filer so can't corrupt discs. WorkTop - £15 Switch between up to 30 different
CD ROM driver software Works with most ATAPI CDs including Goldstar, Hitachi, Lite-on, Mitsumi, Sony, Panasonic, Samsung, Pioneer, Toshiba, Sanyo, NEC, etc. Includes CDFS etc. so can be used with RISC-OS 3.5. Intended for the RPC but can be used with an	We are now UK agents for the ACE Connect 32 SCSI interface. We intend to produce our own, improved, software for this, but in the meantime we have a limited number at an incredible price. These are very fast, in fact, the fasteset SCSI interface I've tested at <i>any</i> price. Connect 32 SCSI interface - £109	working environments with a single mouse click. Stars up the tasks you require, opens directories, changes screen mode, it's just like moving to another computer. An invaluable productivity tool. Ancestry Plus - £59 The long awaited replacement
for the RPC but can be used with an A5000 but as the drive can't be fitted internally you will need to keep cables short	ACE 586 PC cards Available with 128K cache from just £199 or 512K cache from £299.	for Graham Crow's very popular Ancestry genealogy program is now available. This is a desktop version of the original program with some features of Ancestry 2
Short Only £8 inlcuding UK carriage or £7 when ordered with a drive	We can offer a trade in against your old card, which makes it even cheaper. Good performance for Windows at a sensible APDL price.	(not written by Graham). A discount is offered to users of the original Ancestry or Ancestry 2 Upgrade prices Ancestry 1 - £50 Ancestry 2 - £40



Mark Moxon kicks off a new series on RISC OS Java programming with a and the basics of Java

look at compilers, browsers the universe and Java

f you're propping up the bar in a West End club and that rather attractive stranger kicks off the smalltalk with a 'So, what do *you* do then?', what's the best answer? Do you say: 'I'm a C++ programmer'? Er, no. Or what about: 'Well, I work with computers'? Probably not. On especially among people who don't really know what it is. And because of that, Java is cool. Every Web designer it comes to employment prospects. If you're looking at learning a programming language, make it Java. Peter Naulls looked at reasons for the popularity of Java back in the December 1997 issue of Acorn User but, in case you missed his article, the main reason Java is so important is that it is truly portable: it can run on any system capable of running a Java Virtual Machine (JVM), which RISC OS can. This makes it perfect for the Internet: HTML is platform-independent, and

so is Java. Combined, they are responsible for transforming the World Wide Web from passive collection of hyper-linked pages to a dynamic and interactive experience.

Java on RISC OS

write Internet you're going to need five pieces of software. Luckily quite a available from the Internet, and the relevant URLs are given in the 'Where to get your Java

kit' box.

The first thing you'll need is a Web browser. A commercial product - like Acorn's Browse, the ANT Internet Suite or R-Comp's WebsterXL

Christmas 1998 Acorn User |



- is the only option, as unfortunately the free browsers ArcWeb and Webster do not work with Acorn's JVM.

The second is a JVM for RISC OS. At the time of writing the only JVM available is Acorn's RISCCafé CD which works with all the popular browsers and implements Java 1.0.2. Despite the turmoil inside Acorn, work is progressing on a Java 1.2 version for the NC, but whether this will translate into a RISC OS product remains to be seen. Another option for the future is the Java 1.1 JVM Chockcino from Peter Naulls; this isn't available just yet, but keep an eye on the Chockcino home page for updates.

The third essential package is a Java compiler. Again there is only one choice here, Guavac, again from Peter Naulls. A Java compiler takes Java programs and produces a Java 'bytecode' file, which can then be run by any JVM, and Guavac does a good job of compiling. Instructions are provided, but I'll cover how to set up your Guavac system properly in a moment.

The fourth bit of software you'll need is a good editor. You can always use Edit but, given that there are some much better free editors available, you'd have to be mad to stay with it. Both the main contenders, Zap and StrongED, have Java HTML modes and that make programming in these languages a dream. If you haven't used either before, StrongED is probably easier to get to grips with (its help system is excellent), but Zap is more powerful - if you can get past the technical barrier of its help files. I tend to flit between the two regularly, but that's because I'm indecisive. Probably ...

The final piece of the puzzle is a longfilename filing system. You could survive perfectly happily without such a beast but then you'd be restricted to ten-character filenames, whereas with a free piece of

```
import java.applet.Applet;
import java.awt.*;
public class Ex1 extends Applet {
  Label label1;
  TextField text1;
  Button button1:
  public void init() {
    label1 = new Label("Text field:");
    add(label1);
    text1 = new TextField(10);
    add(text1);
    button1 = new Button("Click here");
    add(button1);
  public boolean action(Event e, Object arg) {
    Object target = e.target;
    if (target == button1) {
      text1.setText("Thank you");
      return true;
    return false;
```

}}

Figure I: The Ex1 Java program

Java example»»[Unfortunately you cannot run Java] Figure II: Including a Java applet in HTML

the standard Filer these

suffixes will be truncated.

This could cause problems if

you copy files directly to the

always keep a backup.

Installing Guavac

archive, do the following:

added to compiled code. Personally I find

raFS to be the more reliable application:

having once lost my entire Web site to an X-

Files crash I'm speaking from experience.

Whichever system you choose though,

All these pieces of software come with

instructions, but I'll just go through the

setup procedure for Guavac, as it's worth

putting in the effort to make it easier to

use. Kaustav Bhattacharya examined

Guavac in the March 1998 issue, but since

then it's been updated with a desktop

front-end, so you no longer have to tackle

task windows and the command line

interface. Having downloaded the Guavac

Copy everything out of the archive

into a new directory on your hard disc.

Drag the FrontEnd1.!Guavac applic-

ation into the same window as

the main Guavac application. This

will install a desktop front-end for

the compiler. (You can also do the

same with FrontEnd2, which does

a similar job but looks slightly

different and doesn't implement the

Internet.



Dependency list option.)

- Create a directory in which you will store your Java programs.
- Create an Obey file called !CSD containing just one line:

Dir <Obey\$Dir>

and save this in your program directory.

To compile a program, double-click on !CSD before dragging the program text file to the Guavac icon. This sets the currently-selected directory to the directory containing the program, ensuring that the class files produced by Guavac are saved in the right place. Otherwise they would appear wherever the CSD was set to (normally the root directory).

Now we're ready to try out our first Java program.

Compiling and running Java

Figure I contains an example program. Those of you who have ploughed through books on BASIC and C will be ecstatic to note that it does a little more than simply print 'Hello World' on the screen. I hereby promise that none of my example programs will do anything as boring as print out 'Hello World'; instead I'll jump straight into the fun stuff you can do with Java: buttons, text fields, menus, scroll bars and all the other visual parts of Web surfing.

You can learn Java as a full-on programming language and get bogged down by example programs that compute multiplication tables and implement basic databases, but where's the fun in that? There's only one prerequisite for this series: enjoy yourself. Java is fun and, if you fail to see that, you've missed one of the fundamental advantages of Java over heavyweights like C++.

Having said that, the example program isn't exactly ground-breaking, but at least it does something - in any case, it's a good place to start learning to compile Java. Type in the program exactly as shown (Java is a case-sensitive language); alternatively, pull the source code off the cover disc. Save this program as a text file called Ex1/java in your program directory, double-click on !CSD and drag Ex1/java to the Guavac icon.

Guavac will now go off and compile your code. It will generate a warning about





Compiling with Guavac, showing throwback in operation. You can safely ignore this warning when you compile Ex1.

> Running our example Java applet in Acorn's Browse

declaring Ex1 as public, but you can safely ignore this. If you have Throwback enabled in *Zap* or *StrongED* you'll get a throwback window, which is useful if you make a mistake: clicking on the error brings up the offending line. The *Guavac* window should say 'Compilation successful'; if not, check you haven't made a typing error somewhere and try again.

If all went well, *Guavac* will have created a file called *Ex1/class* in the same directory as the program. Congratulations! Thrilling as it is, you have just compiled your first Java bytecode file. Now let's see how to include it in a Web page.

Java and HTML

The reason that Java took off faster than a serial bachelor on hearing the M-word is that it can be included in Web pages. You might have heard about another language, JavaScript, that can also be included in Web pages, but the two are totally different. The former was invented by Sun and is partially compiled and referenced from HTML, whereas the latter was invented by NetScape and is included uncompiled in HTML files themselves. We'll stick to Java, because only *WebsterXL* supports JavaScript at present.

We include a Java bytecode file in an HTML document using the APPLET element, which can take (among others) the following attributes:

- CODE="Ex1.class" The name of the bytecode file to be run (assumed for now to be in the same directory as the HTML document)
- WIDTH=200 T

the HTML document) The width of the page space allocated to the applet (in pixels)

Where to get your Java kit

ANT Internet Suite	£99 ex. VAT
WebsterXL	£25 inc. VAT
RISCCafé	£39.99 inc. VAT
Chockcino	£TBA
Guavac	Free
Zap	Free
StrongED	Free
raFS	Free
X-Files	Free

ANT Ltd – http://www.ant.co.uk/ R-Comp – http://www.rcomp.co.uk/ Acorn dealers Not yet available – latest information from http://free.prohosting.com/~chocky/java/ http://free.prohosting.com/~chocky/java/guavac/ http://www.zap.uk.eu.org http://login.eunet.no/~guttorvi/strong.html http://home.augsburg.baynet.de/richard.atterer/ http://www.wonderworks.co.uk/cgi-bin/ wonderwk/tree.pl?name=free/index.html

Java example

URL

file:/ADFS::HardDisc4/\$/Articles/AcornUser/Java1/Disc/index.html

Image: Control of the state of the state

HEIGHT=200

The height of the page space allocated to the applet (in pixels)

There are also attributes to set spaces above and below the applet, give the applet a name, load an applet from a different URL, and so on. However we'll stick to simply running the applet in our document with a fixed space.

A typical HTML document for running the Ex1 applet is shown in Figure 2. To see it in action, simply put the HTML file (called *index/html*) in the same directory as the *Ex1/class* bytecode file and doubleclick *index/html* to load it into your browser. Assuming your browser can run Java, you should see the results of your hard work (if your browser is not Javasavvy, the apologetic text between the APPLET tags is displayed).

Welcome to the world of Java. Don't you feel like a totally new human being now? Exactly.

Java 1.0.2 vs Java 1.1

Since the series continues next month with an in-depth look at Java, I'd better clarify in advance the main differences between Java 1.0.2, Java 1.1 and Java 1.2. At the moment only Java 1.0.2 applets can be run on RISC OS, though work is progressing on Java 1.1 and 1.2. This isn't a huge problem, as Java 1.0.2 is still regarded as a 'lowest common denominator' and Java 1.1 and 1.2 are backwardly-compatible with this version (though bits of 1.0.2 are 'deprecated' and may be dropped from future standards).

Java 1.1 is the current standard, and Java 1.2 will be the next as it's stable and has a number of security enhancements, so if you're learning Java from scratch you should look at Java 1.2 or at least 1.1. On the other hand, if you were to learn Java 1.2 from this series you wouldn't be able to run your programs on RISC OS: for that reason I'm sticking to Java 1.0.2 until a 1.1 or 1.2-savvy JVM is available. As *Guavac* handles both Java 1.0.2 and Java 1.1 you can create bytecode files for the later versions of Java – you just can't run them on RISC OS yet, although you can always port them to a PC and try them out there.

I mention this because even our simple first example contains a Java 1.0.2 feature that has been deprecated in Java 1.1 (the event handling system has been radically changed, for those who are curious). For now, though, don't worry about that: later on in the series I'll tell you how Java 1.1 works so that you can start creating non-deprecated code as soon as we get a 1.1-friendly JVM on RISC OS.

Out of time

Tune in next month when we'll take a more detailed look at the buttons, labels and text fields in our example program and make a quick stab at some other Webfriendly Java features like radio buttons and check boxes. Until then, make sure you tell all your friends you're AU learning Java. Remember, it's cool.



- Polygon by one side
- Line normal to circle
- Perimeter calculation
- Enhanced chamfer tool
- Symbol/template viewer
- Enhanced text dialogue box
- Change dimension accuracy on the fly

RELEASE 7e READY NOW ! UPGRADE AVAILABL

faith and are subject to change without notice. We Process all orders immediatly, but suppliers do sometimes keep us waiting. Goods are guaranteed but are not supplied on approval. Returns and cancellations can only be accepted by prior agreement and there may be a restocking and administration charge A full copy of our terms are available upon request. E.&.O.E 7th October 1998

Merry Eliristmas

Thursday

Saturday

erms: All products, prices and specifications are offered in good

Friday

9.30 - 7.30

9.30 - 7.30

9.30 - 5.30

(Creating AUCD4)

Acorn Cybervillage

Acorn Arcade

Emulators christmannete collection

SIO olisc

Stephen Scott reveals the story behind the latest cover CD...

Acorn Boot sequence - the first release

Creating AUCD4

Acorn User CD ROM Problem Summary

This panel details bugs, omissions, and upgrades of software on the CD-ROM as of 30th October 1998. Those of you with Internet access who want a more up to date list can find it at http://www.acornuser.com/aucd4.html

Boot Sequence:

Many users have had difficulty following the supplied instructions, so here is a clearer version. You'll need about 42Mb of hard disc space, and knowledge of the fact that holding down the Shift key actually moves files from one location to another, without making copies.

- Create a new directory, called NEWBOOT.
- Copy BOOT/ARC from the CD-ROM into NEWBOOT.
- Ensuring !SparkPlug is present, open BOOT/ARC.
- Drag the contents of BOOT/ARC into NEWBOOT.
- Create a second directory, called OLDSTUFF.
- You should now have two new directories; an empty one called *OLDSTUFF*, and another called *NEWBOOT*, which contains *BOOT/ARC*, *IBoot* and 11 directories.
- With the root (\$) directory on screen, double-click on OLDSTUFF to open it.
- Shift-drag everything (except NEWBOOT and OLDSTUFF) into OLDSTUFF.
- Your root directory should now contain just the NEWBOOT and OLDSTUFF directories.
- Open NEWBOOT. Shift-drag everything inside NEWBOOT (except BOOT/ARC) to the root directory. This will move the new boot sequence into its proper place – the root directory of the hard disc.
- Reboot. After a little while you should now find yourself running the new *!Boot.* You will then need to set up your original configuration using your old copy of *!Boot.*

A little *!Boot* bug was discovered by one reader concerning Risc OS 3.1 users, which appears to crash machines. The line is in *!Boot.Utils.BootRun* (one of the I made this statement in the belief that someone else would do this subsequent disc. It was quite a surprise then, to have been given the chance to have another go at it, and for the 200th issue no less.

This article will attempt to compress five or six weeks of solid work into a few pages. It serves as an excellent case study to accompany my recent short series on CD writing solutions for the Acorn platform. Those of you expecting this article to be a re-hash of the previous one should know that many more lessons have been learned as a result of producing the disc. These lessons will prove useful to users hoping to produce cross-platform CDs.

As well as recounting my experiences, I have also produced a summary of the errors and omissions discovered after the disc was mastered, both by myself, and by users alike. This includes the rather worrying admission that some of the disc content cannot be accessed on non-Acorn machines. I will explain this later.

The beginning

Having just been released from the shackles of higher education, and awaiting graduation, I returned to IDG Media last July for yet another summer placement. The only difference being that, at the time, I had an uncertain future beyond the summer. Of course, things are much different now.

Whereas last year, I started work in July, it was not until August this year that I was given the task of creating this years disc. Being for such a prestigious issue, I couldn't refuse. Yet, my immediate concern was the lack of time – about five weeks, half the time I had available before.

I was starting to fear that it couldn't be done. Karen Peach (our former deputy editor) thought I was barking when she saw me accept the task. Yet, in my mind, nothing can be that impossible. Could it?

Several technical problems came to mind. The first was that, initially, I had no CD writer. Secondly, the only Acorn machine with a SCSI card to connect the CD writer, a Risc PC 600, possessed a 400Mb hard disc. Since you need about 1.5Gb to hold the CD contents, and the resulting image file (with some breathing space left over) my storage area was about as much use as a fur coat in Indonesia.

However, there were two other Acorn machines, both A7000+ models, which possessed good size hard discs as standard, but no §CSI cards. All the machines however, were fitted with The new Acor Multimedia Movies, clip art Sounds and images Games Syndicate, Artex and Destiny demos

network cards, Acorn *Access* and *Omniclient*. And with access to IDG's huge FTP server, I thought I had all the necessary resources with which to complete the task.

More luck came in the form of my recent CD writer review, so I now had access to the review drives, and the latest Acorn software. Last time, Acorn's *!ISOForm* formatter was used to build the image, which was subsequently transferred via FTP to a Macintosh fitted with CD-R drive to produce the gold master. This year, an Acorn disc would be produced on an Acorn.

And so the scene was set, and I duly posted my submission pleas across the Acorn newsgroups. Soon, they came flooding in, by e-mail, FTP, and occasionally, by post.

There were the inevitable problems, such as those who asked me to visit their websites and download their software, when my reuqest specifically said otherwise. This was a time-saving measure, to help me spend more hours on actually producing the CD, rather than constantly opening up *!Fresco* and having to put up with download times as fast as a tortoise plodding through treacle.

Then there were those who suggested I should hang on until they finished their latest version, which never materialised, meaning having to scrap directories set up for their software. I should hate them



entering dangerous territory.

Firstly, these submissions may not work on non-Acorn machines. And secondly, how reliable was Acorn's CDFS in appreciating these image filing systems?

I decided to go ahead with it, for it would have been too time consuming to have to alter filenames to fit the imposed ISO 9660 restrictions on CD-ROM production. Both them and I prayed that it would work.

With all these events taking place, there was still the small matter of the interface. Although comments were positive about last years design, people had trouble actually looking for software, due to the large capacity of such discs. The second cover disc from 1996 used an HTML interface, so I chose to partly return to that method, with another *HyperStudio* interface in tandem. You could then either use both, or, if you were using a PC or Macintosh to access the disc, the HTML interface, with the help of *Internet Explorer* or *Netscape Navigator*.

As you can tell, the HyperStudio front end is far more simplistic than last year's, which was adorned with elaborate backgrounds and illustrations. I stuck to three colours, black to grey, Phoebe (or Phoenix) yellow, and white. The black and grey would be the background, while the latter two colours would be used for typography and icon design.

All of the icons were designed using *Artworks*. I used the Object Linking and Embedding (OLE) feature within HyperStudio to edit the icons and their positions within each stack to speed up working. I made a template stack to save time, dropping the appropriate linkages in so that everything worked as it should.

There were still other things to consider during the design and production of the CD, such as the disc artwork, and the full page article. And then there was the writing of the HTML pages to catalogue every submission. This ultimately became an unattainable task, due to the sheer number of entries



Eventually, the submission deadline came and went. Some submissions came in over the August Bank Holiday, for me to deal with in the week that should have been spent producing test writes and correcting bugs. Some came even later, such as the Eternal Destiny and Iron Dignity demos, because the original uploads had become corrupted. I

first files to be run on startup) which runs HOn:

/Boot:Utils:HOn

Although only a couple of lines long, its execution completely crashed the reader's A5000 and A440/1 machines. The problem can be fixed temporarily by commenting out this offending line, by placing the vertical bar I at the beginning of the line.

Easter program:

This program has been upgraded since its inclusion on the disc, and cures the problem concerning the availability of version 0.02 of the TinyStubs module, which the software requires. The new version is available from author lain Truskett's website at *http://koschei. shada.com* as well as our website.

AltTab:

This program has been upgraded by the author, Christopher Martin, and is available from our website.

Careers Workshop Software: The quoted prices in the helpfile for Robert Werry's excellent software were incorrect. The correct UK and Australian figures for the RISC OS version are £60.00 (\$160), while the Windows version costs £65.00 (\$170)

Running the disc on a PC:

This problem is explained more fully in the accompanying article, and also on the Acorn User website. In simple terms, the forward slashes used under RISC OS to separate DOS extensions from the filename, do not convert to full stops on PCs and Macintoshes. Consequently, any such files will not work on these machines.

A patch for Linux version 2.0.35 has been written to workaround this problem. It does not apply to Linux 2.1.xxx. The patch can be downloaded from http://www. reinhouse.demon.co.uk/soft/ patch-cdburn.diff.

Education Directory/ Cognitive Software:

Opening this directory appears to crash most Acorn machines. It is apparently caused by a Basic file within the *!COGSYS* directory, which attempts to perform a filing

Christmas 1998, decorn to first release

Items include: IBoot sequence - the first release

> Websites Acorn Cybervillage Acorn Arcade Emulators The complete collection to relive the old days

> > th issue cover CD

gazine for further details Media/Stephen Scott 1998

> really, but then there is my Jaw Wars game, promised to the world about six months ago, and untouched since.

Long filenames

Then there were the websites to put onto disc. Because web files require the */htm* or */html* DOS file extension, this meant the actual filename could only be five or six characters long, otherwise RISC OS would truncate the name, destroying the URL links made within the website. Some people complied, while others decided to use image filing systems, such as *!X-Files* and *!LongFiles*. This was an unproven area for me, and for them as well, so for two reasons, I would be



The HyperStudio interface

Free Accs To submit a free ad to Acorn User complete the coupon on page 70. 25 words maximum per ad.

To submit a free ad to Acorn User,

- Wanted: 2 teletext add-on units A420, 4 Mb RAM, 20 Mb HD, A5000 RISC OS 3.1, 4Mb RAM, Wanted for young musician: for BBC B. BBC Masters, BBC colour monitors, hard discs and printer cables. Please call 01703 261921 (Southampton).
- Wanted: Acorn A4 portable with 4Mb RAM & HD. Can swap for one or two A3000/A3020 with 4Mb, monitors, RISC OS 3 and SCSI cards. Phone Mike on 01953 681 684 after 6pm (Suffolk)
- LOOK! Three A3020s and eight A3000s for sale. VGC all with 4Mb RAM, monitors, RISC OS 3, SCSI cards, manuals and software: A3000s: £150 each; A3020s: £250 each (ono). Phone Mike on 01953 681 684 after 6pm (Suffolk)
- A3010, 4Mb, 509Mb HD, colour monitor, 2x CD-ROM, Citizen dot matrix printer, lots of software, perfect working order. £275 ono. 0181 521 9386 Tel: (Walthamstow, London)
- Risc PC 600, 4Mb RAM, 1Mb VRAM, 210 HD. All manuals, PRMs, BASIC guide, mags, RISC User vols, printer: £250 ono. Ring Steve 01375 857571 (Thurrock)
- Cumana Oscar double speed CD-ROM, with all drivers, cables, Hutchinsons • WANTED: 1x mouse for A5000 Encyclopedia, Acorn User CD-ROM 1, Cumana photo album and many more, all boxed with instructions and in superb condition. Cost £350 new, only £100. Tel: 01438 718507
- BBC Master, two 5.25in disc drives, mono monitor, Wordwise Plus £100. Tel: 0161 480 5818 (Stockport, Cheshire)
- Five Ethernet expansion cards including cables, T-pieces and terminators. £45 ea. Morley SCSI exp. card with CDFS, external CD ROM and external SAS tape backup + cables £130. Tel: 01268 734215
- Acorn multimedia expansion unit, A5000/4000 type case, housing SCSI CD ROM and hard drive + audio mixer board £135. Syquest SCSI internal drive with 5X 270 discs housed in an RPC 2nd slice £100. 01268 478347
- A3010, 4Mb RAM, 80Mb hard disc, AKF 52 monitor, manuals, box, BJC4000 colour printer, software, v.g.c. £250. Call 01706 817570
- Acorn systems software and parts, both 32 and 8 bit hardware from Electron and BBC to A3000 and A3020. Also software available. (Wirral) 0151 637 0993

- Philips stereo monitor, MIDI interface + Sibelius 6 superb music software, Style, + others. Includes tower trolley. £300. Tel: 01235 760164
- Free! Acorn User from 1988 to 1996 inclusive, except Feb 1995. 1988 and 1989 in binders. Recipient pays carriage or collects. Tel: 01383 720656 eves. (Fife)
- Visually impaired octogenarian, using faithful but ailing Master Compact, seeks working replacement, same model. Dennis, 01482 346812
- EasiWriter Pro (Word enabled); £50 ono. DataPower (version 1); £40 ono. Prices include postage. Phone 0131 447 8624 or contact kosie@zetnet.co.uk
- . ProArtisan2 CD £15, Acorn Advance £10, 510MB SCSI drive with 6 removable cartridges £60, Phone 01543-491867 (Staffs)
- . A5000 4Mb/120Mb. Defect on one sector but quite useable. AKF18. FPA, ColourCard, 16bit SCSI, Irlam colour hand scanner. £300. Artworks, Impression Publisher Plus, Acorn Cv4. Offers.Dave, 01823 673001, Devon
- (original dying). AND/OR userport module. Contact: • MidnightTrooper@hotmail.com or Lewis: 0181 508 4311.
- . A5000 LC, AKF18 monitor, vgc. All manuals included. Loads of software (Simon the Sorceror etc etc). £300 ono.Tel: 01277 232577 (evgs)
- 4-8Mb RAM upgrade for A310/410 £70. 1Mb VRAM £20. PC-Card for RiscPC SX33 £35. Acorn SCSI card £50. USR 28.8 modem £35. Alan 🔘 on 0151 677 9585
- CC/Wildvision Eagle M2 sound/video capture card £175. Also back issues to March 1994, O most with disks - offers. Tel 01707 339296 evenings. (Herts).
- For sale: StrongARM Risc PC, 2 slices/4 slot backplane, APDL/ICS IDEa EIDE interface, 50MB RAM, 3.2GB harddisc, 105MB Syquest removable harddisc, 2x CDROM, 100MHz PC co-processor, latest • Boot, loads of software inc CD-ROMs, DaVinci 90, etc. £800 ONO. ian.scott@zetnet.co.uk or 01388 762443.
- StrongARM RicsPC, 24mb, 1Gb, . 586 Card, RiscOS and Win95 Software Canon Colour BubbleJet . Printer, Modem, Cost Over £2500, £1295 ono Tel: 0191 265 5941 email :ango@argonet.co.uk

- 200Mb HD, Taxan 795 monitor, Hand scanner, Canon LBP4-Plus LaserDirect with cassette tray. Publisher, ArtWorks, Games, Loads more software. Manuals. VGC, Bargain @ £500 ono. Tel: (01905) 351386 or e-mail: T1MO@hotmail.com
- For sale: Acorn AKF 50 multiscan monitor, stereo speakers & Canon BJC 70 portable colour printer (with several extra ink refills). All in excellent condition - £250 plus postage.Tel: Trevor on 01579 347303.
- For Sale: Risc PC600 no monitor, 9MB Ram, 400MB HD, PC486. Software including Impression, Artworks, Revelation, Fireworks and lots more apps & games. £375 ono. 01279 871519
- For Sale: PC card DX4 100 120 ukp; SCSI 2 card - 70 ukp; Impression Publisher - 45 ukp; ArtWorks 45 ukp; Composition -35 ukp; Pro Art 24 - 35 ukp. Tel. 01648 300535
- . A3010 4Mb/80Mb/UserPort +Manuals +Mouse +Games £150 ono, Taunton (01823) 490322
- Wanted software for Acorn
 RISC PC600, Strongarm, Sibelius7 Archimedes suitable for children aged 4 to 7. 0151 677 3818
- RiscPC, Strong Arm upgrade, 32mb Dram, 1mb Vram, 1.2Gig HD, CD Rom, Software includes Fireworkz Pro. 486DX4 100 Second processor. £1000 ono Please call David on 0115 910 5329.
- 4 Meg RAM. 40 MEG Hard Disc. AKF 18 Monitor. Assorted software. E-mail: steve.t@argonet.co.uk
- WANTED: Any PC card, associated software for RISC PC, Windows 3.1+ and Excel. Contact Peter by e-mail: pjd@arcade.demon.co.uk
- Sibelius 7 professional music scoring software, used by top Hollywood film composers. Boxed & manual. Worth £1000 - sell with complete Acorn system for £800. (will split). Tel: Rob on email: • 01225 423286 OF au@robh.freeserve.co.uk
- RISC PC600, Strongarm, Sibelius7 v3.5 (licensed, worth £700), MIDI interface, HD-420MB, RAM-32MB, VRAM-2MB, 33MHz 486, 16bit sound, CD-ROM, AKF60 monitor. £1050, Steve, 0113 2264912 (Leeds).
- For Sale: Notes, X-Fire, Enter the Realm: stlg 6 inc postage (X-Fire won't work for me) Tel: Chris on 01642 815091 (Middlesbrough)

- Sibelius 6. Will pay second-hand price. Also wanted, A4000 MIDI interface. Tel: Chris on 01642 815091 (Middlesbrough)
- 0 A4 Portable 60MB drive, 4MB RAM, £300. C/C++ (SKB78), £40 inc P&P. Both ONO. Cambridge (01223) 561190
- A5000, 8MB RAM, SCSI1 with POWERROM, 2xCDROM, Viper 150 Tape drive + 9 Tapes, Ether3, AKF18, 1.6GBHD, 400MBHD, Linux installed, £395, tel Chris: 01285 713514
- GAMES! Drop Ship #3.00, Grevious Bodily 'Arm #3.00. Phone Dave (01926) 435189 Or Email dflynn@intstudios.co.uk
- Acorn RiscPC 610, 17meg RAM, 420meg hard drive, CD-ROM, PCcard, 16-bit sound, keyboard, mouse. Excellent condition. NO monitor included. £425ono. 0151 677 9585
- StrongARM Risc PC 600, 203 Mb HD, 5 + 2 Mb RAM, 17" colour monitor, Turbo Driver, Midi Interface, £700 ono. Tel 01691-780452 (Oswestry)
- v3.5 (licensed, worth £700), MIDI interface, HD-420MB, RAM-32MB, VRAM-2MB, 33MHz 486PC, 16bit sound, CD-ROM, AKF60 monitor. £850 (will split), Steve, 0113 2264912 (Leeds).
- Risc 600 3.5 10MB 2MB Video . 516MB HD 8XCD Rom drive Backplane for two expansion cards sound mixer £490 phone Jerry 01480 475730 or E-Mail ghn@argonet.co.uk
- A4000 + Cannon Printer. Excellent Value. Impression Style, Eureka, Datapower, Autograph and lots more. Games include: High Risc Racing, Starfighter 3000, Cannon Fodder, Virtual Golf, Battle Chess all boxed, + masses more. £250 o.v.n.o. Telephone Elizabeth on 01409 281 377.
- RPC700, 26MB, 850MB-HD, with PC-Card, CD-ROM, Acorn-C/C++, PRM, various software and books, Many Magazines. £950. Offers welcome. Phone Robert, Work: 01279-402135, Eve: 0181-9266760.

There are more Free Ads on page 56

felt that *Destiny* deserved a wider audience, and once again took the risk of leaving it unarchived on the CD, as I did last year.

Image matters

The final burn to the gold disc was the moment I had dreaded. By this time I was nowhere near as enthusiastic as I was at the start of the project. I just wanted it over and done with. Couple this with the stress of wondering whether the master would burn successfully first time, and you end up with, at best, a headache, and at worst, feeling suicidal.

For mastering, I used Warm Silence Software's *!CDBurn*, because I turned to it more often than the other solutions. The ISO 9660 Level 1 standard dictates that all files must be in upper case, with only the numbers 0 to 9 and the underscore character to be used. Also, you could not have directories nested more than eight levels deep.

CDFS provides some relief by allowing filetype extensions, and use of the ! for applications. There are other flavours of the above ISO standard, but these would not perform at all well under most Acorn machines, so I chose Acorn format with CDFS extensions, believing that ISO Level 1 was included within it. This turned out to be a big mistake for PC and Mac users.

Because CD-ROM is a write-once technology, any data that is to be sent to disc must be perfect. No corrupted data, no 'excessively nested directories, no Internet or e-mail programs suddenly activating half way through the mastering process to render the disc useless. To make data perfect, you need special software to do it for you.

With the content totalling 527Mb, I needed this much in hard disc space to create the image file which would ultimately be burned onto gold disc. The problem was that, at first, I couldn't find this space. I then began what was to be the worst experience in the whole project – an all night session with (cue those violins) only a packet of cheap crisps from the security guard to keep me going.

This whole night was spent



The inclusion of the brand new *Iron Dignity* demo was one of the highlights of the CD-ROM

performing the computer equivalent of musical chairs – using one machine to produce the image file, with the data being transferred at the same time across the small network to a machine with enough storage space for the resultant file.

Looking back, the whole chain of events is too confusing to try and explain in full here, suffice to say that the night was not without incident, such as hard disc errors preventing the image file from being created, quoting one example. I then had to transfer the whole CD directory to another computer, and hope that things improved the other way round. Eventually it did, but it took me about 8 or 9 hours before I could begin to burn the gold disc.

By now, some staff were horrified to have discovered that I had been up all night. While the burn was taking place, Pam Turnbull practically pushed me out of the door to go to the Little Chef just down the road, since I hadn't eaten for so long.

On coming back, I found that the mastering had failed yet again. The reason this time was a *buffer underrun* error – too little data was being sent to the disc to make it work properly. So, I started again, for what was to be the last time, making sure I had selected the lowest writing speed possible. It was the longest hour I have ever had. There would not have been another chance.

Slashes and periods

Thankfully, the whole gruelling session was at an end, and the disc was working properly. The project was finally over. Well, at least it was at the time. For it was to be a month later that I discovered the disc would not work properly on a PC or Macintosh.

Those of you who use these machines and have tried opening any files ending with DOS extensions will know what I am talking about. *!CDBurn* had hardwired the forward slashes (/'s) normally used by RISC OS to separate filename extensions, onto the CD, instead of altering them to full stops. Since non-Acorn machines rely

on the full stop and nothing else, any files with this character would not open.

I found this occurred because of *!CDBurn's* rigid obedience of ISO 9660, CDFS and RISC OS filing conventions. I had selected *Acorn CDFS* from !CDBurn's Format list as the type of CD I wanted to make, falsely believing that the ISO standard was embroiled enough within it to make a satisfactory triple platform CD. But, after much correspondence action on the CD, hanging the machine in the process.

You can bring a halt to it by pressing Alt+Break and clicking the Stop icon. The freeze will not occur again in the same session, unless you specifically double-click on *ICOGSYS*, which should not be doubleclicked on anyway. Just use *ICOGPROGS*.

The author, Dr S.H. Curry, has provided a small Obey file which consists of the following two lines:

Filer_Run CDFS:\$.EDUCATION.!CogSys

Filer_Run CDFS:\$.EDUCATION.!CogProgs

Enter these lines, saving the file as an Obey file. With the CD in the drive, run the Obey file, and the Cognitive Software Suite should open successfully.

Incidentally, three of the applications within this huge resource didn't make it onto the CD. All that remains are their application shells. The offending items are *ICARTOONS*, *IPAL* and *IPELMANISM*. These files can be downloaded from the Acorn User website as archives. Just merge the contents with the *ICOGPROGS* directory (if you have moved the resource to hard disc), and all will be well.

ArcQuake Demo:

The archive in the ARCADE.ARCGAMES directory appears to be corrupted. However, another version, ArcQuake6, can be found within the !AACADE folder on the root directory of the CD. This version is complete, and merely requires an appropriate game PAK file to play the game. Please do not contact me about how to configure ArcQuake – I did not write it, Peter Teichmann did. His e-mail address is teich-p@rcs.urz.tu-dresden.de

IPGPlock, INuke, IRNDpass and IAutoCrypt:

These four programs should have been included on the CD, but were not. The first three are on last month's cover disc, while !AutoCrypt and later versions of the other software can be downloaded from author Nat Queen's website at http://web.bham.ac.uk/N.M.Queen/.

Christmas 1998 delion the list release

Basil, RFSFiles, RFSApps,

Document StrongED mode: My description of these programs in the UTILS/HTM file left a lot to be desired, according to author Steve Drain. The correct descriptions are as follows:

- Basil Basil provides SWIs to load BASIC libraries into the relocatable module area and to use them in BASIC programs, so that only one copy of the code is needed for any number of applications. It also supports libraries held in memory by other programs, such as Basil modules and RFSFiles.
- RFSFiles provides commands and SWIs to add and remove files in Resources interactively without having to produce a special module. It also provide facilities for sharing such files and initialising data to help use common resource files.
- RFSApps Use principally with RISC OS 3.60 or later. The module should reside on earlier versions but only applications added with *AddApp will be removable. Includes a module and utility versions of the commands.
- Document A StrongED mode to display application document files. Document can be used with StrongED versions above 4.50 to help a user to follow sectioned text by providing context colouring and folding. In other editors the tags used are not too intrusive and can easily be stripped.

Interface:

There is a broken linkage in the *MUSIC* section of the *HyperStudio* interface. Clicking on the *HTML* button should load the *MUSIC/HTM* file in the *MUSIC* directory of the CD. However, it instead links to a now deleted *MUSIC/HTM* file in the *MUSIC.DEMOS* directory.

A simple workaround is to click on the Directory button just below the HTML button. Then just double click on the *MUSIC/HTM* file that is present somewhere in the Filer window.

Websites and downloads

Acorn User CD Support page: http://www.acornuser.com/ aucd4.html

Warm Silence Software: http://www.wss.co.uk/

ICDFix: ftp://ftp.comlab.ox.ac.uk/tmp/ Robin.Watts/CDFix.zip with the author of the program, I found out the hidden truth of cross-platform CD-ROM authoring, which I can only explain briefly here (check out our website for more details).

In theory, a PC/Mac CD-ROM is very easy to make. Just select ISO 9660 Level 1 as the mastering standard, because it is the oldest and most supported. Forget the other fancy ones such as ISO Level 2 (which allows longer filenames) or *Joliet* (Microsoft's longer filenames and no restrictions on nested directories) – Level 1 is the best choice for maximum compatibility.

The ISO standard is very specific in how files are stored on the disc. But it does allow provision for the different methods of file handling that each operating system employs. In the case of our machines, it is CDFS which jumps in to give the disc some usability.

Any filename containing a full stop would be converted to a forward slash to enable the file to be used. Files beginning with the underscore character are interpreted as Acorn applications, which can then run direct from disc. CDFS is also expected to map any DOS extensions at the end of filenames to equivalent Acorn filetypes. For example, a file ending with the DOS extension .GIF should be interpreted by CDFS as /GIF, which is Acorn filetype &695, and update the file icon accordingly.

Unfortunately, this last feature is bugged within all presently available versions of CDFS. Instead, such files are shown with data icons, unusable from disc. This forces the user to move the file to hard disc, and filetype correctly. Not a very practical way of using a CD-ROM.

When I created both this year's and last year's discs, I was not aware of these problems, because I had a copy of the freely downloadable CDFS patch utility *!CDFix* (the download address for which can be found at the end of this article). In short, *!CDFix* filetyped the content of the discs properly, giving me the impression that the disc was truly cross-platform. The reality was that those users who did not have *!CDFix* installed would have not been able to use the disc

properly.

Since *!ISOForm* formats discs to ISO Level 1 standard, the problem that occurred on last years disc was never apparent. But by selecting the more native Acorn CDFS format for the latest disc, any file containing a forward slash becomes unusable on a non-Acorn machine.

From this dreadful experience, I can say that the best way of producing a triple-platform CD is to format the disc to ISO Level 1 standard, and somehow include a copy of *!CDFix* to run automatically on bootup. If and when Phoebe (or Phoenix) is released, the totally rewritten and bug free edition of CDFS will prove beneficial, if triple platform CDs are ever to become more successful.

Conclusion

I have placed a lot of emphasis in this article on the nitty gritty of CD writing. The truth is that it is an area fraught with danger, especially in a commercial environment such as ours. If your notion of CD writing extends to merely backing up your hard disc, then you can expect little hassle. If your work is being copied thousands of times at great cost however, you really need to test, test and test again. I stated this in my past article, but succumbed to disaster where I had least expected it.

The adjacent panel gives a run down of some other problems tied to specific pieces of software included on the disc. Many are not serious, but the filename translation problem has been solved for users of Linux, by the kind submission of a patch program to allow the disc to be used successfully. If anyone can provide a similar patch for PC and Macintosh users, then it would be much appreciated. By the time you read this, the website should have more information about CD writing on the Acorn than any of my recent articles could allow.

This years cover CD was by far the hardest and most stressful, especially at the end. But a lot has been learned from the ordeal, and it will stick in my mind for a long time to come. And strangely enough, I do get immense enjoyment out of producing such discs, because the reward justifies everything. Whether I would be given the task again remains to be seen. Whoever does it next year, I wish them good luck.

Thanks to everybody who contributed towards the CD in every possible way, both before, during, and after publication, including Steffen Huber, the author of CDBurn.



My all night mastering session had taken its toll by morning

· reasons why

ST Get Online Pack

This special offer gets you online for the first THREE MONTHS to ArgoNet for only £24.95 including access software, if required, for Windows, Acorn or Mac.

Get Connected

An award-winning pack containing external 33.6K voice/fax/data modem and access software for Windows, Acorn or Mac. With THREE MONTHS online to ArgoNet the complete pack is only £79.95.

Contains everything needed -128K external ISDN terminal adaptor, access software for Windows, Acorn or Mac and THREE MONTHS online to ArgoNet for only £199.95.

ArgoNet Internet Services

ArgoNet's Premier Service for home and business users includes 10Mb Web space and 5 e-mail addresses. For schools, the Education Online Service includes a free school domain, unlimited Web space for your school's use and unlimited e-mail addresses.

A subscription to ArgoNet includes full use of ArgoSphere the award-winning Web site for children, unlimited access with 100% local call coverage and free phone support. Subscriptions for dial-up modem or ISDN access are available monthly, 6-monthly or annually from only £10 (exc. VAT) per month.

BETT'98 INTERNET AWARD & PC Guide 1997 Award for THE BEST MODEM of THE YEAR

h Modem Trade-in Deal

ArgoNet accept any modem, working or not, in part exchange for a new external 56K voice/fax/data modem. The K56flex modem with stereo headset and lifetime guarantee is £99.95 without a trade-in or with a trade-in is only £79.95.

5 rd Surf at Speed Pack

Complete with external 56K voice/fax/data modem, access software for Windows, Acorn or Mac, stereo headset and THREE MONTHS online to ArgoNet. Only £109.95.

ArgoSphere for Children

ArgoSphere is ArgoNet's awardwinning Web site designed for children aged 3 and older to use offline. This safe site, containing a wealth of educational activities for home and school use, can be explored FREE at www.argosphere.net.

for the **7**th call free phone:

for friendly help, information and to order



Argo Interactive Group plc, FREEPOST PT795, Chichester, PO19 2YZ e-mail: info@argonet.co.uk web: www.argonet.co.uk Prices include VAT, UK carriage & packing, unless stated otherwise. E&OE Portable finance

Portable Management

Mark Taylor takes a look at a range of finance packages from Palmtop

don't know about you but one of my biggest problems is keeping track of my finances. I'm forever ringing the bank for my balance or taking trips to cash machines to print out a mini-statement as I've forgotten to write down what I've spent and what I've paid in.

To help people like me, Palmtop now offer a range of finance programs for the Series 5; *Money, Finance Calculator* and *Expense Manager* are all designed to help users keep on top of their finances and in my case save on phone calls (or should I say my parents' phone bill)!

Money

Money is described as being the fast and easy way to keep track of your finances. The package is based on the *S3 Money* application and users of this version can import their files into the S5 version.

As with all new Palmtop software, *Money* is supplied on CD. Instructions for installing the program are included for all the main operating systems including RISC OS (providing the user has PsiRisc or an equivalent). Once installed and loaded the program brings up the main screen containing tabs to access the 'accounts' (default) and 'categories' screens.

From the accounts screen you set up the details of all your accounts (saving,

current, credit cards etc), including the account number, interest rates and current balance. As well as entering details for actual accounts, you can also set up 'virtual' accounts to keep track of the cash in your wallet, any liabilities, and to handle VAT transactions if required.

The accounts screen is a handy overview of your current financial position, showing the amount in each account and your net worth.

As soon as you have entered details of more than one account, the two tabs change to four with the addition of 'book' and 'scheduled'. This is a reminder that *Money* is, in fact, a full double entry bookkeeping system.

Once you have set up your accounts, clicking on any account brings up the transaction book. Here you enter details of what you have spent and paid in. Entering a transaction is easy – click on the 'new transaction' button, enter a description, amount and category and: hey presto! If there is no category suitable for the transaction, selecting the 'new category' option brings up the 'create category' screen. This saves you the hassle of having to exit the transaction in order to do this.

Transactions can either be 'pending' or 'reconciled', allowing you to double check your Money accounts with that of

TRIPS	Expenses T	уре	\bigvee	Client \	/ Claim	Claims
Add	Date Description	Туре	Client	expenses Tax	Amount	Claim
Edit	06/06 Pocket Money US		Psion	17.5%	-1500.00 🖻	ass Conference
Delete	06/06 Travel in US 06/06 Taxi Airport	Travel Travel	Psion	17.5% Km 17.5%	230.00 🐢 24.00	June Conference
Preferences	06/06 Tax Free shopping 06/06 Flight to Florida vv	Misc Travel		17.5%	599.00 1048.00	⊠ June ⊠ June
Report	06/06 Conference 16/06 Taxi to hotel	Misc Travel	Psion	17.5% \$ 17.5% BP	25.00 14.50	Conference
Graph	16/06 Diner 16/06 Lunch in Eurostar	Food Food		17.5% BP	33.75 48.00	Trip to Lon
(7)	16/06 EuroStar to Londo 16/06 Taxi to Railway S	Travel		17.5% 17.5%	644.75 23.00	Set Trip to Lon
1.			7.32 AL	located 3671.	81 total 4079.	13

Expense Manager in action

36

Acorn User Christmas 1998 http://www.acornuser.com/ your bank/credit card statements. The program also allows you to search previous transactions.

It is possible to split transactions between two or more categories; this is useful in many situations. For example, if you went to ASDA and spent £50, but broken down into £25 on food, £10 on clothes and £15 on petrol, you could enter one transaction and split it between three categories rather than entering it as three separate transactions.

Calling up the 'categories' window displays all the information on each category, including the name, type (income/expense), and amount. Clicking on a category brings up its transaction book.

The 'schedule' window allows users to enter future transactions or set up direct debits/standing orders. Scheduled transactions are set up in a similar way to other transactions except that once you have entered the details, another window appears allowing you to specify the starting date, how often it repeats (if it does) and the finishing date. A warning is given before any scheduled transaction is processed, allowing you to postpone or cancel it if necessary.

The program also allows you to budget a set amount per month for each category. This helps you forecast your finances long-term.

Money allows you to produce numerous reports showing the health of your finances. Reports include 'net worth', which gives you a snapshot of your financial position, 'profit and loss', which gives you a feel of your expenditure in a given period, and a budget forecast, which predicts your finances over a specified timespan. Each of the reports can be exported as a text file, plotted as a graph or printed out. Layouts of reports can be


Money	Accounts Categories Boo	ik
New	Account Type Description Barlays Bank Barclays Bank Bonds Liab, VAT	Worth 936.50 2,848.25
🧭 Edit	Bonds Liab. VAT Cash Cash Money in my Wallet Savings Asset Savings account Visa card Visa Credit Card	2,848.25 213.36 1,500.00 (122.50)
Report		
(D)	Net worth:	5,375.61

saved and recalled later, enabling you to bring up your favourite reports easily.

THE BANK OF ENGLAND 199

Sandan Tarth Carlina Carlos Fran BANKy BNGLAND G. m. Gill

Money can also handle foreign currencies. Once a foreign currency has been entered, transactions on any account can be entered in any one of a number of foreign currencies. If you alter the exchange rate the package will automatically report a fluctuation and allows you to enter it in the transaction book.

VAT tracking is another feature of the program. Once VAT support has been turned on, you need to create a VAT account. You then select categories on which VAT is payable, enter the VAT rate and the VAT account. In future, when transactions are entered in these categories, the program will automatically 'split off' 17.5% to the VAT account.

The package also allows you to import and export data in the QIF standard. QIF files are supported by many PC packages including Microsoft Money and Quicken.

Money is an excellent program which has enabled me to keep my finances in a much more organised state. The only problem with it is that you must remember to enter the transactions into Money, so if you have a memory like a sieve you may still be in trouble. Very highly recommended.

Expense Manager

Expense Manager is designed for business users to help them manage their expenses and subsequent claims.

The package is supplied on CD and is a little trickier to install from an Acorn than Money: since it is not supplied as a .SIS file, it has to be installed manually (Palmtop supply full instructions.) Included in the package is a PC version of the program, allowing users to upload data onto a PC and prepare more advanced reports.

Once installed, Expense Manager

presents you with the main screen, which bears a striking resemblance to that of Money. There are four screens available, 'Expenses', 'Type' (categories), 'Claim' (shows expenses for each claim account) and 'Claims' (shows each claim and reimbursement details).

The expenses screen allows you to enter details of either an expense, such as mileage, or a cash advance. Each expense can be categorised and placed, if you wish, into a particular claims account. Entering expenses is easy and very similar to the input of transactions in Money. As with Money, if the category/claim does not exist, there is an option to create it without having to leave the expenses screen.

The program also supports foreign currencies, taxes and non-reimbursable expenses. Expenses can be copied and altered at any stage of the proceedings, even if a claim has been submitted.

Having entered your expenses, you need to produce a claim (so you can be paid!). This is simply a matter of choosing the relevant claim account, or manually selecting the relevant expenses and selecting 'submit claim'. The claims screen will then appear showing the amount of your claim and its status (draft, submitted or reimbursed). The name of the claim also appears next to the relevant expenses in the expenses window. You then create a claim form, either on the Psion or using the PC application supplied.

Although the package allows you to print out information from any screen, it is also possible to create custom reports. This is easy: you simply select the date range, the claims to be included, the order in which you want them displayed, and what you would like each column to show. Once you are happy with the report it will appear on screen and can then be printed or exported.

When your claim has been settled, select the 'reimburse' option, enter the

amount and date and the program

necessary. If a mismatch occurs it is displayed in both the claims window and in

you to correct it

expenses window, allowing

as

updates

the

Value
value Browser
c c
AC
t/period Solve
erest
e v ere ds

Calculating your mortgage repayments with Financial Calculator

in a later claim.

Expense Manager, unlike Money, is not a program everyone will find useful, but if you have to manage a large number of expenses you'll find the program a real help.

Financial Calculator

Financial Calculator is designed to allow the user to evaluate a variety of financial statistics, including such things as depreciation and rates of return.

The package is supplied on floppy disc and has to be installed by copying the relevant files on to the S5 (like Expense Manager) rather than via a .SIS file.

There are two main screens: the calculator window and the browser window. The calculator window allows you to enter all the parameters for the calculation - interest rate, mortgage value - and displays the result there and then, while the browser window is capable of generating a range of answers.

For example, if you were running a sales business and wanted to find out your break-even point, you would enter the relevant data in the calculator window where the program would show you the current state of your finances. The browser window, however, would present you with a range of results based on selling different numbers of items, allowing you to find the point at which you would cover your costs.

The program supports a large number of financial operations including breakeven, interest rates, depreciation and bonds. It also features numerous length, area and volume conversion factors.

Financial Calculator is aimed at a very specific market and so will not be of use to everyone. However, if you regularly need to handle financial calculations AU you can't go far wrong with this.

Product details

Product:	Money
Price:	£49.95
Product:	Expense Manager
Price:	£49.95
Product:	Financial Calculator
Price:	£39.95
Supplier:	Local Psion dealer







There are **THOUSANDS** of software titles available for Acorn Computers! We stock hundreds of the most popular titles on our shelves for you to browse and try, and can obtain most of the rest within a few days - so there's **NO EXCUSE** not to make full use of your Acorn machine **RIGHT NOW!** Place an order today!

AM PM AM PM AM PM AM PM ay 9:30 5:30 Thursday 9:30 5:30 ay 9:30 5:30 Friday 9:30 5:30 sday Closed Closed Saturday 9:30 5:30	6 CHATTERTON ROAD BROMLEY KENT BR2 9QN Tel 0181-460 8991 • Fax 0181-313 0400 Web http://www.datstore.demon.co.uk/ Email info@datstore.demon.co.uk ALL PRICES IN THIS ADVERTISEMENT INCLUDE VAT @ 17½%

Monday

Tuesda

The TouchPad is one cool way to replace your mouse, says Neal Philips

s Stephen Scott so rightly pointed out in his *Penulator* review (October 1998), the mouse is an awful device to use for drawing; however another solution has come along in the form of Stuart Tyrrell Developments' *TouchPad*. But this product isn't just good for drawing, it's a whole new way to interface with your computer.

Reac

Fans of laptop PCs will be familiar with touch-sensitive pads that move the pointer; the TouchPad is simply one of these in a stand-alone unit consisting of the pad itself (42mm by 56mm), three buttons below it, and a padded cushion into which the unit slots to provide support for your wrist. It looks great, and because you are only working with a small screen it takes up quite a bit less space than a mouse and mat.

Tapping away

You can operate the pad with either your fingertip or the special pen provided. I preferred the pen for more accurate work, though it's easier to press the buttons if you use your finger: either method is simplicity itself. As with all new input devices there is a learning curve at first, but I got to grips with the pad much more quickly than on those disastrous occasions when I've been tempted to try a trackerball. If you're used to a laptop, you'll feel at home straightaway.

The pad supports what is called the 'tap gesture', which means you can simulate a mouse click by tapping the pad, once for a single and twice for a double-click. You can also drag and drop by placing the pointer over an object, tapping twice, holding your finger down after the second tap and dragging to your destination. This sounds a bit strange when you're used to single-click dragging with the mouse, but after a few minutes it

becomes natural: in fact, thinking about it too much just confused me because the tapping had become so intuitive. That's the beauty of the TouchPad: it doesn't get in the way of your work, but just lets you get on with it.

ouch I

When it comes to using the TouchPad as a graphics tool, it really shows how clumsy the mouse is. Because you're using a pen it's much easier to draw naturally, and tracing objects is a breeze. The TouchPad isn't a full-blown graphics tablet – it's smaller than even the most compact Wacom tablet and is not touchsensitive, for a start – but unless you're a serious artist for whom the pressuresensitivity of a tablet is essential, the TouchPad is easily good enough.

PS2Mouse

The TouchPad blends into the desktop environment more smoothly than most input devices, mainly because of its sister product, PS2Mouse. This little magic box plugs into the mouse port and accepts PS/2 devices, such as mice, trackerballs and, of course, touch pads. The more advanced version, PS2Mouse+, allows you to plug in your original mouse at the same time.

If you have an A7000 the TouchPad will plug straight into your machine, but on other machines PS2Mouse removes the need for serial-port driver software, which means that any program that works with the mouse will work with the TouchPad. You can even use the box to configure the mapping of Select, Menu and Adjust buttons if you wish, and to select pointer acceleration (the faster your finger movement, the higher the ratio of pointer to finger speed).

Conclusion

The TouchPad is great. I used to think that

a mouse was all I needed, but now I use the pad equally, if not more, and I can see myself ditching my rodent in the near future. It's probably best to buy the PS2Mouse+ version so that, initially at least, you can switch easily between pad and mouse, but if you're looking for a nifty device to use with both art packages *and* the desktop, this is the one.

Product details

Product:	TouchPad
Price:	£34.95 inc. P&P (no VAT to pay), £29.95 if bought with PS2Mouse or PS2Mouse+
Product:	PS2Mouse
Price:	£24.95 inc. P&P (no VAT)
Product:	PS2Mouse+
Price:	£39.95 inc. P&P (no VAT)
Supplier:	Stuart Tyrrell Developments, PO Box 183, Oldham OL2 8FB
Tel:	0976 255256 (Orange)
Fax:	0870 164 1604
Email:	info@stdevel.demon.co.uk
www:	http://www.stdevel.demon.co.uk/
Pros:	Small footprint A pleasure to use Fully replaces the mouse Doesn't take up serial port No driver software required (except on A7000) With PS2Mouse+ you can use the mouse as well
Cons:	Need to buy PS2Mouse unless you have an A7000

System lockout

Stephen Scott looks at a solution to provide extra security for your computer...

or some Acorn users, there will always be situations where data protection is required. Schools and employers are two cases in point where it is undesirable for unauthorised people to tamper with the configuration and content of computers.

Post RISC OS 3.5 machines provide rudimentary protection devices within the *!Configure* application, but because it forms part of the boot sequence, it can be bypassed easily by holding down Shift. Then there are the Access settings within the Filer menu, which can also be modified with ease. So much for security.

It is thankful then, that there are practical solutions to this predicament available for nearly all versions of RISC OS. One such solution is *!DeskLock*, from iSV Products. *!DeskLock* provides a layer of protection over your desktop which the owner, or system administrator can have total control.

The package is suitable for RISC OS 3.1 or later, but iSV recommend that pre-RISC OS 3.5 owners install the new *!Boot* sequence, such as the one on Acorn's *!Browse* or *!RisCafe* CD-ROMs, or the one on our November 1998 cover CD-ROM, so that the *!DeskLock* installer can function properly. The version on review is 1.12 (9th

June); later versions may be available – check with iSV for more details.

On a simple level, *!DeskLock* prevents selected directories or applications from being opened or run, without entering a password. More advanced facilities are at your disposal, however.

Files and directories can be prevented from unauthorised renaming or copying. Obey, !Configure and BASIC files are also prevented from being executed. The f12 and Break keys can be disabled, to stop resets from occurring, and to prevent access to the command line. The Task window is disabled, as well as particular *Command operations. In effect, almost any physical action on a file can be protected with !DeskLock.

The product is presented, like all iSV software, in a CD jewel case, modified to hold a floppy disc, which contains *!DeskLock* and some associated utilities. Instead of printed documentation, iSV's standard disc based manual approach is employed, like *Penulator*, which I reviewed in the October 1998 issue.

The disc contains four programs; the disc manual, *!DeskInstl* – the !DeskLock installer, *!DeskKill* – which removes *!DeskLock* from your boot sequence, and *!DeskPass*, the utility for setting, renaming or removing passwords. This last program







The main IDeskPass configuration window

should not be kept on the same machine as *!DeskLock* itself, but on a backup disc, ready for use when it is required.

!DeskInstl and !DeskKill represent the best ways of installing and removing !DeskLock. !DeskInstl fixes !DeskLock within the !System directory, and adds a line to the !System.!Boot file. !DeskKill does the opposite, safely removing all traces of the software.

After installation and a reboot, the desktop will re-open with two noticeable changes; the presence of *!DeskLock* on the icon bar, and the greying out of the Task Manager icon. The Task Manager will not be available unless *!DeskLock* is quitted. Even then, the software will only quit once the master password has been entered. In effect, *!DeskLock* remains permanently in the background revealing itself when a user action requires it.

This is disclosed by the appearance of a small window in the middle of the desktop, asking for a password. While it waits for your input, the rest of the desktop is frozen and the mouse pointer is hidden. When the correct password has been entered, pressing Return will continue the desired action, while an incorrect password quits the action.

!DeskLock's presence on the iconbar could be considered pointless, because clicking on it reveals a window showing the protection mechanisms currently activated. These cannot be changed within *!DeskLock*, only with *!DeskPass*. Pressing Menu over the icon merely shows the standard Info and Quit items. Anybody trying to keep a tight rein over the number of icons on their icon bar, *!DeskLock* will disappoint. You cannot quit this front end and have it running in secret.

The manual recommends that the default passwords are altered straight away, through the use of *!DeskPass. !DeskPass* will not run while *!DeskLock* is still active, so it must be quitted using the default master password.

When *!DeskPass* is run, a window opens in the center of the screen containing a set of icons. Each icon opens a window specific to the running of *!DeskLock.* From top to bottom, you can alter protected applications, directories, the master password, protected filetypes, and *!DeskLock's* own internal settings.

With applications and directories, the same window design is used. A scrollable pane lists the currently protected files, and their associated passwords. You can select a particular file, and delete or change its password. You can also add applications and folders to the list, either by dragging files into the window, or via a menu listing currently running programs. *!DeskPass* will actually scan the software and find its Task name entry, as normally listed in the Task Manager, and use this for identification purposes.

With the protected filetypes window, *!DeskLock* can prevent users from opening Obey files, Basic files and *!Configure* files, whichever one is ticked. Basic and Obey files could be used to defeat *!DeskLock*, which is one quoted reason in the manual for why this feature is included. The same password facility is activated when any of these files are run.

The final window, for *!DeskLock's* own settings, consists of four options with tick boxes. Each one determines whether



!DeskLock should protect selected directories, applications, filer operations, or command line access. If any of the first three are unticked, then the password entry will not appear when such an action is made.

When Filer operations are disabled with *!DeskLock* the **NameDisc, *NameDisk, *AddTinyDir, *Rename* and **Configure* commands are rendered unusable, as well as the normal password routine for copying by dragging files or renaming them from the Filer menu.

iSV advise that *!Zap* should not be kept on the same machine as *!DeskLock*, due to *!Zap*'s inbuilt task window facility, which can bypass *!DeskLock* and compromise the computer's protection. iSV provide help for cases where the software has been tampered



Protecting security sensitive filetypes within !DeskPass

and resulted in a locked machine, so all is not lost if anything untoward should occur.

Conclusion

!DeskLock is a simple, easy to use solution, although first timers may feel daunted by the notion of what would happen if passwords were forgotten, leading to unusable files. A good read through of the manual clarifies most of these concerns. It is let down slightly by some spelling and grammatical errors.

The software itself gave no problems during installation and use, and the *!DeskPass* application is competently written. The method of setting up new passwords, and adding applications feels a little rough in terms of design and execution, but it works.

!DeskLock is a well-written product full of useful features that, considering its free inclusion of a site licence, is very fairly priced.

Product details

Flouuci.	DESKLOCK
Price:	£31.50 (price includes UK postage and packing; overseas orders add £2.00 carriage)
Supplier:	iSV Products, 86 Turnberry, Home Farm, Bracknell, Berkshire, RG12 8ZH
Tel:	01344 455769
E-mail:	atimbrell@aol.com
Web:	http://members.aol.com/ isvproduct/

The second and	1
Business and Utiliti	es
Ant Internet Suite II	
ArcFax	
ArcFS2	
ARCshare	
Artworks	
CD Burn	
Complete Animator	
Data Daviand	

Arc Venture (various)

Aztecs, Age 7-11

Best Four Maths

Calabash Pirates

DataSweet 3

English (10/10)

Essential Science

Essential Maths (10/10)

Expl with Flossy the Frog

First Words with Smudge 25.98

Freddy Teddy's Adventure 23.50

Dazzle +

Doodle

Dinosaurs

First Logo

Crystal Rain Forest

39.01

50.17

46.41

25.98

50.17

69.33

83.71

13.49

32.37

13.49

13.49

13.49

28.79

29.02

Dusinoss und Othities		
Ant Internet Suite II	110.	.51
ArcFax	35	
ArcFS2	29	.37
ARCshare	49	.95
Artworks	104	
CD Burn	58	
Complete Animator	94	
DataPower 1	110	
DataPower 2	166.	
DaVinci 90	81.	
Digital Symphony	56.	
Disc Doctor	28.	
Disc Rescue	45.	
Draw Works Designer	31	
EasiWriter Professional	143	
Easy C++	116	
EasyFont Pro		.95
Eureka 3	110	
FastSpool+		.62
Fireworkz Pro	166	
Font Directory Pro		.00
FontFX6	29	
Game On! 2		.00
Holy Bible (Illus.) BP(KJV)		
HTML Edit 4		
	53	
ImageFS 2 IMaster & TWAIN Driver	44	
Impact Pro	35	
Impression Publisher	139 136	
Impression Style		
		.54
MellDI	129	
MIDI Cunthesiner	10	
MIDI Synthesizer	46	
Midi Works	151	.95
Midi Works MovieFS	151 29	.95 .95
Midi Works MovieFS Ovation Pro	151 29 193	.95 .95 .87
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argo	151 29 193) 34	.95 .95 .87 .08
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argo PC Pro (+PC Exchange)	151 29 193) 34 46	.95 .95 .87 .08 .55
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argo PC Pro (+PC Exchange) PC Sound Professional 2	151 29 193) 34 46 40	.95 .95 .87 .08 .55
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argo PC Pro (+PC Exchange) PC Sound Professional 2 Personal Accounts V4	151 29 193) 34 46 40 49	.95 .95 .87 .08 .55 .00
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argc PC Pro (+PC Exchange) PC Sound Professional 2 Personal Accounts V4 Photo Link	151 29 193) 34 46 40 49 65	.95 .95 .87 .08 .55 .00 .00
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argo PC Pro (+PC Exchange) PC Sound Professional 2 Personal Accounts V4 Photo Link Photo Real (Canon/Epsor	151 29 193) 34 46 40 49 65	.95 .95 .87 .08 .55 .00 .55 .86
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argc PC Pro (+PC Exchange) PC Sound Professional 2 Personal Accounts V4 Photo Link Photo Real (Canon/Epsor Photodesk 2	151 29 193) 34 46 40 49 65) 65 256	.95 .95 .87 .08 .55 .00 .55 .86 .02
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argo PC Pro (+PC Exchange) PC Sound Professional 2 Personal Accounts V4 Photo Link Photo Real (Canon/Epsor Photodesk 2 Photodesk plug-ins (call)	151 29 193) 34 46 40 40 65) 65 256 18	.95 .95 .87 .08 .55 .00 .00 .55 .86 .02 .95
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argc PC Pro (+PC Exchange) PC Sound Professional 2 Personal Accounts V4 Photo Link Photo Real (Canon/Epsor Photodesk 2 Photodesk plug-ins (call) ProArtisan 24 (RPC Only)	151 29 193) 34 46 40 49 65) 65 256 18 89	.95 .95 .87 .08 .55 .00 .00 .55 .86 .02 .95
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argc PC Pro (+PC Exchange) PC Sound Professional 2 Personal Accounts V4 Photo Link Photo Real (Canon/Epsor Photodesk 2 Photodesk plug-ins (call) ProArtisan 24 (RPC Only) Prophet 3	151 29 193) 34 46 40 49 65 256 18 89 179	.95 .95 .87 .08 .55 .00 .00 .55 .86 .02 .95 .95 .77
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argc PC Pro (+PC Exchange) PC Sound Professional 2 Personal Accounts V4 Photo Link Photo Real (Canon/Epsor Photodesk 2 Photodesk plug-ins (call) ProArtisan 24 (RPC Only) Prophet 3 Rhapsody 4	151 29 193) 34 46 40 49 65 256 18 89 179 94	.95 .95 .08 .55 .00 .55 .86 .02 .95 .95 .77
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argc PC Pro (+PC Exchange) PC Sound Professional 2 Personal Accounts V4 Photo Link Photo Real (Canon/Epsor Photodesk 2 Photodesk plug-ins (call) ProArtisan 24 (RPC Only) Prophet 3 Rhapsody 4 Schema 2	151 29 193) 34 46 40 49 65 256 18 89 179 94 121	.95 .95 .87 .08 .55 .00 .55 .86 .02 .95 .95 .77 .95
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argo PC Pro (+PC Exchange) PC Sound Professional 2 Personal Accounts V4 Photo Link Photo Real (Canon/Epsor Photodesk 2 Photodesk plug-ins (call) ProArtisan 24 (RPC Only) Prophet 3 Rhapsody 4 Schema 2 Sibelius 6	151 29 193)) 34 46 40 49 65 256 18 89 179 94 121 110	.95 .95 .87 .08 .55 .00 .00 .55 .86 .02 .95 .95 .50 .00
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argo PC Pro (+PC Exchange) PC Sound Professional 2 Personal Accounts V4 Photo Link Photo Real (Canon/Epsor Photodesk 2 Photodesk plug-ins (call) ProArtisan 24 (RPC Only) Prophet 3 Rhapsody 4 Schema 2 Sibelius 6 Sibelius 7	151 29 193)) 34 46 40 49 65 256 18 89 179 94 121 110 665	.95 .95 .87 .08 .55 .00 .00 .55 .86 .02 .95 .95 .50 .00
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argo PC Pro (+PC Exchange) PC Sound Professional 2 Personal Accounts V4 Photo Link Photo Real (Canon/Epsor Photodesk 2 Photodesk plug-ins (call) ProArtisan 24 (RPC Only) Prophet 3 Rhapsody 4 Schema 2 Sibelius 6 Sibelius 7 Sleuth 3	151 29 193)) 34 46 40 49 65 256 18 89 179 94 121 110	.95 .95 .87 .08 .55 .00 .00 .55 .86 .02 .95 .95 .50 .00
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argo PC Pro (+PC Exchange) PC Sound Professional 2 Personal Accounts V4 Photo Link Photo Real (Canon/Epsor Photodesk 2 Photodesk plug-ins (call) ProArtisan 24 (RPC Only) Prophet 3 Rhapsody 4 Schema 2 Sibelius 6 Sibelius 7 Sleuth 3 SparkFS	151 29 193)) 34 46 40 49 65 256 18 89 179 94 121 110 665 151 25	.95 .95 .87 .08 .55 .00 .55 .86 .02 .95 .50 .00 .57 .00 .00
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argo PC Pro (+PC Exchange) PC Sound Professional 2 Personal Accounts V4 Photo Link Photo Real (Canon/Epsor Photodesk 2 Photodesk 2 Photodesk plug-ins (call) ProArtisan 24 (RPC Only) Prophet 3 Rhapsody 4 Schema 2 Sibelius 6 Sibelius 7 Sleuth 3 SparkFS StrongGuard	151 29 193)) 34 46 40 49 65 256 18 89 179 94 121 110 665 151 25 25	.95 .95 .87 .08 .55 .00 .00 .55 .86 .02 .95 .95 .50 .00 .00 .57 .00 .00
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argo PC Pro (+PC Exchange) PC Sound Professional 2 Personal Accounts V4 Photo Link Photo Real (Canon/Epsor Photodesk 2 Photodesk 2 Photodesk plug-ins (call) ProArtisan 24 (RPC Only) Prophet 3 Rhapsody 4 Schema 2 Sibelius 6 Sibelius 7 Sleuth 3 SparkFS StrongGuard Studio Sound	151 29 193)) 34 46 40 49 65 256 18 89 179 94 121 110 665 151 25	.95 .95 .87 .08 .55 .00 .00 .55 .86 .02 .95 .95 .50 .00 .00 .57 .00 .00
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argo PC Pro (+PC Exchange) PC Sound Professional 2 Personal Accounts V4 Photo Link Photo Real (Canon/Epsor Photodesk 2 Photodesk plug-ins (call) ProArtisan 24 (RPC Only) Prophet 3 Rhapsody 4 Schema 2 Sibelius 6 Sibelius 7 Sleuth 3 SparkFS StrongGuard Studio Sound Tablemate Designer	151 29 193) 34 46 40 49 65 256 18 89 179 94 121 110 665 151 25 25 113 60	95 95 87 08 55 00 55 86 02 95 95 50 00 57 50 00 57 00 57 00 00 57
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argo PC Pro (+PC Exchange) PC Sound Professional 2 Personal Accounts V4 Photo Link Photo Real (Canon/Epsor Photodesk 2 Photodesk plug-ins (call) ProArtisan 24 (RPC Only) Prophet 3 Rhapsody 4 Schema 2 Sibelius 7 Sleuth 3 SparkFS StrongGuard Studio Sound Tablemate Designer TechWriter Professional	151 29 193) 34 46 40 49 65 256 18 89 179 94 121 110 665 151 25 25 113 60 222	95 95 87 08 55 00 55 86 02 95 50 00 55 86 02 95 50 00 57 00 00 57 00 00 57 00 00 57 00 00 57 00 00 10 50 10 10 10 10 10 10 10 10 10 10 10 10 10
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argo PC Pro (+PC Exchange) PC Sound Professional 2 Personal Accounts V4 Photo Link Photo Real (Canon/Epsor Photodesk 2 Photodesk 2 Photodesk plug-ins (call) ProArtisan 24 (RPC Only) Prophet 3 Rhapsody 4 Schema 2 Sibelius 6 Sibelius 7 Sleuth 3 SparkFS StrongGuard Studio Sound Tablemate Designer TechWriter Professional TopModel 2	151 29 193) 34 46 40 49 65 256 18 89 179 94 121 110 665 151 25 113 60 222 145	95 95 87 08 55 00 55 86 295 95 77 95 00 00 57 00 00 57 00 00 12 .11
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argo PC Pro (+PC Exchange) PC Sound Professional 2 Personal Accounts V4 Photo Link Photo Real (Canon/Epsor Photodesk 2 Photodesk 2 Photodesk plug-ins (call) ProArtisan 24 (RPC Only) Prophet 3 Rhapsody 4 Schema 2 Sibelius 6 Sibelius 7 Sleuth 3 SparkFS StrongGuard Studio Sound Tablemate Designer TechWriter Professional TopModel 2 Turbodrivers (call)	151 29 193 34 46 40 49 65 256 18 89 179 94 121 110 665 151 25 25 113 60 222 145 54	95 95 87 08 55 00 55 86 295 95 77 95 000 57 000 57 000 95 000 12 .11
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argo PC Pro (+PC Exchange) PC Sound Professional 2 Personal Accounts V4 Photo Link Photo Real (Canon/Epsor Photodesk 2 Photodesk 2 Photodesk plug-ins (call) ProArtisan 24 (RPC Only) Prophet 3 Rhapsody 4 Schema 2 Sibelius 6 Sibelius 7 Sleuth 3 SparkFS StrongGuard Studio Sound Tablemate Designer TechWriter Professional TopModel 2 Turbodrivers (call)	151 29 193 34 46 40 49 65 256 18 89 179 94 121 110 665 151 25 25 113 60 222 145 54 40	95 95 87 08 55 00 55 86 95 50 00 55 86 95 50 00 57 50 00 57 00 57 00 00 57 00 00 57 00 00 57 00 00 55 86 00 00 55 86 00 00 55 86 00 55 86 00 95 87 95 86 95 87 95 87 95 87 95 87 95 87 95 87 95 87 95 87 95 87 95 87 95 87 95 87 95 86 95 87 95 86 95 80 90 95 80 90 95 80 95 80 95 80 95 80 90 95 80 90 95 80 90 90 90 90 90 90 90 90 90 90 90 90 90
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argo PC Pro (+PC Exchange) PC Sound Professional 2 Personal Accounts V4 Photo Link Photo Real (Canon/Epsor Photodesk 2 Photodesk 2 Photodesk plug-ins (call) ProArtisan 24 (RPC Only) Prophet 3 Rhapsody 4 Schema 2 Sibelius 6 Sibelius 7 Sleuth 3 SparkFS StrongGuard Studio Sound Tablemate Designer TechWriter Professional TopModel 2 Turbodrivers (call) WebSpider WebTool for ANT Suite 2	151 29 193 34 46 40 49 65 256 18 89 179 94 121 151 25 255 113 60 222 145 54 40 29	95 95 87 08 55 00 55 86 95 50 00 55 86 95 50 00 57 50 00 57 00 57 00 00 57 00 00 57 00 00 57 50 00 00 57 50 00 00 55 86 29 55 86 29 55 86 29 55 87 95 86 29 55 86 20 95 86 20 95 86 20 95 86 20 95 86 20 95 86 20 95 86 20 95 86 20 95 86 20 95 80 20 95 80 20 95 80 20 95 80 95 80 80 80 80 80 80 80 80 80 80 80 80 80
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argo PC Pro (+PC Exchange) PC Sound Professional 2 Personal Accounts V4 Photo Link Photo Real (Canon/Epsor Photodesk 2 Photodesk 2 Photodesk plug-ins (call) ProArtisan 24 (RPC Only) Prophet 3 Rhapsody 4 Schema 2 Sibelius 6 Sibelius 7 Sleuth 3 SparkFS StrongGuard Studio Sound Tablemate Designer TechWriter Professional TopModel 2 Turbodrivers (call) WebSpider WebTool for ANT Suite 2 WIMP Basic	151 29 193 34 46 40 49 65 256 18 89 179 94 121 110 665 151 25 25 113 60 222 145 54 40 29 44	95 95 87 08 55 00 55 86 95 50 00 55 86 95 50 00 57 50 00 57 00 57 00 00 57 00 00 57 00 00 57 95 00 00 57 95 00 00 57 95 95 95 95 95 95 95 95 95 95 95 95 95
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argo PC Pro (+PC Exchange) PC Sound Professional 2 Personal Accounts V4 Photo Link Photo Real (Canon/Epsor Photodesk 2 Photodesk plug-ins (call) ProArtisan 24 (RPC Only) Prophet 3 Rhapsody 4 Schema 2 Sibelius 6 Sibelius 7 Sleuth 3 SparkFS StrongGuard Studio Sound Tablemate Designer TechWriter Professional TopModel 2 Turbodrivers (call) WebSpider WebTool for ANT Suite 2 WIMP Basic Win95FS	151 29 193 46 40 49 65 10 65 256 88 9 41 21 110 665 151 25 25 113 60 222 2145 54 40 29 44 41	95 95 87 00 55 86 02 95 95 00 00 55 86 02 95 95 00 00 57 95 00 00 57 00 00 57 00 00 55 86 02 95 95 00 00 55 86 00 95 95 100 00 55 86 00 95 100 100 100 100 100 100 100 100 100 10
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argo PC Pro (+PC Exchange) PC Sound Professional 2 Personal Accounts V4 Photo Link Photo Real (Canon/Epsor Photodesk 2 Photodesk 2 Photodesk plug-ins (call) ProArtisan 24 (RPC Only) Prophet 3 Rhapsody 4 Schema 2 Sibelius 6 Sibelius 7 Sleuth 3 SparkFS StrongGuard Studio Sound Tablemate Designer TechWriter Professional TopModel 2 Turbodrivers (call) WebSpider WebTool for ANT Suite 2 WIMP Basic	151 29 193 34 46 40 49 65 256 18 89 179 94 121 110 665 151 25 25 113 60 222 145 54 40 29 44	95 95 87 00 55 86 02 95 95 00 00 55 86 02 95 95 00 00 57 95 00 00 57 00 00 57 00 00 55 86 02 95 95 00 00 55 86 00 95 95 100 00 55 86 00 95 100 100 100 100 100 100 100 100 100 10
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argo PC Pro (+PC Exchange) PC Sound Professional 2 Personal Accounts V4 Photo Link Photo Real (Canon/Epsor Photodesk 2 Photodesk 2 Photodesk plug-ins (call) ProArtisan 24 (RPC Only) Prophet 3 Rhapsody 4 Schema 2 Sibelius 6 Sibelius 7 Sleuth 3 SparkFS StrongGuard Studio Sound Tablemate Designer TechWriter Professional TopModel 2 Turbodrivers (call) WebSpider WebTool for ANT Suite 2 WIMP Basic Win95FS XStitch 2	151 29 193 46 40 49 65 10 65 256 88 9 41 21 110 665 151 25 25 113 60 222 2145 54 40 29 44 41	95 95 87 00 55 86 02 95 95 00 00 55 86 02 95 95 00 00 57 95 00 00 57 00 00 57 00 00 55 86 02 95 95 00 00 55 86 00 95 95 100 00 55 86 00 95 100 100 100 100 100 100 100 100 100 10
Midi Works MovieFS Ovation Pro P'rllel port Zip driver (Argo PC Pro (+PC Exchange) PC Sound Professional 2 Personal Accounts V4 Photo Link Photo Real (Canon/Epsor Photodesk 2 Photodesk plug-ins (call) ProArtisan 24 (RPC Only) Prophet 3 Rhapsody 4 Schema 2 Sibelius 6 Sibelius 7 Sleuth 3 SparkFS StrongGuard Studio Sound Tablemate Designer TechWriter Professional TopModel 2 Turbodrivers (call) WebSpider WebTool for ANT Suite 2 WIMP Basic Win95FS	151 29 193 46 40 49 65 10 65 256 88 9 41 21 110 665 151 25 25 113 60 222 2145 54 40 29 44 41	95 95 87 00 55 86 95 50 00 55 86 95 95 77 95 50 00 57 60 00 57 00 00 57 00 00 57 00 00 57 00 00 57 00 00 57 95 50 00 50 50 00 55 50 000 55 50 000 50 5

	T
French (10/10)	13.49
Fun School 3/4 (various)	24.99
Geography (10/10)	13.49
German (10/10)	13.49
Granny's Garden	28.79
James Pond Run. Water	27.00
Maths (Geometry) (10/10)	13.49
Maths (Number) (10/10)	13.49
Mega Maths	24.99
Micro Maths	24.99
My World 2 + 2	54.70
Naughty Stories Vols 1-6	44.65
New Teddy Bear's Picnic	36.78
Nursery Rhyme Time	33.43
Oxford Reading Tree 3	44.65
Pendown DTP	65.85
Playdays age 3-8	23.40
Playground (Freddy teddy)	23.50 25.98
Smudge the Spaniel Spelling & Punctuation	25.98
Splosh+ (1-5 users)	51.70
Table Aliens	27.85
TinyDraw/TinyLogo	29.37
Tizzy's Toybox	47.94
Watch Magic Grandad	30.13
	00.10
GAMES	
Alone in the Dark	34.99
Anagram Genius	20.00
BHP Brutal Horse Power	28.49
Birds of War †	30.00
Black Angel	30.00
Break 147 & S'pool †	27.00
Carnage Inc.	22.50
Chocks Away Compend.	27.00

	BHP Brutal Horse Power	28.4	19
	Birds of War †	30.0	00
	Black Angel	30.0	00
	Break 147 & S'pool †	27.0	00
	Carnage Inc.	22.5	50
	Chocks Away Compend.	27.0	00
1	Cobalt Seed	23.7	74
	Crystal Maze, age 7+	28.4	
l	Cyber Chess	31.5	50
	Darkwood	20.7	70
	Demon's Lair	20.0	
	Drifter (DD/HD)	31.5	50
Contract of	Dune II (CD - £31.50)	26.6	50
	Dungeon †	27.0	00
	E-Type 2 †	30.0	00
	Eclipse Collection	22.4	19
	Enter the Realm	25.0	00
	Exodus	25.0	00
	Fire and Ice	23.3	39
	Formula Two Thousand	23.7	74
	Global Effect	27.0	00
	Groundhog	12.0	00
	Haunted House	25.0	00
	Holed Out Compendium	20.0	00
	James Pond 2+	16.2	
	Krysalis Collection (NRPC)		
	Logic Mania	27.0	
	Pandora's Box	25.0	00
	Patience Addict	19.9	
3	Play It Again Sam 3	24.9	
	Play It Again Sam 4	35.0	
	Pushy (Shovy)	12.0	
	Real McCoy 2/3/4 (each)	35.0	
	Real McCoy 5	31.5	
	Rick Dangerous	15.2	
	Saloon Cars Deluxe	31.5	
	Scrabble	26.5	
	Shuggy Silver Boll	25.9	
	Silver Ball Simon the Sorcerer	12.0	
	Small †	27.0	
	Spobbleoid Fantasy	30.0	
	Stereoworld	22.5	
	Stuntracer 2000 †	35.0	
Xues	Tanks	25.9	
	The Time Machine	25.0	
	Virtual Golf	31.5	
	Wavelength	13.5	
1000	CD Business & Utils		
-	Arm Club PD CD 1	19.0	00
	Arm Club PD CD 1 Arm Club PD CD 2	15.0	
		04.6	
		04.0	53

Bitfolio 7	42.74
Font Emporium	29.95
PDCD4 (Datafile)	15.00
PDCD5 (Datafile)	15.00
ProArtisan 2	98.93
Risc Disc Vol.1	15.00
Risc Disc Vol.2	20.00
Risc Disc Vol.3	25.00
Rob Duncan Cartoon Kit	42.74
Task Force Clip Art	33.20
Tekkie Disc (PRM's etc)	47.50
CDROM Education	1
Ancient Egyptians	42.30
Ancient Lands	50.53
Anim Talking Alphabet#	33.43
British Isles from the Air	42.30
Castles	
	42.30
Crystal Rain Forest 2	50.17
Dangerous Creatures	50.53
Dinosaurs	50.53
En Route	89.29
Era of the 2nd WW	81.08
Eureka Discoveries & Inve	
Garden Wildlife	42.30
Guardians of Greenwood	58.16
Hutchinson's Encyclopedia	
Illustrated Shakespeare	29.32
John Cabot & Merchant V.	42.30
Kingfisher Micropedia	76.38
King Arthur	58.69
Kiyeko with Acorn reader	36.43
Map Detectives Musical Instruments	50.17
	50.53
My 1st Incrd. Amaz. Dict. Number Time 2	41.13 28.99
	the second second
Oxf. Talking Infant Atlas	22.32
PB Bears Birthday Party	41.13
Perspectives Francais	81.08
Rocks, Min's & Fossils	81.08
Romans Spience Explorer	42.30
Science Explorer	66.96 42.30
Seashore Life	
Science In Action	13.73
Settlements	81.08
Space Exploration	13.73
Survival: Mysteries of Nat.	42.30
The Way Things Work	50.53
The World's Weather Tizzy's Toolbox	52.87
TOTS TV	44.65
	19.95
Ultimate Human Body	50.00
Understanding the Body Vikings	42.30
Water (Picture Resource)	42.30 13.73
World of Robert Burns	93.94
Trond of Hobert Dullis	55.54

Artworks ClipArt 1 or 2

20.08

1500 titles Available!!

Some dealers may not stock some titles

Minimum delivery

Credit Cards and Official E&OE All Prices Include VAT @ 17.5%

World Population Atlasfile 37.01 CDPOM GAMES

CDRUM GAR	VIES
Abuse	25.00
Ankh	25.00
Crystal Maze	28.45
Doom Trilogy	35.00
Dune II	31.50
Simon the Sorcerer	32.40
Syndicate	29.00
Wizards Apprentice	24.95

New Games

Heroes Might E Magic £35

Morph - £25 SuperSnail - £25 Real McCoy 6 £35

Key :

NRPC Not for RPC † Separate RPC version available

Please note many titles have been abbreviated for the advert

Order from a participating dealer

The Data Store Tel 0181 460 8991 Fax 0181 313 0400 email sales@datstore.demon.co.uk

CJE Micro's / NCS Tel 01903 523666 Fax 01903 523679 email sales@cje.co.uk

Davyn Computer Services Tel 01924 254800 Fax 01924 254036 email sales@davyn.demon.co.uk

Liquid Silicon Tel 01592 592265 Fax 01592 596102 email liquid@cableinet.co.uk

Uniqueway

Revision 9

Tel 01222 464020 Fax 01222 440071 email sales@uniqueway.co.uk

CTA Direct Tel 01942 797777 Fax 01942 797711 email sales@cta.u-net.com

Steve Mumford looks at WIMP two packages designed to simplify the task <u>Cramm</u> in BASIC

O ne of the great advantages of the original BBC Micro was its implementation of BASIC - it supported structured programming making it clear and easy to understand, plus a wellwritten reference guide to the language was supplied with the machine.

It provided a great opportunity for those who wanted to try their hand at programming, and I'm sure there are a lot of people out there who tapped in their first serious programs at a keyboard. From BBC BASIC, you could access most of the machine's major functions, so there was little need to progress to another language unless performance was critical.

Times change, and due to the increased overheads and relative

of

One of WimpWorks' advantages is that the code that it generates is completely

stand-alone, and no extra module directories need to be included, this is because it converts your code into "real" BASIC, while WimpBASIC's libraries are held in a separate modules folder, which

freeware, as long as suitable reference is

made to the tools used and no attempt is

made to reverse-engineer the code or

Getting Started

some.

support modules.

Installation of either package is straightforward – *WimpWorks* copies directly to a hard disc, and WimpBASIC

might prove to be a little cumbersome for

requests registration details before personalising the installation disc. Copy protection for this application is provided on a 'credit' basis with two credits supplied as standard, the extra credit being provided in case of hard disc corruption. An uninstall option is available in case you want to move the application to another machine.

When it comes to creating a new program, both applications present the user with interfaces that share some common ideas - instead of ploughing straight into reams of code, the programmer approaches their embryonic application from almost the opposite direction, by designing the layout of the user interface. Windows are fairly easy to set up, with both packages using a variant on Acorn's original FormEd tool.

Menu construction is a little different: as well as deciding which entries to include in the menu, you can specify functions which are to be called when the item in question is selected. Once the windows and menus have been laid out,

WIMP systems such as RISC OS, writing your own WIMPbased program is a more demanding task. Due to all the extra housework that needs to be done, a lot of effort can be sunk into creating the raw multitasking framework of the program before even the tiniest

complexity



The good news is that both Clares and Jaffa Software are happy for you to release and distribute any applications that you create with their software, commercial or



WimpWorks

prices





short procedures are written to be called automatically when the user clicks on the iconbar, for instance.

Finally, the rest of the program can be built around the framework that's been set up. At this stage, all that remains is to 'compile' the application and save it to disc, dealing with any errors using the built-in throwback systems.

The editors

Although both applications have editors similar in function, those provided with *WimpBASIC* are more tightly integrated into the package, and a couple of extra resource viewers are thrown in for good measure. As well as window, menu and code designers, *WimpBASIC* can provide you with lists of the variables and sprites used in your application.

All the designers and viewers present their information in a consistent fashion, showing a summary of objects available to edit, and providing the ability to create new ones – a little similar in operation to the Filer, or the sprite overview in *Paint*. The individual editors are perhaps more familiar – windows are created in something a little like *FormEd*, and code is



WimpBasic Filters

passed to an *Edit* lookalike, with syntax-sensitive colouring.

The connectivity between the core of *WimpWorks* and its editors is a little less formal, and window definitions are passed to a separate template editor before being pulled back into the core once they have been saved. The editing of code is carried out in much the same way, and procedures are exported to *Edit* (or any other suitable text editor you happen to have running) for modification. In addition the more open structure of *WimpWorks* allows third party additions for editing as well.

Because of this, the separate sections of *WimpWorks* do behave differently, but there are advantages – I much prefer using



WimpWorks' website

StrongEd to edit code, and having that facility makes the whole process a bit more comfortable for me.

Learning the WIMP

Although a lot of the groundwork is prepared for you, you'll still have to write

your own sections of code to create fully-functional applications, so we need to consider two main areas. The first is to determine the language we'll be using to write the extra code and the second is to find out how much support material is provided.

Looking first at WimpWorks, it uses the ARM BASIC module to provide the core of the language, which is understandably comforting to the aspiring WIMP programmer. The language has been extended to provide WIMP functionality by a mixture

of extra procedures and keywords. Command syntax is the same, as is the flow of control – in fact, it's just

like writing a series of separate procedures.

In the *WimpWorks* world you can add extension packages that add certain types of commands to the language, for example it would be feasible for someone to create a database package that provided specific commands for handling a database.

WimpBASIC is rather different in that it uses a language that's *like* BASIC in appearance. Most of the BASIC keywords have been reimplemented, along with a whole host of new ones, but because it's a separate language in its own right, there are subtle differences to be aware of. Firstly, although the language itself isn't case sensitive, the editor automatically maps typed commands into an aesthetic mixture of upper and lower case – strangely unsettling if you've been immersed in BASIC for any length of time.

Other differences emerge, for example, the colon cannot be used as a command separator – you're only allowed one statement per line – and is used for a completely different purpose. However, the fact that it's a reimplementation of BASIC means that improvements can be made: for instance, altering the text in a writable icon is as simple as setting a string variable.

I'm happy to say that both packages come with plenty of documentation – both have hypertext manuals stored in *StrongHelp* format as well as command reference lists giving full details of the additional commands provided. *WimpWorks* is supplied with a paper manual as well, and I particularly liked the way in which associated commands



WimpWorks task menu

44 Acorn User Christmas 1998 http://www.acornuser.com/

An Important Announcement!

Circle Software will continue to support *Risc-OS* computers, whoever makes them, and to work with the Acorn community into the next millennia.

We have always been proud of our customer support, and our customer's loyalty. In this season of good will, we are pleased to return the debt, and make *you* the following *very* special offer.

Our **Impact** database represents over *six years* of software evolution. In it's current form as **Impact-3**, it now has inbuilt links providing *direct* data merge into **OvationPro** documents (as it still does with Impression), to provide the finest report generation available on *any* platform. **Impact-3** is *the Risc-OS* database. If you need to store any form of data, from simple addresses to business records, to sort it, filter it, and print it - easily - there really is no alternative - at twice the price. *You can't afford to miss this!* We won't repeat it!



Only until the end of December - £76.00^{*}+VAT, post free

Normally £145. Upgrades, from *any* previous version, only £20 inc. (please return disc)

We warmly wish you all an enjoyable Christmas and rewarding New Year.



* UK total £89.30 post free. EU + £5 p & p. Elsewhere £76 + £8 p & p.
Write today for return-of-post service. Impact is still *only* available from - Circle Software, PO Box 36, BODMIN, PL30 4YY - Tel: 01208 850790



Q:What is the future for Acorn computers? A: Read Archive magazine and find out!

Q: How can I best use my existing Acorn? A: Read Archive magazine and find out!

To: **Archive Publications**, 18 Mile End Road, Norwich, NR4 7QY. Phone: 01603-766922 Fax: 460736 Email: paul@archivemag.co.uk

Please send me the next two issues of Archive FREE OF CHARGE on the understanding that (a) I have not subscribed to Archive before, (b) I have not taken advantage of any other such free trial offer, and (c) if I do decide to take out a subscription (\pounds 25 in UK, \pounds 30 Europe, \pounds 38 elsewhere), these two magazine will be the first of the twelve issues for which I pay.

Name: ____

Address: ____

Send no money, just your address.

Or email your address to: Paul Beverley, paul@archivemag.co.uk



WimpBasic Manual	Main Window
	The Main Window
WimpBASIC 2 Version 2.03 (30.06.98)	Clicking on the WimpBasic icon opens up a window. This window is called the Main window. Through it and the <u>Main Window Menu</u> menus all other parts of the designer are accessed.
	hellodes
© Clares & Höskuldur Hermannsson	Program name Hello World
This manual provides help for Clares WimpBasic programming environment	Memory needed 64 K /
WimpBasic requires Rise OS 3.1 or later Acknowledgements Thanks etc Licence conditions End User Licence	
Notes Disclaimer and stuff	Iconbar sprite
Web site An independent site	Iconbar menu IconbarMenu
Contents	Select procedure ProcOpenWindow
Version 2 Code Viewer	Adjust procedure 10
Tutorials The Code Editor Introduction Sprite Viewer	Ouit function
Installation Raw Events Viewer	Load procedure
Getting Started Configuration The Main Window Keywords	Startup procedure
The Main Menu Omitted keywords	Statup procedure
Windows Viewer Compiling & Debugging The Windows Designer Compiler Error Messages	
Menus Viewer RunTime Error Messages	Program name Enter the program name here. This program name appears in the ta
The Menus Designer Index Variables Viewer Units	manager window when you run your program.
and a state of the second states	

WimpBasic Manual using StrongHelp

were listed alongside each entry in the reference section – this feature makes it much easier to get to grips with the additions to the language.

Detailed walkthroughs are also provided, two in the *WimpWorks* manual, and five for *WimpBASIC*, but both applications provide numerous example programs on disc and a lot can be learned from examining how another programmer tackled a particular problem. There's an independent *WimpBASIC* web site that holds a whole variety of programs, classified according to their function – well worth a look if you've got web access.

Although you're bound to come up with ideas that won't be readily

WimpWorks implementable, and WimpBASIC both have a strong complement of prewritten functions - for instance, both packages allow you to load and display sprites and Draw files as well as plot simple geometric shapes, and WimpWorks is supplied with an extension module that allows you to create your own Draw files. It's also possible to extend WimpWorks' functionality by writing your own plugin editors to complement those already present.

More Information

If you want to find out more about either of these programs, the best places to start are probably their supporting websites.

E X error	Window Editor	main		R.	Template Icon
Coordinates : Button State : Window Owner :	Mouse Info 0000 , 0000 Dormant Application	Triba	Name Text Sprite Validation	Window 'main	N: Edit icon 11
Icon Handle :	Horizontal Scrollb	F	H <u>= </u> = 'grnd 7 1	B'grnd	Shaded
AITS 2	TECHNO	Γ	ont Syste utton type Never	m Font	X (pt) Y (pt) 12 12 E.S.G0 Cancel OK

WimpWorks window edit



WimpBasic website

An independent site has been set up for *WimpBASIC* at *http://www.treknet.is/wb/* and is maintained by one of its beta-testers. The site holds a code library, hints and tips sections, *WimpBASIC* updates and more, but some of these areas do appear to be a little sparse or out-of-date. However, the site is home to a large array of example applications and tutorials, so could be useful for the struggling programmer.

The WimpWorks website is maintained by the authors of the software, and is held at http://www.cryogen.com/jaffa/. There are two areas of particular interest – it's possible to download a demonstration version of WimpWorks for evaluation, and owners of newer copies of the application will be able to download updates directly from the website. There's also a document detailing a WimpWorks feature named ActiveApps, a versatile message-passing system that even function across networks.

In Summary

I was greatly impressed by both of these packages – once you're familiar with the particular idiosyncracies of either application, you can start putting a program together without having to worry about how you're going to code the printing function or file transfer mechanisms. By removing a lot of the black magic associated with WIMP programming, *WimpWorks* and *WimpBASIC* aim to make Acorn's GUI more accessible to the masses, and for the most part they succeed.

If you're thinking about which package to go for, I'm afraid you're in for a tough choice – I prefer *WimpWorks'* more accessible language, but I get the feeling that it might be easier managing large projects under *WimpBASIC*.

Finally, if you're planning to try your hand at coding using one of these applications, I'd recommend investing in a WIMP BASIC programming book – a number are available – because although both packages do a relatively good job at introducing the procedures involved, it's particularly helpful to understand a little of what goes on underneath the surface.



Visit us at www.eff.co.uk • Contact us on sales@eff.co.uk The Electronic Font Foundry • 11 Silwood Road, Ascot, SL5 0PY • tel 01344 875 201 • fax 01344 875 202

Please contact us for your free copy of EFF Font Poster, Acorn Price List and EFF New Product Guide.

The Electronic Font Foundry is proud to present its latest release,

EFF Handwritten Collection

EFF HANdWritten is a set of contemporary scripts, based on modern handwriting styles, ranging from careful calligraphic styles to unruly designer's hand. These scripts are a great way to brighten up any monotonous looking pages. They will also make an original gift and are also available in Mac and Windows version. Samples of some of the fonts are on the left, to see the whole collection see our website or contact us for a leaflet.

EFF Kandwritten Collection EFF Kandwritten Collection EFF Handwritten Collection EFF Handwritten Collection EFF Handwritten Collection EFF Handwritten Collection

ELECTRONIC

Special Promotion Price: £20+P&P+VAT (£25.26 UK incl.) until 31.01.99. Normal price £25+P&P+VAT (£31.14 UK incl.)

Still available EFF 1998 Best Sellers - EFF True Type Translator & EFF Font Table

*EFF***TTT** is the first eve translator of TrueType® fonts, the most common format for Windows. *EFF***TTT** converts in seconds any TrueType font to standard Acorn format, giving you access to all the fonts available to PC users, including all the free fonts on the Internet.

Instant TrueType font translator

- Instant TrueType font sample viewer and full info displayer
- Instant TrueType complete font table creator
- Choice of encodings and settings
- Automatic adding of hinting for improved quality
 Online comprehensive manual and interactive help current
- On-line comprehensive manual and interactive help support

EFFTTT (for 1 computer), £39+P&P+VAT (£47.59 UK incl.)

EFF Font Table is a very simple and effective application for producing font tables in !Draw format. Creates professional looking tables in seconds, and can be easily customised by a number of options. A very useful application for compiling font catalogues, or printing samples. Fully supported by interactive !Help and on-line manual.

EFF FontTable (for 1 computer), £7+P&P+VAT (£9.99 UK incl.)

Please note that prices given for EFF**TTT** and EFF**F**ont**T** able ate for single user licence. If you wish to use the programs on more than one computer, site licence is available at 20% of the basic price for each additional machine.

PANASONIC **DVD-RAM DRIVE**

An impressive, state-of-the-art, multifunction DVD and Compact Disc device, is now available for the Acorn platform with the Eesox DVD-RAM drive. This drive uses rewriteable DVD-RAM cartridges with a capacity of either 5.2GB or 2.6GB. With cartridges costing 0.5 pence per Megabyte, this drive is essential for anyone who needs large amounts of storage, and it is an ideal device for backing up your data.

VISA

C

5Q(

CB4

bridgeshire

Cam

Swavesey.

The DVD-RAM drive is a fast and reliable storage device using the latest DVD technology. The drive uses a SCSI interface for maximum performance and easy connectivity and is extremely simple to install and use.





66 Convergence A once-in-a-lifetime limited print offer



ollowing a very positive public response towards Astute Graphics latest illustration entitled "Convergence" (as featured on last month's front cover), it has been decided to commit the unique design to a limited high quality hand-made litho print run of 150. Each copy is presented in an elegant glass-fronted frame and measures approximately 50cm (20in) square as well as being signed and numbered by the artist, Nicholas van der Walle. Designed and published from start to end on a RiscPC primarily using Spacetech's Photodesk 3, the end result will become a centrepiece of attention wherever on display.

In order to obtain a copy of this unique work of art, please contact Astute Graphics to ensure availability. Each copy is £125.00 inclusive of package and postage to UK mainland and Northern Ireland. No VAT payable. Please make cheques payable to "Astute Graphics".

Tel. (01989) 567 350 • nick@astutegrfx.demon.co.uk • http://www.astutegrfx.demon.co.uk

Get the best from your PC Card!



PCPro 3 software now ready

PCPro 3 is another substantial improvement in the performance and facilites offered for Risc PC Second Processor cards. It offers particular benefits to games players, with:

 DirectX and VESA 2 support, allows many games written for DOS and Windows to utilise new video drivers and achieve very high frame rates; faster support for VGA

- · Completely new User Interface, simplifying installation of this and later upgrades
- Simplified installation of Network Links, allowing you to join a PC Network (costs £20 more for one user)
- · Completely new comprehensive printed User Guide
- Multiple configurations can now be kept; you can select which OS to boot into
- 32-bit ASPI Drivers, covering more SCSI devices
- Dynamic mode changing; Toolbar control of Serial and Parallel port access

Existing users of PCPro who send a disc back with our label pay £40; fresh users, for example having PCx86 of Acorn, pay £70. PC Exchange is only £10 and PC Sound Pro 2 only £30 if ordered at the same time. Prices include VAT and postage.

More details on our site: www.aleph1.co.uk/AcornProd/ Software/PCPro3Demo/index.html

Aleph One Ltd The Old Courthouse Bottisham CAMBRIDGE CB5 9BA Tel +44 (0)1223 811 679 Fax +44 (0)1223 812 713

ow much time do you think your computer spends doing something useful? Say, opening a window, dragging something, redrawing a picture, processing a key click? All these processes are short term - that is to say,

lan Molton's machine plays when he's away

they only occupy the processor's attention while they are actually happening.

So what happens the rest of the time? Well, the computer has to perform some housekeeping functions, but other than that, it just sits there and does absolutely nothing, waiting for you to get it to do something else.

In the past it had been suggested that all this wasted computing power could be put to good use if it could be pooled. But it took the arrival of mass access to the Internet to make it feasible and in 1997, Adam L. Beberg set up the project distributed.net to demonstrate just what can be done.

The logic behind this is that there are a lot of huge numerical problems around, which require so

much processing power Why is it called Project Boving that it is hard to find machines to run them on, so why not use more than one machine?

collective is slowly munching its This is just what way through the field of distributed.net have data blocks. done - they have set up a vast network of thousands of volunteer computers, all of which are given part of a large task to do, and when they have calculated their portion

of the task, they report back their answer, via the Internet, and collect another part of the task to process.

Project Bovine RC5-64

So with these thousands of machines all available to work together we have, as distributed.net would put it, "The world's fastest computer" but what do

we do with it? One use for the

system, is "cracking" encryption codes, and RSA Security have offered a prize if distributed.net crack their RC5 encryption

crackin

distribute

system.

To encourage people to help out, distributed.net are offering a prize of up to \$2000 to the person who breaks the code. Another incentive is that "teams"



We're not entirely sure but it's

probably because the computer

The number of blocks processed daily by the Acorn User Group

can be formed, and people can see their own and their team's progress in the global rankings.

The software to perform the cracking operation as wel as look after the down- and uploading of data blocks has been converted to many different computer platforms which is where Acorn users come in - the distributed.net client software also works on RISC OS, so we can ioin in too.

About eight weeks ago we were placed around 4000th, but at the time of writing we had reached 712th and still climbing and that's with about 50 players on our team, imagine what we could do with 100 players, or 500 or even 1000 we could easily make it into the top 100.

Why would we want to do that? Because all over the world people look to see which teams are doing the best, and while it's true that the platform itself isn't really important if RISC OS is there with the front-runners it gets noticed.

And the great thing is that once it's set up you don't have to do a thing, you just let it run in the background, ideally never switching your machine off. To make it even easier the RISC OS software is on the cover disc.

Once you've got the system running and your machine has delivered its first completed blocks to distributed.net you can then join the Acorn Users Group (#4266) and together our machines can beat the rest of the world so get it loaded, get it running and U get cracking.

Internet contacts Distributed.net http://www.distributed.net/

Acorn User Cracking Group web page http://www.alphapro.demon.co.uk/ Acorn/rc5des.html

Acorn RC5 mailing list mailto:maillist@alphapro.demon.co.uk with a subject of SIGNON acornrc5



Creating icons and modifying them Steve Mumford takes control

n the process of designing the colour selection tools last month, we came across the use of slider bars and nudge buttons to provide the user with a more intuitive method for choosing appropriate values. This month, I'm looking in greater detail at creating, displaying and modifying icons using the standard WIMP system calls.

Until now, we've made use of template editors to set up the general layout of a window, and any icons we wished to include have been created at that stage. Although this makes the initial process of producing a window a lot easier, it's not possible to rely solely on this technique there will always be times when you need a little more flexibility.

The two main SWI functions that we'll be making use of are **Wimp_CreateIcon** and **Wimp_DeleteIcon**, but in order to be able to modify an icon's attributes, we need to be able to quiz the icon itself and store the returned details somewhere — that's where **Wimp_GetIconState** comes in.

In order to describe an icon's attributes fully, we need to store several parameters. Every icon has a window handle and icon handle, a four-word bounding box specifying its minimum and maximum x and y sizes, a word of flags that store the icon's behaviour and colour, and three words of data that can hold pointers to blocks of memory, perhaps holding an indirected string of text or a sprite, depending on the nature of the icon. In order to create an icon, these values are stored in the above sequence in a memory block whose address is stored in register R1 and **Wimp_CreateIcon** is called. The icon itself has now been defined but still needs to be displayed, **Wimp_ForceRedraw** is the simplest way of achieving this.

Instead of creating all your icons from scratch, the easiest way of learning how to control them is to do all the hard design using a template editor, make a note of the icon numbers then use **Wimp_GetIcon State** to read those details into data structures created in your program. Once you have the information, changing and recreating the icon is a simple matter as properties such as the icon flags and data can just be copied from the original template.

Wimp_GetIconState takes the address of a memory block in register R1, and when the SWI is called this block should contain a window handle and an icon handle in the first two words of the block. The function fills the data block with eight words of data, starting at the address R1+8 the first four words give the bounding box of the icon, the next contains the icon's flags, and the last three hold the three words of icon data mentioned above.

Getting back to the construction of the slider itself, it's composed of three discrete icons. I use a template editor named *TemplEd*, written by Dick Alstein, and this program has a stock of prefabricated window objects to ease the task, but it's a simple enough operation for those who wish to build their own. Icons are displayed on the screen in sequence, the ones with the lowest icon numbers being drawn first. This means that icons with higher icon numbers are displayed on the top of any already on

the screen and it's this behaviour that we need to make use of.

The slider consists of a rectangular 'well' to enclose the area of the movable slider bar, a white background strip that runs almost the entire length of the well, and finally the movable bar itself, drawn as a filled rectangle directly over the top of the slider background. Changing the maximum x extent alters the amount of coverage the bar takes up, and all that remains to be done is to allow the user to control it this can be done with nudge buttons or more dynamically by capturing appropriate drag messages.

There's a small catch: once an icon has been created, there's very little that can be altered dynamically, it's limited to changing the icon's various flags (using the command **Wimp_SetIconState**) or altering any text it might contain. Therefore, if we want to change some other feature of an icon, such as its position or size, we must delete and recreate the icon in the same location with modified parameters.

One last thing to note when creating, changing or deleting icons, the modifications aren't immediately reflected on screen. In order to update the display, you must call **Wimp_ForceRedraw** to mark an area of the screen as being invalid at this stage, the WIMP takes over and contacts your task through the usual channels with a message to redraw the screen. There's much more to learn about icon manipulation including making use of icon validation strings and the varied types of icon available, and we'll be covering these features as our label application develops.



*** New Premises ***

During the course of November we will be moving into new premises. We will be aiming to expand our list of products and services. Meantime we can still be contacted at the address below.

Phoebe / Risc PC 2

Due to the unsettled future of this product we are unable to give details of pricing. We are still optimistic about the likely appearance of the new machine under the guidance of a new company.

SA Risc PC & A7000+ Systems

Thanks to Castle Technology we will be able to continue to supply and support the existing Risc PC and A7000+ systems. For current pricing please contact us at the address below.

Network Computers

We can offer complete NC solutions running the Topcat software and Citrix Metaframe from a Windows NT server. We can offer the full package from installing the network cables through to supply and configuration of the server, nc's and the software. Call for more information.

Components & Peripherals

4Gb IDE Hard Drives	£95
24x & 32x Hitachi CD ROM drives from	£35
16Mb EDO RAM (tested for RPC)	£16
32Mb EDO RAM " "	£32
64Mb EDO RAM " "	£call
CTX 15" Monitors (3yr warranty)	£120
CTX 17" Monitors (3yr warranty)	£210

We also supply a full range of printers, expansion cards, modems etc. Please call for more info.

Clearance Corner

Ethernet Cards for A3000/A4000	£50
Risc OS 3.11 Upgrade (new)	£28
A3000 Computer + Monitor, Mouse	£100
HP Turbodriver Software (new)	£30
Canon Turbodriver Software (new)	£30
Plus much much more!!	

Tel 0141 644 4952

Fax 0141 644 5299 http://www.tecs.co.uk E-mail sales@tecs.co.uk 140 Busby Road, Clarkston, Glasgow G76 8BG NB ALL PRICES EXCLUDE VAT @ 17.5%

AKALATS Publishing P.O.Box 231, Barton, Bedford MK45 4HQ. Tel. 01582 881614 fax 01582 881614 Email: akalat@kbnet.co.uk



Includes part 3 in our major series on scanning and image processing. You can still subscribe to Acorn Publisher and get parts 1 & 2 of this series entirely free of charge.

Volume 5 Issue 1

This is the series which no Acorn user can afford to miss.

If you use applications like Impression, ArtWorks Ovation Pro, Studio24, Photodesk, HTMLEdit for desktop publishing, image processing and web site creation then Acorn Publisher is the indispensable guide you must have.

Still only £24.95* for a year's subscription, and we'll send you the issues with parts 1 & 2 of the scanning series at no extra charge. Why wait! *UK only - Europe £28.95, elsewhere £34.95

Books on desktop publishing and the Internet



Brand new title from Robin Williams: The Non-Designer's Type Book

Everything you ever wanted to know about choosing and using fonts.

£18.99 plus £2 p&p (UK) Write, phone or email us for our full list of recommended titles on desktop publishing, graphics and the Internet.



Still the best clip art collection. Supplied with full colour manual and all software needed. STILL £29.95 plus £3 påp (UK)





Deeper and down

Graham Nelson reviews RCI's new port of *Descent*

What comes next in the following sequence: Wolfenstein 3D, Doom, Doom II, ...? If you're a fan of the texturemapped maze boom of the mid-1990s, you'll probably say Quake, the third in the line produced by id software.

id (really, no capitals) had come to an obvious, yet audacious, realisation: that processor power had hit the point where realtime texture-mapping onto 3D structures was finally possible. There was nothing very new about mazes drawn from a 'first-person perspective' point of view, that is, drawn as if seen by the player, rather than looking down from above.

The aptly-named Atari video game WayOut had any number of crude Sinclair Spectrum impersonators. But in the days of 8-bit processors, you'd be lucky to get walls of solid opaque green (say) in uniformly bright lighting. Today you can have tapestries seen by the light of spluttering flares thrown upwards and at an angle. We haven't yet reached real-time raytracing, with shiny vases and reflective tabletops, but give it five years. Texture mapping is already moving into hardware.

The trouble with texture-mapping games is, in a way, also their salvation. If you rush up really close to a wall, the detail on it gets blockier and chunkier, losing all believability: what used to be a tapestry is now a pixellated mess. This is bound to happen, because the computer can't store every last graphic in such detail that you can always zoom in for finer and finer structure. The solution is to make the game-play sufficiently fast and furious that this doesn't really matter, and in many ways the clever thing about *Doom* or *Quake* isn't the graphics: it's the sudden rush of adrenaline as the player enters an unfamiliar, heavily monster-infested area, and is attacked on all sides.

So: there was *Wolfenstein 3D*, a fairly crude game with slightly disturbing overtones – I remember being faintly alarmed to discover that my six-year-old cousin had become expert at throwing virtual knives into the backs of virtual Nazis – and then there was *Doom*, when the maze game came of age. But *Doom* had one big limitation: its levels were constrained to be basically twodimensional, however this was disguised with elegant staircases and ramps.

Pressing Tab to pull up a map showed that the layout made decent sense in 2D; besides, guns always fired horizontally. The eventual sequel was *Quake*, with lavish internal decor and a penchant for catwalks, throwing things upward through crevices, diving at angles through water and so on. But *Quake* was a long time coming, and Interplay Productions had long since brought out *Descent*.

This was all four years ago, and the PC world is up to *Quake II* and *Descent 3*; but RCI are now selling solid Acorn ports of *Doom* and *Descent*, and *Quake* has unofficially existed in a freeware port for six months or more; RCI's official version should be out by the time you read this.

Installations

Like Quake, this game is fully threedimensional – or at least it's a 3D environment bolted together from flat oblong surfaces, as if the entire world had been bought as a selfassembly kit at MFI. That's all right, though, as the domain to be descended is a sequence of space stations, lunar mining camps and so on, where girders and brutal aesthetics are only to be expected.

As a glimpse at the file specifications (www.descent2.com/ddn/specs) reveals, the mines are made up of cuboidal regions joined at angles with doors and textures added to some of the sides. And yet the overall maps, revealed gradually as each level is explored, look like those schematic posters of Tube stations put up when there are engineering works on the London Underground. Rotating or zooming in/out in map-display mode, the levels have an elegance of line about them, with sumps





and corridors in graceful arcs.

But those are my second impressions. My first thought was that it feels like a kind of indoor version of the BBC Micro game *Elite*, because the opposition is made up of colourful spacecraft glued together from convex polyhedra. And the walls were garish, and left me a little unimpressed, but then I turned up the resolution – RCI's port has a nifty feature allowing anything from 320 by 200 to 1024 by 768, the higher-end options intended for *Phoebe*.

I've settled on 640 by 400 at 32-bit colour depth, which gives highly responsive play with no appreciable jerkiness or lost frames.

I'd also recommend cranking up the brightness level to maximum, unless you have good night vision and live in an unlit country cottage. Even at maximum brightness, the light level is still artfully controlled by the level designers, and

it took me a while to twig that firing off little triangular flares is an essential tactic.

Acorn *Descent* comes as a bright red disc containing an installation program and the 'player', together with a high-volume PC release of 'Descent I and II: The Definitive Collection', a three-compact-disc gatefold of *Descent I, Descent II*, some extra fan-written levels for both, and a *Descent II* level editor. This is a little tantalising, as the Acorn player can only run *Descent I*, though it will play the music on the second CD as a background track if you like (I didn't, but then I've never seen the point in giving computer games liftmusic).

The game needs at least 8M free RAM and, although RCI claim that it can be played on a non-StrongARM machine and suggest configuration settings to make this feasible, it crashed out with a stack backtrace on my father's (13Mb) Risc PC 700. Probably this was only teething trouble, as I had an earlyish copy of the game. All the same, I'd suggest checking with RCI that your machine





will definitely be able to run Descent if you haven't a StrongARM.

Descent without down

Perhaps it's time to talk about the plot, but honestly, there isn't much of one, A selection of the solar system's finest mining operations, military research bases and so on, have been taken over by the robots manning them (or roboting them, or something like that) and it seems the only solution is to destroy the bases altogether, pausing to rescue any trapped human hostages for bonus points.

There were times when, like Sigourney Weaver in Aliens, I felt like saying 'Just nuke the whole planet from orbit, it's the only way to be sure': instead you have to shoot up the reactor core, usually down at the bottom (hence 'descent'), and then get out again in the 45 seconds before it blows. Not nearly as easy it sounds, because the lights are suddenly on the blink, what with the reactor core being in a mess and all. My standard tactic is to panic, then hit

> the 'map mode' button, which conveniently stops time while I sit and plan out how to escape. But then, I have no pride. I play at 'trainee' level of difficulty, too. (On 'insane' level, I'm unable even to survive the first chamber of level 1.)

> The morality of Descent is, well, I think I'm going to give up on this paragraph right now, except to say that after enough messages like '6 Concussion



Missiles!' popped up, I began to feel like a third world dictator at an MoD Arms Fair. Still, the instructions say that all the spacecraft are robots, so that's all right then.

Thanks to its orbital habitat, *Descent* has no concept of gravity, so in a sense the one thing you never do is descend. There's no sense of up versus down, except that many of the chambers have light-panels in the 'ceilings'. NASA used to be surprised that astronauts could only relax in space stations when they had established a 'right way up' for themselves and the furniture, but after playing *Descent*, I begin to see why.

My first few games were hopelessly confused. The player's spacecraft can be tilted to either side in both axes, 'left-right' and 'up-down', besides which it can fly forwards or backwards whichever way it's pointing: learning to get around is like taking up a new musical instrument. You learn fast, but in the mean time, we're talking serious embarrassment.

I have been playing *Descent* daily for three weeks now (it's a dirty job, but someone's got to do it) and the sum total of my achievement is that I've reached the end-zone of level 3 on mission 1. The reactor-core on this level is guarded by purple areas, which spontaneously generate robots, so that going anywhere near them is like sticking your arm into a wasp's nest. That's my excuse, anyway. This is a very nice game: better than the screenshots on these pages might suggest.

Product details

Product:	Descent: Acorn Version				
Supplier:	R-Comp Interactive, 22 Robert Moffat, High Leigh, Knutsford, Cheshire WA16 6PS				
Tel:	01925 755043				
Fax:	01925 757377				
Email:	rci@rcomp.co.uk				
Price:	£30				
Pros:	 Classic Many levels with plenty of game play Fast and a good deal of fun 				
Cons:	 Not always beautiful Slightly behind the state of the art 				



Share and share alike? John Pettigrew moves data with Zip Plus

The *Zip plus* drive from Iomega is a relatively new product. Basic Zip drives, with their 96 Mb disks, are becoming very common on Macs and Windows machines for backups and sharing information between computers. The Zip Plus is different because it can be used on either the parallel (printer) port or a SCSI chain. This means that it can be plugged into Macs, PCs and Acorns.

The blue Zip drives are well designed and attractive. Able to be placed on their side or face down, they can fit into very small spaces. There is also a pass-through for you to plug your printer into (and Impression dongles and Turbodrivers do work through the drive).

I tested my Zip Plus on three computers – a Macintosh LCIII, a Compaq Windows 95 computer and my own A5000. The drivers for the first two are Iomega's; the Acorn driver was *PowerZip+* from Alsystems.

Macintosh

Installation on the Macintosh requires a CD-ROM drive. A word of warning – when the installer is run, you are asked whether this is your first installation. Say 'No', even it is. The only difference is that if you say 'Yes', you are treated to a long and boring animated presentation about the Zip drive, which you should already know if you've bought one.

The *Zip Tools* software gives access to password protection of your disks and formatting and backup programmes, among others. However, if you need to move data to or from Macs, you will also need software to read DOS disks.

One problem with the Zip plus on SCSI connections, like the Mac's, is that it must be the only device on the chain. That is, it's not really suitable for permanent connection but, for occasional use, it's fine.

Windows 95

The Windows drivers are supplied on a floppy disk rather than CD. On this machine, I decided to try another facility offered by Iomega – the *Guest* programme. This is an alternative to installing drivers on a machine you aren't going to use often, which can be useful, especially on Windows machines.

To find this took quite a bit of digging around on the floppy disk (about three folders deep) but, once I'd found it, again it worked well. Simply double-clicking the Guest95 icon resulted in the PC recognising and being able to read and write the drive.

RISC OS

Installation of the PowerZip+ software is typically Acorn – drag off the floppy onto the hard disk and run. However, I did have a few problems. First, when it arrived, it totally failed to recognise the drive. This was apparently due to my having been sent an old version of the driver; the replacement was rapidly in my hands and worked fine.

The second problem was that my A5000 refused to read DOS format disks, even though the advertising and documentation said that it should. Many e-mails to the Alsystems support people finally produced a newer version of the *DosFS* module, which solved the problem. *PowerMgr* even allows you to format DOS Zip disks on your RISC OS machine. However, the Zip Tools disk, even though it is readable on both Windows and Macs, is not accessible on my A5000.

My main complaint about PowerZip+ is that the documentation is wholly inadequate, especially when compared with the reams that come with the drive. In addition, the support is not as good as other companies I have come across.

Summary

Using the Zip plus drive, it is possible to move data extremely easily between computers, even if the other person does not have a Zip drive. My first real use, taking a postscript file to a printing bureau, worked perfectly – formatting a DOS disk using *PowerMgr*, printing to a file and simply taking the file to the shop.

My only real reservation is about the drive itself. There has been much publicity about the 'click of death', which was apparently due to a manufacturing problem (now sorted out), and the Zip plus cannot be used in SCSI chains (contrary to Iomega's original publicity).

However, my drive has an annoying buzzing sound when a disk is in the drive, which is worrying when the drives at work are almost totally silent. Alsystems' only response to date has been that they will send the drive back to their suppliers, which will take several weeks.

However, this notwithstanding, the Zip plus is an excellent solution to the portability problem, if you get a fully working one. The price (about £185 including PowerZip+) is quite high, with Zip disks costing about £8 each, certainly more expensive than buying a new hard drive. If space is your only concern, get a new hard disk, but if you need to back up and especially if you need to exchange data, they are a very good option.



Ubi Soft

Risc PC version

£25.00 inc. VAT

ACK DOT COM

Risc PC £35.00 version inc. VAT

COMPENDIUM



"HTMLEdit [v3] is the outright winner" Acom User, Sept 97

"The only HTML editor worth considering" Acom Publisher, August 97

"[HTMLEdit] is going to be hard to beat" Risc User, July 97

"Using the program is simplicity itself" Archimedes World, June 97

"The editor and browser are superb..." Archive, September 97

LockSmith £15 & PCSound Pro 2 now out too! £40



Next Generation WWW Authoring For RiscOS

All-new Versions!



All the tools you need for £105!

The press agree with us when we say that our RiscOS Web Authoring solutions set new standards in power and ease of use. Now, in our quest to produce an even more integrated and powerful solution, we've put together a single pack containing:

HTMLEdit 4+:	Java support, sound and music, link and image checking, syndax colouring and OLE	£53
Enhanced We	eb Toolkit: Visual frames, tables, animations,	
	maps, palette control, drawfile conversion	£30
WebSpell:	A complete HTML-aware spelling checker	£15
Webster XL:	The latest version of our hot new browser with	
	frames, tables, forms, sound and JavaScript.	£25

Also, check out our new SiteMaster for absolute control over your whole site! £25

R-Comp, 22 Robert Moffat, High Legh, Knutsford, Cheshire WA16 6PS

Tel: 01925 755043 Fax: 01925 75737

Email: rcomp@rcomp.co.uk rci@rcomp.co.uk

Free Ads

To submit a free ad to Acorn User, complete the coupon on page 70. 25 words maximum per ad.

- PC Card Aleph 1 586AMD 512 Risc PC 700, AKF60 monitor, StrongARM Risc PC, 66Mb, 17in Risc PC StrongARM, 32+2Mb, cache. PC Pro, PC exchange, PC DOS 7. Sensible offers please. APDL IDEA interface supports 4X IDE UDMA devices c/w manual and cables £40 ono. Tel: 0115 946 8281.
- Swap Typography CD-ROM unused for Draw, Paint, Edit and CLib 3.75 suitable for my little A3000 RISC OS 2. Phone Chris 041 041 3301. (Hounslow, West London)
- A3020 2Mb VGA colour monitor, printer, 60Mb internal HD, word processors and lots of games. Boxed vgwo complete with manuals. Tel: 01493 651601
- Acorn AKF18 Multisync monitor. Excellent condition. Double speed SCSI CD-ROM with enclosure plus power supply. Both for £60 will split, call Ross 01299 270746 (Shrops)
- A3000 RISC OS 3.11, 4Mb, Morley User Port, monitor useful floppies plus numerous games. Offers to Peter 0114 274 6375 (Sheffield)
- Computer Concepts ScanLight
 Games: Holed Out Compendium, Plus interface card and A4 handheld 256 greyscale scanner for Arch/A5000 etc. £50. Tel: 01625 871162 (Stockport area)
- For sale: A3000, RISC OS 3, 4Mb RAM, 80Mb HD, manuals, software inc DTP + clip-art. £150 ono. Mr Wilson 01425 2797474 (Christ-church, Dorset)
- Risc PC 600 8+1Mb, 540Mb HD, 0 RISC OS 3.6, AKF60 14in colour monitor. Canon BJC-200 b/w inkjet. All good condition. All for £500. Stephen, 0181 945 2135 (London)
- Cumana SCSI2 card £125; Turbo drivers (HP) £30; AudioWorks £20; CD Fast2 £15; Note Invaders £20 and Keyboard player £20 or £30 for both. Tel: 0121 745 3163 (Birmingham)

- Deskjet 500C printer, keyboard, mouse, software, manuals £800 ono. Tel: 01223 327858 (Cambs)
- A5000 4Mb, 81Mb HD, ATAPI 6x CD-ROM, IDEA interface, AKF18 monitor. Imp Style, ViViD 5000 plus much more. CDs, games, apps, utils £450 or p/x for RPC+cash (pref 700) John: 01204 571836 ansaphone. (Bolton, Lancs)
- ARM610 processor £40; NEC 32Mb simm £40; AKF18 (needs repair, buyer collects) £30; 200 HD floppy disks pre-labelled £75. Tel: Christian 01285 659872
- Software: Image Outliner £25; 1st Word Plus WP £12; Genesis Plus speech processor, Cyber Chess, Apocalypse, Aldebaran £20. Tel: Christian 01285 659872
- Drop Ship, Grevious Bodily 'Arm £3 each. Phone Dave (01926) 435189
- E-Type compendium, E-Type 2, Black Angel £16 each. Elite £25, Starfighter 3000 £25. Tel: Christian 01285 659872
- Acorn A3010 upgraded with 4Mb memory, 125Mb hard disk and colour monitor. Loads of software provided, £350 ono. Tel: 0113 2268718 (Leeds)
- Hard drive IBM H2172 172Mb unused £30; A310 RISC OS 3.1, 270Mb HD £95; spare floppy drive with cradle (from A310) £25. Tel: 01235 834544 (Oxon, Didcot)
- Risc PC 600, 49Mb, 4.1Gb HD, 2nd HD, PC card CJE 586-133, Scanlight Video 256, Teletext adapter, BJ200 printer, various software & discs, magazines, manuals £800. Tel: 0181 204 5035 (Harrow, Middx)

- monitor, CD-ROM, PC card, Scanlight 256, fax/modem, Epson Color Stylus, £1100. Calligraph Laser Direct £450. Tel: 01704 560829
- TextEase, A5000 with multiscan colour monitor, colour card, gaphics card, SCSI controller card, Artworks, Impression Publisher, Squirrel, all manuals + advanced programmers reference manuals:
 Risc PC 700 20Mb 425Mb HD, 2 £250. Tel: 01703 472221
 - . Sibelius 7 for sale. Latest version for Acorn. Complete with manual. Boxed. Immaculate condition. Why pay £1000? Only £350 ono. Absolute bargain! Tel/fax: 01227 472180
- £12; Compendium: ARCticulate Risc PC 600, 24Mb, 2Mb VRAM, 210 HD+420 HD, SCSI CD-ROM, 586-133 PC card, £675 ono. Ring David on 01424 846213 (Sussex)
 - Wanted: CAD program able to run on StrongARM. David Marshall, Laveyssier 19120, Altillac, France. Tel: 0033 555 991 043.
 - . Games: Sylvia Lavne £5, Saloon Cars £5, Repton 3 unused £10, Printer Citizen 120D £20. Tel: 01227 265802 (after 5pm)
 - Acorn A3000 4Mb RAM, 60Mb HD, all manuals, all disks, • excellent condition, spare mouse plus other items MIDI interface. £200. Tel: 01959 522855
 - A3010 4Mb RAM, 120Mb HD, A30 colour monitor, Oscar parallel port CD-ROM, education software and games, all manuals: £250 ono. Tel: 01753 730930 (Slough, Berks)
 - A3000, 2Mb, 120Mb HD, monitor, video digitiser, printer, PRES system housing+monitor stand. Joystick interface, some software, books and many magazines £65 ono. Tel: 01628 631072

- 2.1Gb HD, 12x CD-ROM, 486 card, Canon BJC600 refills, Fireworkz software manuals, All boxed, £850. Tel: 01444 811716
- A3010 Learning Curve computer as used in schools. Colour monitor, full software package and manuals. Hardly used, Ideal for all home use: £250. Tel: 0181 653 2552
- slice, AKF60 monitor, CD-ROM, RISC OS 3.6, Acorn sound card, 486DX 100 PC card, various software: £800 ono. E-mail harry@hecarpenter.demon.co.uk or Tel: 0190 082 2639
- A3000 4Mb RAM, 60Mb HD, RISC OS 3.1, standard monitor. All good condition, £200. Also Wordz £20. Easy C++ £30. Tel: 01637 878070
- A310, A410, A3000, bits & bobs. All must go. Software and hardware. Call John on 01707 324804 for details (South Herts)
- Wanted: BBC Model B with a copy . of Revs for school project. Contact Chris Webb, 352 Wrotham Rd, Gravesend, Kent, DA11 7PE or 0961 843590
- Wanted: Disks for Pocketbook/ Psion '3' series especially older software. Games packs 1 & 2 are especially required and I will pay well. Contact me via e-mail on richard_goodwin@cyberdude.com
- Acorn A3010 RISC with memory . upgrade to 4Mb plus Start Write and demo games £200. Tel: 0116 2702893

There are more Free Ads on page 32



Si-Plan Electronics Research Ltd

Avenue Farm Industrial Estate, Stratford-upon-Avon CV37 0HR +44 (0) 1789 205849 email adc@si-plan.demon.co.uk





Dave Lawrence and Dave Acton explore the punny world of graphical ditties

Moine's a point Author: Nick Kennedy

One of the most popular programs this year has been the crazy pointer. The first wibbly wobbly pointer appeared way back in June 1996 as a simple Basic program by Andrew Bolt. The desktop version followed in April this year from Dennis Ranke, but without the wibble. Then in July, Alex Thoukydides added this back in for what we thought was the end of this little series!

This update from **Nick Kennedy** has proved necessary as it turned out that Alex's code didn't run on a Risc PC 600 or anything earlier. This was most likely due to the change in the re-entrancy status of OS_Word 21.

"The program works on a vsync event. Code run on this event

cannot use non-reentrant SWI's. The PRM's define the reentrancy of OS_Word 21,0 as 'not defined' which means that it is subject to change.

"The way round this problem was to change the code to run on a ticker event using 'OS_CallEvery' instead of the vsync. This might be slower, although I obviously can't easily test it without using a more recent machine. However, it works.

"While I was at it, I corrected the error trapping code in the initialisation routines which had a couple of MOV's the wrong way round.

"To change the interval between updates, alter the value of the variable 'interval' near the top of the program.

Of little help to you Author: Jamie Wilson

Well, in fact this could be of great help to you in a little kind of way. **Jamie Wilson** didn't like the bulky standard interactive help window, preferring instead the on-the-spot help style of Windoze. The result is

SmallHelp.

When you run SmallHelp for the first time, its icon will appear on the icon bar. This allows you to change certain settings and see who it's written by. Since SmallHelp is the sort of utility you might just want to hide out of the way, when you are happy with the settings you can remove



the -iconbar parameter at the end of the last line of the *!SmallHelp.!Run* file. Next time the application is loaded, it will just lurk in the background. To set up *SmallHelp*, select *Options* from the iconbar menu.

> "The open delay is the time in centiseconds between when the mouse stops moving and the help window appears. If you do not wish it to appear unless asked for by pressing F10, then type 'OFF' or increase it past 999. If you have a fast machine and you want it trailing the mouse, you can set it to 0 so it

appears immediately.

"The close delay is the time in centiseconds between when the help window was opened and the help window is closed. If you do not wish it to close unless the pointer is moved then type 'OFF' or increase it past 999. If you are a very fast reader you can set it so that the window is open for 1 centisecond."

The other options are self-explanatory and determine the appearance of the help window. *SmallHelp* uses *INFO regular Justin Fletcher's wimp libraries.

As with all applications and programs that you might like to modify, *SmallHelp* must be copied to a writable medium (eg your hard disc) before tinkering with the *!Run* file. You might like to install *SmallHelp* automatically on boot-up, in which case put it in *\$.!Boot.Choices.Boot.Tasks*.

Christmas 1998 Acorn User 57 http://www.acornuser.com/



Stretch Armstrong

No matter how many bells and whistles are available on the desktop there will always be room for more. Our most recent contribution to the world of desktop gadgetry comes from Thomas Leonard. Despite pioneering a number of features in the realms of the WIMP interface, RISC OS is somewhat lacking in some fields. Windows allows a window to be dragged by any edge or corner, X even adds little skinny boxes round the outsides of its windows to indicate a drag is possible. We're limited to moving with the title bar and dragging the bottom right hand

Author: Thomas Leonard

corner. Thomas' utility Resize provides yet another method of, well, resizing windows.

The utility runs as a filter and lives in a relocatable module. Simply doubleclick it to start it running. You'll have to *RmKill it to remove it. Once loaded, to use it move to the 'back' icon (the one in the top left hand corner), press and hold down Adjust. If the window can be resized it will be outlined and covered in a 3x3 grid of squares. Move the mouse over the edge you want to move (still holding down Adjust), drag the edge to its new position and finally

release Adjust. Fairly obviously you can drag one of the corners to drag both edges at once.

If the window is partly off the screen moving towards the edge of it will shift that edge back onto the screen. Be careful if you cross the window over - for example, drag the bottom edge up over the top edge, although this works (the window is placed within the destination outline and not reflected!) the final position will be slightly wrong due to the size of the scroll bars and title bar. This may mean that the title bar goes off the top of the screen!

Backdraft

Author: Jan Vibe

I mean drop. Well, you know how it is - we get so many submissions involved backdrops we've run clean out of puns. Of course, under normal circumstances, we'd just employ a pun of the author's name, but since the author in this case is none other than the great Dane Jan Vibe, we've run out of puns for him too. Oh well, you'll just have to be content with the program.

"The boot sequence used in the RISC OS 3.7 is, to say the least, a complicated affair. Among a lot of other tasks it performs on startup, is the selection of a backdrop.

"The desktop backdrops are situated in \$.!Boot.Resources.Configure.Textures. In this directory is a Basic program which selects a random backdrop. I thought that this program was run when the computer was booted, and it puzzled me that the backdrop was always the same one (T2).

"After a lot of detective work, I found out that the Basic program is never invoked - instead the backdrop is set by an obey file, Configure, in the

\$.!Boot.Choices.Boot.Tasks directory. "The Basic program is also a bit simple, in that it can only select between the



backdrops in \$.!Boot.Resources.Configure. Textures, and adding more sprites would mean that the program would have to be

rewritten to be able to select the new backdrops. "I wanted a random backdrop every time I booted my

computer, and to be able to add new backdrops easily. so I wrote the application !Textures, which randomly selects one of the backdrops in its own directory. It scans its own directory for sprites when it is invoked, so new backdrops can be added by copying the backdrop to the !Textures directory.

"If this application is placed in the \$.!Boot.Choices.Boot.Tasks directory, it will set a randomly selected backdrop up each

time the computer is booted. Unfortunately, the obey file Configure is placed in the same directory, and will change the backdrop back to plain old T2. To make the !Textures application work, this obey file will have to be rendered inactive. It consists of two lines:

Backdrop -tile BootResources:Configure.Textures.T2

if "<Wimp\$Font>" <> "" then

/BootResources:Configure.FontChange

"The top line is the one which sets the backdrop. It can be rendered inactive by putting a 'l' in front of it. Dont make any changes to the second line. Now, the computer will display a randomly selected backdrop every time it is booted."

Jan has included a selection of interesting backdrops by way of examples.



Subterranean mammalbashing (part II) Author: William Curson

Let us take you back, gentle reader, to the October 98 issue in which we featured a delightful game for all the family entitled *Whack-A-Mole*. We intimated that a few appropriate sound effects might add a new dimension to Philip Mellor's desktop original. Well, good news gentle reader – **William Curson** of picturesque Driffield has obliged. So make haste, and run the all new *Whack-A-Mole*, and relax to the soothing chrrr-doings as you thump the furry little blighters back into their underground dwellings.

"I have edited PROCset_icon_string so that every time it is sent a 'whacked mole' sprite to be drawn by PROCclick_mole it sets off an appropriate sound effect. I have also added two options to the menu *Sound On/Off* and *Sound Dir*. The latter opens the sounds directory within which is the RM file *Hit*! which is the sound effect. This sound effect can be replaced with another as the user sees fit (full details of how to use these options are included in the *!Help* application inside *!WhakAmole*). "

Ang man Auth

Author: Peter Howkins

Peter Howkins has proved he's as mad as the rest of us – *AngTastic* is a 1K game inspired by the dungeons and dragons-fest that is Angband. The idea is to collect the flasks of oil while avoiding the red worms. As you progress up the levels, more and more red ws, sorry, worms appear making your yellow ! – sorry oil – collecting task that much harder. Use Z and X for left and right and ' and / for up and down.

The budget version has been lovingly hand-whittled from a previous Howkins game called *cakedash*, it's essentially the same apart from the lack of user-defined characters, sound effects and highscore table. If you'd like to see this, try *http://www.arcsite.de/hp/flibble/* and follow the links to download.

Ethanol and isoprene, side-by-side in perfect harmony

Ah yes, how different the world of music might have been had McCartney and Wonder been organic chemists (*You're not well, are you? Ed*). However, if hydrocarbons are music to your ears,

we have the application for you. **Adam Granger**, following on from the success of *Chemistry* has come up trumps again with *Carbon*. If you've ever wanted to see the tetrachloroethene molecule, this is the one for you – the author describes his creation...

"You type in a systematic name of a carbon compound, and the program draws its displayed formula (click on the *!Carbon* icon on the iconbar to get the input box.) For a demo of compounds select *demo on* from the iconbar menu.

"The program will draw the majority of carbon compounds covered in the first year of A-level chemistry and all carbon compounds in GCSE chemistry."

Organic or carbon compounds include all compounds based on carbon, excluding carbonates, CO and CO_2 . Examples include ethanol, butane and octane. Often







Author: Adam Granger

such compounds have two names – common and systematic. For example, TNT has the systematic name Methyl-2,4,6-TriNitroBenzene, which tells you about the structure.

"!Carbon uses systematic names which enable the program to 'understand' the compound. The program follows the IUPAC (International Union for Pure and Applied Chemistry) system. !Carbon does not demand absolute accuracy however everything needs to be spelt correctly. As shown below !Carbon can understand incomplete names very easily:

User input !Carbon understands as:

TetraChloroEthene 1,1,2,2 TriChloroEth-1-ene

Butadiene

Buta-1,2-Diene

Spaces, hyphens, brackets (and capitals) can be omitted. This is just a demo version of the full program, so you can only view the compounds and not save them.



Programmers Toolkit

Programmiers

Toolkit

All the programming help you could need

M

Basic Programmer's Toolkit and Wimp Programmer's Toolkit just £7.50 each or £13.50 for both

These complementary discs provide programs and utilities to make the task of creating Basic programs and multitasking Wimp programs that much easier allowing you to concentrate on the important parts of your work.

Written by

programmers who know the pitfalls, these two disks provide genuine help for you to build up your skills and abilities in this potential minefield of difficulties.

Available now so order today

FORM	 YES! Please send me: Basic Programmers Toolkit for £7.50 Wimp Programmers Toolkit for £7.50 Both Toolkits for just £13.50 Add £1 P&P per item if ordering from Europe Add £2 P&P per item from outside Europe Value of order £ 	Address	
ORDER	I wish to pay by: Cheque/postal order (payable to Tau Pr Credit Card (Visa/Barclaycard/Masterca Credit Card No: Expiry Date: Please tick here if you do not wish to receive promotiona	rd/Access)	Send your order to: Toolkit Offer, Tau Press, Media House, Adlington Park, Macclesfield SK10 4NP.

The Basic Programmers's Toolkit contains the following applications with explanatory handbook:

- Basic Program Printer
- Basic Program Formatter
- SWI Manager
- Basic Program Analyser
- Basic Program Cruncher
- Basic Program Differentiator
- Basic Program Monitor
- Basic Help
- Library of Basic Routines

The Wimp Programmer's Toolkit contains a complete handbook and these applications:

- Window Template Editor
- Menu Template Editor
- Wimp Monitor Utility
- Template Information Utility
- Icon Locator
- Shell Wimp Program
- Single Window Shell
- Wimp Flags Generator
- Poll Mask Generator
- Basic Procedure and Function Analyser
- Basic Variable Lister
- Wimp Debugging Utility
- Multitasking Memory Viewer
- Wimp Message Monitor
- Wimp Library





Isn't that Damon Allbarn?

Oh no, it's just a bit of fractal – sorry. Those of you with particularly good memories, or particularly sad and empty lives, may remember a short and almost popular series we ran a good while ago. It was called something like Great Album Cover Simulations of our Time. Well, our next offering begins a new theme which we shall call Great Back-of-Album Picture Simulations of our Time.

Thomas Madams' latest graphical offering produces a foggy landscape that bears an almost frightening resemblance to the picture of Blur on the back of their eponymous album. In fact, if you squint a bit, you can just make out their gangly art-school frames as they wander bemused amongst the mists of the

moors. Either that or there's something unpleasant on your monitor. I digress. We had better let Thomas explain what his program is really for I suppose...

"FogScape is the start of quite a large project that I have been working on for a while. What it does is generate a fractal landscape (very slowly) with depth shading, fog effects, light sourcing, weathering and all that gubbins. The actual generation of the landscape is done in ARM code, and as a result is pretty quick, unfortunately, I haven't got round to coding a decent polygon routine so sadly, the drawing of the landscape is done in BASIC (ouch!).

"The program works by setting the corners of a square array to random values

and then the midpoints of the corners and each of the edges are found. These points are set to the average of their neighbouring points and moved up or down by a random factor determined by *roughness*% at the start of the program. This process is repeated for each of the new squares formed and for each of the squares formed by these squares and again for each of these new squares formed and again, and again, and again....

Author: Thomas Madam

"The process is done *divisions*% times and this can be set to as high (or as low) as you like (time and memory willing)."

Thank you Thomas – we look forward to the full ARM version and to any other Album-back simulations our creative readership may care to shower us with.



Don't call me Swirley Autho

Author: Graham Stratton

According to **Graham Stratton** this useless program generates a lens which then warps the picture underneath it. All I can say is I don't think this came from a pair of prescription spectacles from Messrs Dolland and Aitchison.

The effect is reminiscent of one of the



Windows 'screen savers' (How many screen savers do you know that actually save the screen?) in which the desktop is swirled about in a spirally circularly fashion.

Graham's program needs a sprite file to work with – one is supplied, but to

keep disc space to a minimum it is rather sparse. We highly recommend replacing the rather bland image in 'image' with one of your own. The sprite must be 640x480 in 256 colours (a Mode 28 screen). You can always use *ChangeFSI* to tweak the size of an existing picture if you don't have one exactly the right size. The sprite should be called 'swirl' and the file should be called 'image' otherwise you'll be given an error message when you try to run the program.

When you do run the program you'll be prompted for an amount of swirling between 0 and 9. Try about 3 or 4 to get the idea of the effect before overdoing it with 9 or being rather disappointed with 0. Once the image is drawn waggle the mouse about to see the effect.

What is possibly most impressive is that the code is only 892 bytes long. It does need a 5K look-up table, but only 6036 bytes for a complete swirly doohicky is not bad at all.

Unfortunately, Graham has not supplied any source code, so we are unable to divulge how the program works or suggest some modifications.



The early arrivals for the logo ball

Despite the seemingly endless deadline to our logo competition, I think by the time this issue appears the line will truly have been deaded. Not that will stop the more persistent of entrants – we're still getting

nonsense generators! We don't mind of course, in fact, the best entries often appear months after the closing date...

To keep up the interest before the winners are in and announced, we thought we'd slip in one we prepared earlier. *Fonz*

would actually not qualify for the competition proper as it doesn't last two seconds, in fact, it goes on for ever! We just couldn't think of an easy way to stop it.

The demo attempts to emulate one of the more arty effects advert and movie credit designers seem fond of these days. It takes the five characters * I N F O and randomly choses a font for each letter, upper and lower case are freely mixed and even the positioning of the letters is jumbled (although the general left-right convention of english text is preserved). The program will freely choose from all the fonts available on the current font path and because of the caching nature of the OS, it does tend to eat large amounts of memory.

This does have the advantage that once the fonts are cached the rendering of the string will become considerably quicker. On my system with 60 or so fonts





about 2MB is used after running the program. It is highly advised to allocate about this much space to the font cache before running the program, without it the poor old font manager will tend to rather thrash your disc plotting the letters.

If you are interested, the program is remarkably simple to follow: lines 40-80 set up the screen and font colours. lines 110-150 use the SWI call **Font_ListFonts** to find out the number of fonts available. The main loop of the animation starts at line 170. The next few lines deal with waiting for a screen VSync; clearing the shadow screen memory and preparing to plot the screen.

The loop at 230 picks the letters one at a time from the string, randomly changing some to lower case. A single call to **Font_ListFonts** is used to pick a random font from those available. **Font_FindFont** is issued to prepare the

> font manager for using this font. A fixed font size of 64 points is used. The call returns a font handle which is then passed to **Font_Paint** to render the character. The x and y coordinates are randomly generated on the previous two lines. Both are

multipled by 400 as the **Font_Paint** expects its coordinates in millipoints. Finally **Font_LoseFont** is used to discard the font handle.

If anyone can think of a good way to fade in the logo, and more importantly how to tastefully end it after two seconds we'd be interested to see. Perhaps we could run this as a sub-challenge.



MightyMouse II

Author: Michael Stirling

Cast your minds way back to September 1995. In that month we announced the new A7000 machine and published our first National Lottery program. It was also the month we provided an invaluable utility for left-handed users call *MightyMouse*, which allowed the Select and Adjust mouse buttons to be swapped. Well, the original author, **Michael Stirling** thought it was high

*QUIT

All programs, applications, hints, tips, this, that and the other to our usual haunt please:

*INFO, Acorn User, Tau Press, Media House, Adlington Park, Macclesfield SK10 4NP

or, e-mail us (including your real address please) at: starinfo@acornuser.com

No e-mails longer than 100K please. Screenshots, background info and ideas for customising your program are appreciated. Remember that cover-disc space is limited, so while we might enjoy that 1.6Meg adventure game, we won't be able to share it with the readers.

Please put your name, address and program title on every disc and include a text file containing your name, address, disc contents and program details. An SAE will ensure your discs are returned. If you are responding to one of our challenges, please mark your envelope accordingly. *info submissions only please. time for an update, so here it is.

"I recently bought a Risc PC and as with many machine code programs, *MightyMouse* falls over on the StrongArm. I expect that like me, many other *MightyMouse* users were unhappy about this.

"I have now upgraded the module so that it will work on StrongARM, as well as the earlier processors. I have also taken this opportunity to improve the layout of the original source code and the contents of the !Help file. Version 1.01 is functionally identical to v1.00.

"The bit that caused a problem was the SWI post-processing routine, modelled on the programming example in the PRM page 1-107, which now no longer works. The StrongARM PC is 8 bytes ahead of the current instruction, while earlier processors are 12 bytes ahead. This caused the SWI-calling instruction to be executed repeatedly, crashing the computer. My new version calculates a PC offset which is compatible with both types of processor. If you are interested in how I have achieved this, load the source code *MightySrc* and search for label '.intercept'. The modified code starts from there."

Just in case you haven't got the September 95 issue to hand, the module is very simple to use providing a single command – *buttons. This takes a parameter from 0 to 3:

- 0 buttons normal
- 1 buttons swapped
- 2 buttons normal and stored in CMOS
- 3 buttons swapped and stored in CMOS



Using Notice Board with Draw or ArtWorks and text files you can create colourful multiple-page, 'posters' and run them continuously onscreen. Widely used in schools for Open Day and class work presentations, and by businesses, Notice Board provides an ideal medium for the display of information at schools and exhibitions, in reception areas, libraries, etc. For use with RISC OS 3.1 or later. Site licence £105.

Single user £35.00 Site licence £105.

MultiLink

Don't lose all your hard-won BBC data, use MultiLink to transfer data effortlessly between old Acorn 8-bit computers and RISC OS 32-bit machines, including the Risc PC. Easy click and drag operation. Machines are linked by serial cable.

With serial cable: £29.95

Draggie

The Professional Application Launcher

For fast on-screen access to your most frequently used applications, games, files or directories Draggie pull-down menus are the complete answer. £7.50

Notes

The 'sticky note pad' for Acorn computers Create notes, reminders, etc, on your computer for yourself and others. You can 'stick' Notes on to files or directories and have them appear at specific times on-screen, on starting up or when a file is opened. Now only £7.50

Montage **Creative Fractal Art**

Create your own stunning fractal art pictures with the Montage program. Working in interactive mode Montage builds the images as you work, fast! Requires minimum 2Mb, 4Mb for hi-res pictures.

Decidedly the most original and unusual package I have seen for a very long time...once you have digested the instructions, Montage is a fascinating and enthralling program." RISC User Montage runs on Acorn machines (RISC OS 3.1 or later) and on the Risc PC.

Single copy: £35.00 Site licence £105.00

The Really Good Software Company 39 Carisbrooke Road, Harpenden, Herts. UK. AL5 5QS Tel/Fax: 01582 761 395

E-Mail: sales.rgsc@argonet.co.uk Web: http://www.argonet.co.uk/sales.rgsc

No VAT. Post/packing add UK & Europe £1.50 Other countries £5.00. Cheques, with order please, made payable to The Really Good Software Company. Official orders welcome.



picture book 2

".. for rolling presentations Notice Board excels." Acorn User

Extra Features Lower Price! The fun way to discover words and numbers Picture Book 2 makes reading, spelling and counting easy and enjoyable for all children The six Picture Book programs offer varied and interesting activities, and there is a phonic alphabet to help ensure correct pronunciation. A wide range of setting

> options allows each program to be matched to an individual child's ability. This version of Picture Book 2 also includes RGSC's

use with the Picture Book programs.

Single user: £24.95 Site Licence: £95.00 Picture Book 2 can be run on all Acorn RISC OS computers. Minimum system requirements are RISC OS 3.1 or later and 2Mb of memory.

!AlphaEdit utility to help you create your own alphabet files for

A Picture Book 2 Demo disk is available. Send £1 (coin or stamps) to cover post and packing, and pay £23.95 when you order the full version. If you have a copy of the original Picture Book program (BBC or Archimedes versions)

return it with your order and receive a copy of **Picture Book 2** for just £20.00.



- Full text handling and style recognition
- EurekaTable and Tablemate table support and conversion
- Bitmap and Draw graphic handling and web production
- CMYK, RGB and HSV colour support
- Definable link colours
- Meta Options
- Links Database



Ovation Pro to HTML Converter



Freephone 0500 121 242 Email software@levens.co.uk Web www.levens.co.uk/software available 16th october 1998

All the fun of the fair

Sherston Software (01666 840433) have released yet another title for infants. Following hot on the heels of the *123-CD* and the Oxford Reading Tree *Rhyme and Analogy Activities*, *Science Fair* is the third multimedia CD-ROM for infants that Sherston have published since September.

According to Sherston, *Science Fair* is the result of numerous requests from infant teachers for software to support science work in their classrooms. Set in a funfair, children can choose from five different fairground attractions that deal with physical processes including electricity, forces and motion, light and sound, the Earth, Sun and Moon in space, and day, night and the seasons.

Sherston's Education Director, Bill Bonham remarked: "The *Science Fair* has been one of the most involved projects we have ever undertaken. It has been no easy task to portray, on screen, some of the tricky early science concepts that are outlined in the National Curriculum and Scottish documents, but we are very pleased with the results. It is a credit to Sue



Rankin's design (the best selling co-author of *Tizzy's Toybox*) and Paul Hutchinson's illustrations (of Sherston *Naughty Story* fame) that these early science concepts are presented so easily and naturally for young children in a fun activity format."

Key features of the CD-ROM include two levels of difficulty, narrated text, animated help and correction routines and record keeping, as well as a high standard of graphics and presentation. Price £40.00

Table tests

DEVELOPED to support the BBC schools TV series, *Megamaths Tables* from Logotron (01223 425558) aims to help 7 to 11-year olds with their multiplication. Set in a castle there is a themed room for each table containing a different mathematical puzzle and learning game. Help and rewards for speed are built-in with plenty of bright graphics and lively characters. The price is £39.

Diary date

Tickets are free to this showcase event for British ICT. This year the BETT awards will run differently than in previous years as schools and education professionals will have the



opportunity to nominate their favourite suppliers or products. A panel of leading industry figures will decide on a shortlist which will be put to schools, further and higher education organisations who will then vote for the overall winner. If you'd like a voting form contact Caroline Roe at EMAP on 0171-505 8000.

Seminars are an important part of BETT and this year promises to start each day with a Keynote Lecture delivered by leading industry figures such as Alastair Wells, Owen Lynch, Nigel Paine and Anthea Millett. For instance, the first day of the conference begins with the BESA lecture given by Netherhall's Alastair Wells who'll be looking at the ICT needs of pupils and staff. Called *The school's role at the centre of an*



online community he will consider the costs of ICT and the benefits to a school of being at the centre of a learning community. Elsewhere they'll be

sessions by Ofsted focusing

on some strengths and weaknesses in the teaching of ICT and learning IT capability, while Robin Ritzema will be looking at the significant progress being made in the implementation of the Government's major education ICT programme. The plan being to discuss the developing policy agenda, looking ahead for the UK and out across Europe and beyond.

Tickets for seminars are available at a 50 per cent discount early bird rate until 1 December 1998. The full fee is £20 for the first seminar with each additional seminar being £10. Remaining seats are allocated at the show on a first come first served basis and will be free of charge. Full information on seminars is available from the special seminar fax line on 0336 423440.

Geography freebies

THE Advisory Unit (01707 266714) has launched the Aegis Newsletter offering an Aegis Masterclass, a free Web-based resource designed to help teachers share their ideas and practical experience of using *Aegis 2* software with upper primary and secondary school students.

Log on to www.advisoryunit.org.ukl/aegis/ aegnews1.html for your Masterclass which details the objectives of a particular lesson plan, the topics and classroom activities covered, as well as the Geography, and ICT skills developed using the plan.

Brush up your maths

IF revision software is what you're looking for then AVP (01291 625439) have just the thing. *Revise Mathematics* is designed with GCSEs in mind as well as Further Education courses dealing with basic maths skills, it can both diagnose and correct faults.

Covering arithmetics, algebra, geometry, trigonometry, ration and proportion, transformation geometry, 3D geometry, statistics, sets and probability, graphics and functions among others. There is immediate and extensive help for wrong answers and a correct solution is shown for each question. Priced at £65 for a 5-use school site licence. If you want a home version the cost is £39.95.

Prize winners

ANGLIA's Internet-based curriculum service, Anglia Interactive has been awarded an EMMA (International Multimedia Award) in the Online Learning and Home Learning category. Commenting on the award, Peter Stibbons said: "Developing a dynamic and interactive educational service on the Internet has been one of the big challenges facing our industry."

Compose yourself

ESP (0115 9444140) have a new version of *Compose World* for £65. As well as including extended editors and advanced sequencing facilities, it can be used effectively for musical composition and performance as well as offering support for the teaching and learning of music whether your at Key Stage 1 or 3.

Also look our for a new range of support material accessible from their Web site. Certain classroom activities and resources can be downloaded for free, while specific worksheets, flashcards and so on can be bought directly from ESP whether you're a music specialist or non-specialist.

imaging technology

Studio Quality Products for the Full-time Graphics Professional and the Dedicated Enthusiast

PHOTODESK 3 is the *LAMENS* package which defines studio quality image editing and artwork on RISC OS machines. It is easy to use but has many powerful features, including **LAYERS** and a sophisticated colour management system (CMS) for the full-time graphics professional. Most of the extensive programming effort invested in this project has been concentrated upon ensuring a predictable user interface with an integrated design and most importantly, all operations have been engineered to the *highest quality* possible. £299.50 (£254.89 ex VAT) PHOTODESK2 is still available, retaining the CMS but not layers, now only £199.00 (£169.36 ex VAT) PHOTODESK3 LIGHT, an economic alternative to PHOTODESK3 retains most of its creative features apart from the Colour Management System, Layers and some

features essential to the professional user. £134.75 (£114.68 ex VAT) Plug-in Effects Packs are

available for all Photodesk packages. Each pack contains 10 special effects: £19.95 (£16.98 ex VAT) PHOTODESK3 NOW SHIPPING!

Purchasers of Photodesk 3 or Photodesk Light will receive a complimentary CD-ROM of useful resources, utilities and Tutorials. This CD is available to existing users for £24.95.

TopModel 2 the 3D editing package from Sincronia of Italy has been rewritten to include many new features including an easy to use interface and the fantastic **GEMINI** graphics engine. This package is particularly suited to artists and designers, because for the first time it is possible to model objects in a single 3D view. New features include texture,

chrome and bump mapping, lens flare, up to 1024 light sources, fog & haze and many many more! £152.75

New Version of TM2 including NEW CD-ROM and NEW plugins: TopMotion, the long awaited animation suite, and Top3DFonts!

PhotoLink is an Acorn multi-driver for the most popular makes of digital camera.
Cameras currently supported include the new Olympus range including the fantastic
C840L. and the C1400L SLR Zoom"...if you buy a digital camera at all it should be an
Olympus; personally I would also opt for the Spacetech driver'' *Richard Hallas, Risc*

User. "...the results from the Olympus/Spacetech combination are stunning... .Spacetech's offering is by far the most comprehensive..."*Stuart Tyrrell, Acorn User.* Superb hard copy can be obtained via our FotoFun printer or Canon PhotoReal PhotoLink is available on its own at £69.00 or bundled FREE with a camera.

New Prices! C1400L <u>£999.00</u> (was £1299) C840L <u>£499.00</u> (was £599) (including VAT)

PhotoReal is the Acorn driver extension for the Canon BJC4300, Canon BJC4650, Epson Photo, Photo700 and EX printers with photo-realistic capability. PhotoReal makes use of the same advanced techniques for producing high-quality four colour separations as Photodesk and comes ready calibrated for the special dye-based inks used for photo-realistic printing. A calibration application is also supplied to allow you to tailor the results to your own specification Driver only £69.00 Inc.VAT. or FREE if purchased with printer! example: Stylus Photo700 + Driver £272.60 inc.VAT

> A new presentation package on CD-ROM from Spacetech*

Makes your slide shows quick and easy to create!

• Start building your presentation 5 minutes before the lesson? - No Problem

- Use your existing work in a presentation? No Problem, just drag 'n drop it in!
- Powerpoint? Forget it
- Only £29.95 inc.VAT

Spacetech Ltd

1 The Courtyard, Southwell Business Park, Portland, Dorset, DT5 2JS, U.K. Telephone: +44 (0)1305 822753 Fax: +44 (0)1305 860483 Email: sales@spacetech.co.uk Web : http://www.spacetech.co.uk

NEW! Olympus C840 L 1280x960 NOW Only £499!











MUST admit to assuming that *Dazzle* was a simple to use art package for kids. Better than *Paint* but not really worthy of serious contemplation. The new version, *Dazzle Plus*, dropped on my desk and I was more than a little surprised.

What you get is indeed a simple art package, but by altering the settings you can make this one package cater for the keyboard and artistic capabilities of a very wide age range indeed. For instance, younger children can use the program with large tools – also useful for children and adults with limited movement or who are visually impaired. At the same time the number and variety of tools can be adjusted to the needs of the child.

You choose your configuration options from the iconbar menu and you can have a number of settings saved under different names. Adjustable features come under

four headings: tools, windows, menus and palette.

With the tools you can set the width of the toolbar, attach it to the side of the canvas or let it float free as well as set the size – Tiny Tools. Removing tools is a matter of holding

down Shift and dragging the tool you don't want off the toolbar. You can enlarge or reduce the size of the tools in a similar way. To add tools simply drag them from the tool palette. Similarly you can remove/add items to the *Dazzle Plus* menus.

Colour palette choices give you the option of having a colour wheel, standard desktop palette, long/medium/mini 256 colour palette, simple or toolbar options. The colour wheel works best for those using 16 million colours while the simple palette contains 10 colours but these can be lightened or darkened by using the arrows and you can mix colours.

A configuration setting saves options such as brush size, number of sides on a polygon, thickness of spray, and



Jo Giles looks at detail at a new drawing package with an educational bent

filled/outline shapes. If *Save Stamps* is clicked in the palette choices any stamps in the Stamps Window will also be saved with the configuration file and automatically loaded. This is useful for setting up *Dazzle Plus* for specific uses and users.

Colourful options

For new pictures *Dazzle Plus* uses a default screen size – Normal which is 640 x 480 pixels – but you can change this to work in A4, A5, portrait or landscape depending on

your needs as well as 15, 256, 32 thousand or 16 million colours.

The main program screen is split into three areas: canvas, toolbar and palette, but how they look will depend on how you've set up the program in the first place.

Colours can be mixed be choosing an initial colour and clicking on a second with the menu button. The new colour appearing in the colour display box with the process repeatable again and again until you create that perfect colour. All palettes have a colour selection area some contain a slider bar which lets you set the transparency level between 0 and 97 per cent. This then applies to all colours and effects including stamps.

The tools themselves are pretty much as you'd expect: pencil, square brush, round

brush, diffuser brush, tin, spray, water brush, stamp, clone, shapes (polygon, star, rectangle, parallelogram, triangle, circle), radial lines, straight line, text, fill and so on. Some tools are more unusual, such as the rainbow and symmetry tools. If you're not sure what something is leave your mouse over it and wait for the description to pop-up.

Several of the tools have menus associated to adjust how they work. For instance, select the round brush and you see that the brush size can be changed in three ways, input a new value, use the arrow keys to cycle up or down or simply drag the brush mark to the size you want.

The effects are quite amazing particularly when it comes to making fuzzy pictures with the diffuser or applying water to a drawing using the water brush. Some of the younger children I tried the package with really enjoyed using the more unusual tools.

The rainbow tool lets you create a brush that changes between a range of colours as you paint. You can create your own colour range and produce some rather striking or subtle effects.

You can select any size of area you want and cut, copy, move, scale or process it in a number of other ways such as flipping, tiling or tinting. You can make your initial selection as a box or opt for an irregular shape which works best if you want to cut an object from the canvas. You could then use this as a stamp without ever accessing the stamp window.

Finishing touches

Saving is as you'd expect but I was surprised to see that you can save as Sprite or JPEG as standard. You can also load/import images. The manual is good as far as it goes but I would have liked to see a Guided Tour or sample projects for those new to this type of package.

Though this works really well in the classroom, letting teachers set the program up for different children and lessons, it is an easy to use program which will grow with a child at home too.

Produc	t details
Product:	Dazzle Plus
Supplier:	Granada Learning Ltd, Granada TV, Quay Street, Manchester M60 9EA
Tel:	0161-827 2927
Ages:	5+
Price:	£75 single user, £150 site licence (exc. VAT, £3.50 p&p)
E-mail:	sales@granada-learning.com
Web:	www.granada-learning.com





Subject of the second s

A selection of the best geography packages around

Exploring Maps

Introduces the concept of maps and mapping through three sections: What is a map? introduces maps, mapping, the use of the symbols and features. Working with Maps presents maps of the world, Europe, the Americas and Britain. Each map has three case studies, presenting information using pictures, text, audio and video. An interactive key enables pupils to build up information on maps to make them as simple or complicated as required. Activities to be completed offscreen are included. Case studies are accessed via an index or by clicking on hot keys on individual maps. Finally, Map Skills comes with questions and activities aimed at developing an understanding of basic map skills. Ages 7-11 £59.99

Granada Learning (0161-827 2927)

Globe Maker

The National Curriculum requires children should be aware that world can be represented as a flat surface. Choose from 20 different elements – oceans, mountains, political and so on – print a pattern which can be cut out to make a 6in globe. Ages 7-14 £45

Soft Teach (01985 840329)

Landmarks Series

Software programs developed from the topics in the landmarks BBC TV series and covering, history society and geography. Each program has a computer child guide to answer questions and help with the exploration: Columbus, the Aztecs, Civil War, Victorians, Elizabeth 1, Second World War, Project Egypt, Rain Forest.

Ages 7-14 £27 Logotron (01223 425558)

Langdale Primary

A study of the Langdale Valley in the Lake District using OS maps, diagrams and ground photographs, statistics, charts and sounds. You can tread the paths and see the views as well as going behind the scenes to use the resources provided. Ages 9-11 699

Creative Curriculum Software (01422 340524)

Local Studies

Learn map symbols, grid references and draw own local maps. Uses OS maps and you can attach information and pictures to any part of the map, display traffic surveys, house and shop surveys too. Useful for farm surveys or nature trails. Ages 7-14 £45

SoftTeach (01985 840329)

Map Detectives

Full of mystery and fun, this requires children to make decisions which will affect the course of their adventure. The contents include: grid references, distance and scale, map symbols, compass skills and route planning. The program incorporates photographs, animations and sound all inter-linked into an ingenious story that changes every time you take up the challenge. The pack also includes a wealth of support materials, including: OS style maps, road maps, street plans and underground map. Ages 8-13 £44.95

Sherston Software (01666 840433)

Map Skills

Complete packs useful for a wide age group. Topics include grid references and following a route on an OS map. As well as the disk the package includes two OS maps (Plymouth and Telford), worksheets and teacher's notes. Ages 7-14 **£49 95**

Pebbleshore Information (01483 503121)

geographical information. Databases, spreadsheets and graphs can be integrated with maps. Provides a powerful tool for interpreting and presenting geographical data. Topics covered: world development, regional disparities in Europe, world wildernesses, unemployment in UK regions, acid rain and ozone in UK, field work, history of US colonies and colonial Williamsbury. Ages 7-14+

£100

Advisory Unit (01707 266714)

Around the World in 80 Days

Contains activities introducing children to a wide range of geographical skills such as grid references, longitude and time zones, latitude, contours, bearings and European and world geography as they journey around the world and plot their progress on the maps. Ages 9-12 £44.95

Sherston Software (01666 840433)

Earth and Atmosphere

PictureBase CD addressing the physical aspects of the Earth and its atmosphere. Provides information on the patterns, relationships and processes associated with rocks, rock structures, weathering, erosion, weather and climate. Topics include: Rivers, Coastlines, Past Glaciation, Limestone and Chalk, Igneous and Metamorphic Rocks, Sandstone and Clay Rocks, Rock Weathering, Slopes and Mass Movement, Earth's Internal Processes, Plants and Their Environments, and Weather Conditions. These photo resources can be used wherever needed. Ages 7-16 £69

AVP (01291 625439)

Essential Geography

Six games: *Frogger* covering land use, transport, terms of physical and climatic features, measuring equipment and scales. *Treasure Hunt* dealing with compass points and co-ordinates. *Cliffhanger* looks at weather, transport, farms, physical geography, while *Chart* takes maps, features, countries, cities, seas, mountains, deserts and rivers. *Match and Grab* introduces plans of buildings and features, symbols, contour maps and *Jigsaw* examines climate, seasons, planets, time, volcanoes, power sources, environmental. Ages 5-12 £12.75

AVP (01291 625439)

Maps and Landscapes (Vol 1 & 2)

Demonstrations, games and test/practice programs on contour lines, landscape cross-sections, scales and directions. You can demonstrate the same area-map in four or more different scales. Copy sheets and booklet are included. Ages: 9-14 £25

AVP (01291 625439)

Navigator

Navigate from point to point using commands which can be logo-like with distance, angle, bearings, vectors, grid references, latitudes, longitudes and so on. *Fly the Atlantic* and *Fly the Space Shuttle* activity packs available separately. Ages 7-14

Topologika (01326 377771)

Our World Complete Pack

All the named features can be investigated by the child, with colour photographs, maps, information, rainfall and temperature records, at each location around the world. Included in each onscreen journey around the chosen part of the world are a series of questions which check that information has been understood. Ages 7-16

£65

Chalksoft (01775 769518)

Oxford Talking Infant Atlas

Based on the print version of the Oxford Infant Atlas, here children can explore the atlas at their own pace, click on any labels of sentences they can't read and try any of the numerous activities. Buttons turn labels for place countries, and geographical features on and off, while quiz buttons ask children to identify particular features. Includes the place names that children need to know at Key Stage 1 and introduces and develops and conventions of maps; introduces geographical terms; identifies major geographical features. Includes a copy Ages 5-7 of the paperback atlas.

Sherston Software (01666 840433)

Round the World Yacht Race

Simulates British Steel Challenge Round the World Yatch Race. Circumnavigate the world against winds and currents. Covers the realities such as what food to take, and how to calculate routes from Southampton via Rio de Janeiro. Hobart and Cape Town. Icebergs, whales and equipment failure will aim to make your job more difficult. Ages 9+ £29:95

Storm Software (01935 817699)

Smudge Discovers the World

Equips children with basic geographical skills. Easy-to-use, presents colourful scenes in three sections. Smudge looks at different types of housing in villages, towns and cities and discovers the United Kingdom and Europe - looking at the political, physical and human features. Smudge also encourages research to build up a detailed profile of the area in Postcard to Home. Compass, co-ordinates and mapping skills are introduced and reinforced (levels to suit a range of ages/abilities) in part two. With Smudge's guidance, children will develop skills to use, read and design maps. Rivers and the effects of the weather on a community Ages 5-9 come to life in part three. £45.99

Storm Software (01935 817699)

Topographer

Have lots of fun while learning about maps, contour lines, valley and rivers – in fact all the features of an OS map. Has a 3D section to convert a 2D map into a 3D landscape. Ages 7-16 £79.95

Clares (01606 48511)

WeatherMapper

Information about climate, weather systems, charts and folklore. Children can add their own ideas to the database and print weather maps and charts from the data, they have collected. Sound and animation

enhance the program. Ages 7-14

£39.95 Tag Developments (01474 357350)

Village Life in India

Divided into nine sections, some focus on the Nilgiri hills in southern India, while others place this locality in its wider Indian context. All sections allow direct comparison with different localities, including the pupils' home area. Video clips, still images, maps, statistics; diagrams and exercises, most of which are accompanied by a soundtrack of authentic Indian music. Ages 7-11

Actionaid (01460 62972)

Weather Station

Record daily weather readings and then display them on screen and in print. The teacher can change the display from metric to imperial units at any time and readings are accepted for rainfall, maximum and minimum temperature, wind speed, wind direction and barometric pressure. There's an outline map to create with weather icons too.

> Ages 9-13 **£38.50** AVP (01291 625439)

Weather Watch

Database with information on (min/max) temperatures, rainfall, cloud cover, wind speed, wind direction and air pressure can be entered with the greatest of case and printed out as a bar chart, barline chart, scatter graph or line chart. Pupils can print out wind roses, climate graphs and minimum/maximum graphs. Ages 7, 14

AVP (01291 625439)

69

Back Issues	
Antonio	sues
<complex-block></complex-block>	 Issue 200 – November 1998 CD Writers Relational databases #2 History of Acorn User Another great cover CD Issue 199 – October 1998 Acorns and Blake's 7 Relational databases Slow Scan TV Radio pictures on disc Issue 198 – September 1998 TopModel step-by-step ANT Internet Suite made easy Desk utilities Stellate demo on disc
Issue 198, September 1998f3.95 Issue 197, August 1998f3.95 Issue 196, July 1998f3.95 Issue 196, July 1998f3.95	

Issue 194, May 1998.....£3.95 Issue 193, April 1998.....£3.95 Postcode..... Issue 192, March 1998£3.95 Issue 191, February 1998.....£3.95 Tel No

Send cheques payable to Tau Press Ltd to: Acorn User Back Issues, Media House, Adlington Park, Macclesfield SK10 4NP

Call 01425-6111

2-1

corn

one ad

Please tick if you do NOT wish to receive further information or special offers

ser

Why not take advantage of our free reader ad service? Fill

in your details on this coupon (25 words maximum, one

word per box below) and send it to Free Ads, Acorn User,

Tau Press Ltd, Media House, Adlington Park, Macclesfield

SK10 4NP or by e-mail to: freeads@acornuser.com. Only

mil ublisher on not keyhw irst Impression, nd Outline Font), ession (new) udioWorks (, HardDisc G oug), £25. Ar on), £24. Play 8. Image Ma vid Pilling), avid Die (alt Maze t COD Buy 2303

ID, ATAPI 6 nterface, AK ick. On HD, yle, Wordmore. Docs f software + PC Pref SA el: 01204.

nack, Go	ial free all	- saturen	01.01	upgra	de lor	boxed v	r com or
tion. Phone 1 450478	ar Jond Scarner	n 793	 Softwar Canon 	e & hi ^{ard} for Bit Se Acom St	Rise PC is card,	£300 on at e-mai	k Par All Nd Mike
Podule DX4-100	te trave publications	with	C25, So	IdCA 8.8 mode	m, 235	Wanter	Beebug.
	s, Games, loads	Dirare-		762 Food condi- terne software.	00		

Missed out on one of our previous issues? Now's your opportunity to bring your collection up to date. But hurry stocks are limited

Issue 191 - February 1998

- **New ArtWorks series**
- Website creation
- How to customise your machine 0
- RailPro on disc .

Issue 192 - March 1998

- Teletext
- . DataPower 2
- **Compiling Java**
- 0 LineDemo and TopicArt on disc

Issue 193 - April 1998

- TextEase
- DrawWorks Designer
- Impact Pro
- raFS on disc

Issue 194 - May 1998

- Doom special
- Acorns over Egypt
- Newsreader review
- **R-Comp interview** 0

Issue 195 - June 1998

- Printers reviewed
- SEMERC success story .
- Automating your home
- Wizard Apprentice on disc

Issue 196 - July 1998

- Phoebe 2100
- New portable 0
- Show report
- TraxSequencer on disc

Issue 197 - August 1998

- New Medi computer
- Audio speakers tested
- **Quality printers** 0
- Web FX3D reviewed
 - 0467-For soft 2/x monitor magazine discs, man 10, RISC OS 2, magazine ciaco, intel: (100), 05 2, nal boxes. £700. Tel: (100), 1 x key.

Free ads

are on

page 56

and 1 x m: Rise to 4 synth, Beds RANcom X4 school PC! All allable: A4000s, and softfor lists R • Ba

Sig

mou

Gol

Tel: Break ar(). excell 58 1º details gotiable.""-ds m Dwer supply of hard 770+LR monit Over supply, £300 inclu boxes, manual Ostage, A3010, 4Mb F PRM & magazine Mb hard dia, 4Mb F

HD

full

in scott@zetne on 013 seria 234-271177

OI

constraints. We may also publish free ads on the cover

disc if magazine space is short. Please fill in your name

published, but they enable us to contact you in case of

and telephone number below - these will not be

Press software 016 368

tor, manuals, ot Service Ads publication is entirely dependent on space and time

Please allow 14 days for delivery

Bin. U.

£20; Q4G

Flashback

Pr. Man. £8 ... £11.

azine

195/96

a, + loads more Lin printer. ton games. scF60 14in Multiscan colour A7000, Ris discs. Tenitor, 0.28dp. Excellent 425HD compution tor, manuals Stu-9821 union Original box and

Free

ast month I promised we would look at an application using a PIC chip, well here it is, a large-digit scrolling display. This can be made any width you like, but the basic unit can display four characters on a 20 by 7 dot matrix and you can cascade up to 16 such units giving the capacity of showing up to 64 characters.

The basic building block of the display is a 35 LED matrix arranged in a 5 by 7 square. Now you don't get access to all the LEDs simultaneously but they are available on a multiplexed basis. They are wired up as shown in Figure I, if you apply a positive voltage to one row you light up any individual LED in that row by earthing the appropriate column connection.

That means that you can only control up to five lights at once but the trick here is time-division multiplexing. What we do is to light one row briefly and then move onto the next, and the next. If we do this fast enough the eye is fooled into thinking they are all on all the time.

The advantage of using a PIC chip is that we can give it the boring, repetitive task of repeatedly switching the LEDs. This could be done by the main computer but is a waste of resources. Furthermore, in a multitasking environment one task might hog the processor time or even crash leaving the multiplexing frozen. Then not only would the display effectively disappear but we could be left with too much continuous current going through an LED which might burn it out. So rather the cheap PIC gets to do the repetitive job, leaving the computer to issue commands whenever it needs to change what is being displayed.

The circuit shown last month is the basis for the module, the only change is that pin 18 is connected to pin 6. This allows the arrival of serial data from the computer to trigger an interrupt, so the PIC does not have to keep looking at the serial line all the time. To this we must add the circuit in Figure II to drive the LED matrix modules.

Power supplies

Each row needs to be connected to the positive supply in turn, and this is done by using a P-channel power FET. As this has to carry the current for potentially twenty LEDs it needs to have a high peak current rating. You could use a power transistor here but really a power FET is the best answer, as this is the component that you are most likely to have difficulty in finding (it's not in the Maplin catalogue) see the cover disc for details of how to get hold of them.

These FETs are turned on by a logic low but we can't connect each one to a PIC output because we haven't got enough to go round. As we only need one FET active at a time we can use a 74LS155 demultiplexer. This takes a three bit binary input and puts the output, that corresponds to the binary number on the inputs, to a logic zero. It is wired up so that when the number zero is put on the inputs no FET is turned on, and with inputs of 1 to 7 one of the row's FETs are turned on.

I could have used a transistor or buffer amplifier to do this but the maximum peak current could be up to 2A so it would have to be quite beefy. The power FET offers a cheap solution, however they are not the common n-type but p-type. This is because the FET is sourcing the load with power as opposed to the more common sinking, or connecting to ground. Also, as the FET is being driven from logic, for PIC can clock bits out so fast that the time taken is negligible compared with how long the LED is on.

Each LED column has a series resistor to limit the current and this is shown on the diagram as R. The value of R will determine the current through the LED and hence the display brightness. Unfortunately, it's not that simple, the maximum LED current is 30mA which when you multiplex it (flash it) is not too bright. However, you can put more current into it if you pulse it, which is what we are doing, the rating for the



A new LED display project by Mike Cook

optimum efficiency it needs to be designed to switch from five volts.

Now at the other end of the LED we need to ground each column matching the LED we want to turn on or sink the load. This circuit need only take the current from one LED and so it does not need so strong a driver. I have used the common Dartington driver the UNL2003, you get seven in a package. This requires a separate output from the PIC for each of the columns, 20 in all.

Unlike the row drivers these can be on or off in any combination so we need to generate 20 outputs from the PIC. This needs some sort of output expander circuit, the way I did it was to use a shift register to clock out the required bit pattern before we activate the row. The



Figure I: The LED Matrix

display is 150mA pulsed for a 10% duty cycle – it is on 10% of the time.

We are having it on for slightly longer than that, it is on one time interval in seven so that works out at 14%. To find out how much current we can put through it you need to draw a graph. Plot two points one with 100% and 30mA and the other at 10% and 150mA. Then join them up with a straight line and read off the current our 14% duty cycle will require. Then just reduce it a bit to be on the safe side, I settled on 120mA which, with a 5 volt supply, requires a resistor of 24 ohms.

This is fine if the display is always being flashed but what if some development software error stopped it – too much current would go through the LED and it would burn out. Therefore, just for the development phase the resistor R consisted of two resistors in series, a 24 ohm in series with a 100 ohm. When development was completed I shorted out the higher value resistor and the display brightened up. If you are just making my circuit and not doing any of your own tinkering you can use the lower value resistor only.

A note on the construction of the display, as the row circuit could be drawing a lot of current, make the wires to that a little more substantial. I used tinned copper wire of 22 SWG for the LED matrix bussing although you could use thinner wire. I also arranged the LED current to come from a separate regulated supply to prevent any ripple I might get on the voltage rails. I have fitted my computer with a socket on the back that



Figure II: The LED Matrix Display

takes 5 volts from an unused podule socket. While this is fine for most projects but this one draws up to 2A peak so this arrangement is not recommended, you need a separate supply.

Commanding the PIC

The PIC controller talks to the computer through the serial interface as we saw last month however, this display is designed so that several units could be linked. You need to connect the transmitted data to all the controllers but only need one controller to supply the CTS signal.

The idea is that the computer provides commands to the PIC which is responsible for multiplexing the display and inputting the new data into a display memory. This memory takes the form of 21 byte memory locations, each 20 bit line on the display is stored in three bytes, that leaves 4 bits in each line unused. Commands to the display consist of two bytes, the first containing the command type and the PIC display controller it is addressed to and the second containing the data.

The form of this data changes depending upon what the command is. Just to make sure that the display knows which byte is which the command byte always has the most significant bit clear while the data byte always has it set. Within this format there are 7 bits free to specify both the command and the identification of the display. When several displays are placed together you don't want each one responding to every command so you must uniquely identify each display and embed that identifier in the command.

Also the code in each PIC must know what display it must respond to. This could be done by setting hardware switches that the code reads on power-up, however there are not enough free inputs. You could add another shift register to clock them in but that's adding extra expense. The simplest solution is to have the ID hardwired into the PIC code and this is defined by a constant in the source code, called, surprisingly enough, ID.

I decided to allocate 4 bits for the ID and 3 bits for the command type. This gives the capacity of 8 different commands and 16 displays. On cost grounds alone this is more than enough displays. We will look into the commands in detail next month but for the time being the structure can be seen in Figure III.

I really need another article to talk about the software both in the PIC and the computer, however on the cover disc is a general purpose application that will communicate with my serial PIC projects,

it's called *!ComPIC*. This is quite simple to use, just enter the hex numbers in the send icon and then click the send button. Repeated clicks of the send button send that data again.

If you want to clear this data press Return to both send it and wipe the icon clean. Any data that arrives from the PIC will appear on the lines below, again in hex – there are none in this application. Also on the disc is code for the PIC to test the hardware. This puts a pattern on the display when first switched on and then for every byte received down the serial line scrolls the pattern along and puts a binary count on the columns.

In this way you can check for any hardware faults. When I made the prototype I had two errors that meant the LEDs weren't lighting up correctly. This proved to be short circuits between some column and row connectors on the back of the matrix. You could tell what was wrong because the pattern did not scroll cleanly – the pattern changed when it passed over certain columns.

Well that's about it for this month, next month we will look at the working code for the PIC and see what software we need so that the computer can control a scrolling display, see you then and have a Merry Christmas.




Even Santa Buys From Daco





ell there's a lot happened since I last rambled, of which the news from Acorn is the least of it for me. The Dean of the Manchester Metropolitan University has closed down all Physics courses so I'm out. In the particularly inept fashion that might be called "Doing a Boland" the students and staff got a very raw deal indeed. If you are thinking of going to Manchester Met., especially the computing department, I personally would advise against it, as students are paying more and getting less than ever before. Anyway, I am well out of it and doing a real job at the satellite decoder company Pace.

With regards to the situation at Acorn I can only echo the words of Douglas Adams in the Hitchhiker's Guide to the Galaxy: DON'T PANIC. The existing Acorn machines can still more than hold their own in this PC-dominated world and they will still be competitive when today's top-of-the-range Pentium machines are gathering dust. The reason is simple: As PCs get more powerful, Microsoft's operating system increasingly swallows the power, whereas Acorn delivers that power to the user. It will still remain the easiest platform to program and will serve virtually all your computer needs for years to come. So don't be in a rush to jump ship.

A letter from Chris Web provides inspiration for more of my pontificating this month. While posing a question about hardware, he makes this plea:

"Why, oh, why does the Acorn market seem so slow to respond to opportunities? We have all enjoyed (?!) the World Cup in June and endured the endless marketing from Sony regarding the official game for the event. Other platforms have also released their unofficial versions of the same game which have, according to my local software vendor, sold extremely well.

"It is not just the World Cup I am talking about - there are other sporting events that could spark a bit of interest in games software, perhaps Wimbledon - tennis is a popular sport and a good simulation would stand a chance. More recently we had the British Open - why have The Fourth Dimension not marketed an unofficial version of the event for the superb simulation Virtual Golf? We had Revs on the BBC Micro: sheer quality. Nowhere to be seen on the RPC, but if ported and repackaged would sell like hot cakes. The Commodore Amiga (RIP) was lucky enough to have World of Sensible Soccer released for it.

"I spoke to a few people at the recent South East show and it seems I am not the only person fed up with the



'unenthusiastic attitude' in the Acorn games market (excluding notable exceptions, R-comp to name but one). I think that if companies could respond to the marketplace and seize opportunities then a bit of life could be breathed back into the games community."

This is not an untypical letter expressing frustration at the lack of something happening in the Acorn market. "If only this then it would be better" is the cry. Now, personally I don't think that the Acorn market is lacking in talent or initiative but simply volume sales. This sort of thing doesn't happen because it does not make enough money to be worthwhile. Occasionally someone will launch a mega-game or something very flashy, but it takes a lot of sales to recoup the outlay in packaging and advertisements - let alone the time it takes to produce. Gone are the days of the lone programmer producing a killing game.

Most commercial games titles are produced by teams nowadays – just look at the credits – and it takes worldwide sales to pay that back. Of course once a game takes off it pays back handsomely. Unfortunately the Acorn market doesn't have the penetration, much as we all wish it did.

The major difference between the Acorn software market and that of the other two big players is that Acorn products tend to be bought with the customer's own money, whereas PC or Mac users are usually spending corporate funds. What can we do about it? Well, in a recent issue, one correspondent suggested that we should all buy at least one piece of software every six months.

This is no problem in the PC world:

The tour continues ably conducted as ever by **Mike Cook**

due to badly-written programs and the introduction of new but incompatible operating systems, you have to buy the same software over and over again just to keep on working with it. In the Acorn world however, things tend to last forever. Remember that old film, *The Man in the White Suit*, starring Alec Guiness? He invented a cloth that never wore out or got dirty. Things went great until the market was saturated, then it all went into recession. The Acorn market needs a kickstart, or it'll go the same way: don't wait until someone repackages a product, buy it now!

Next, Andre Elliott has some input for a past problem:

"For Richard Davis who wanted to network some Acorns. I'm not sure if the A3010 or the A4000 has a simple way of adding Econet, and you'll need other bits and pieces like a filestore, but they're fairly cheap now. I just got a very ill E01S for free, and it is possible to use TCP/IP over Econet. The details on setting up a Econet Network are in Frobnicate, Issue 9; and the stuff about using TCP/IP over it is on Richard Murray's web-site. That's at: www.argonet.co.uk/users/ rmurray/. This should be much cheaper than Ethernet - although it's a lot slower."

It's always great to get some feedback as to what you are doing with your Acorn computer. This month we have reports on



two successful projects. First up is John Penton from Trinity College, who writes:

"My aim was to have a system which would switch on my hi-fi in the morning to wake me up (much better than an alarm 'cos it keeps playing), and to be able to have it switch off at night if I forgot. it should be controllable from my bedside.

"Originally I had a electromechanical system based on an old boiler timer and thermostat. This required me to use the radio – as it could not start the CD player. I have now built a system running off the I²C bus on my Risc PC using a PCF8574. Four of the I/O lines on the 8574 are used as outputs. These are expanded to 10 with a BCD decoder (4028). Two of these lines switch T-type flip-flops (4013) which drive a Maplin zerocrossing opto-isolated mains switch (great little kit), which in turn controls the power to the hi-fi.

"Four of the I/O lines on the 8574 are used as inputs, connected to the output of SR latches (4044), to provide handshaking. Simple push-buttons are connected to the set and the resets are all connected to one of the outputs from the 4028. In order to control the CD player, I connected a set of optotransistors across the contacts of the switches on the front panel. These are encapsulated with suitable LEDs which I drive from the remaining outputs of the 4028.

"At the moment a simple but large BASIC program provides command line interfacing from a TaskWindow controlling the mains and the CD player's *play, shuffle* and *repeat* buttons. A system of alarms has also been set up which allows a command to be executed at a given time and day. I have taken care that the system is not interrupted by power failure – upon power-up it will return to the last state and execute any alarms missed."

That sounds a great system – but doesn't the fan in the computer keep you awake? Or does its white noise lull you to sleep?

Ken Wright from Claremont, West Australia, has been using my *PortMonitor* application to test a piece of software of his own, which controls lights and motors through the printer port. He has been letting local schoolchildren loose on the system to run various models. His applications are on the cover disc in the 'extras' folder.

George Murphy has had a frustrating time Web surfing lately:

"I have noticed while browsing the Web that there seem to be a number of Websites, in particular the BBC Proms site, that have a 'Real audio' link allowing you to play music live. Not surprisingly, my ageing but faithful A3010 reports a 'no run action' message when I try to follow the link, presumably as it is trying to run a windoze program.

"Do you know of any conversion utilities or packages which can run these files either on or off line, preferably freeware? I would be most grateful if you could point me in the right direction, as my attempts to search through HENSA and Altavista have so far drawn a blank. Many thanks."

RealAudio is a proprietary system for both playing live sounds and sending sampled sounds. It works on a streaming system: that is, it does not have to load in all the file before it can start to play it. This is, of course, what you need for realtime sound. In practice however, if the data stream is not fast enough the sound is intermittent, like the result of a dodgy connector in the speaker lead. There is a RealAudio player for Acorn's Network Computers but the licence does not extend to RISC OS at present.

Jason Strong would like to back up his lone support for Acorn machines with a solution to a pressing problem.

"A golden opportunity has arisen at my place of work. One of my work colleagues has been tasked in procuring a computer solution for a specific application. The application involves the calculation and plotting of 2D and 3D graphs derived from mathematical formulae. This is primarily for the calculation of microwave freznel zones. I can see this possibly being accomplished in two packages, one an equation editor, the second a graph plotting package.

"Being reasonably open-minded but bored with my constant praise of Acorn machines, he has approached me to see if an Acorn package is available. Do you know of any suitable software? On a separate subject is there any RISC software available that allows an Acorn to be connected to a PC using the DOS software interlink or interserver?"

On other platforms the solution would be to use MathCad or Mathematica but I think there may be a cheaper Acorn solution: *RLaB* is one possibility, available from HENSA. There's also a maths package called *Reduce*: it has a basic text interface, but it comes with a copy of *!Gnuplot* to which it can link to for plotting 2D or 3D graphics. Unfortunately I seem to have mislaid the information on where to obtain it.

Malcolm Brooke over in Germany is

having a problem with an upgrade. He writes:

"We are plagued with a problem with our Risc PC 710. The machine worked perfectly when fitted with the original 1Mb of VRAM but following an upgrade to 2Mb there were a constant stream of data abort errors, the machine would hang up and, rather bizarrely, the background colour of various windows would be bright green. There would be times when the machine could be used extensively with certain software but as soon as it was used to print a document it would lock up.

"After removing the 2 Mb upgrade and running without VRAM everything returned to normal. This would seem to indicate a faulty VRAM module. However, IFEL, who have been very helpful, have already sent us three modules. To have one faulty module could be considered a misfortune, to have two is rather unlikely, but three..."

Well, it does seem that with three replacements the problem doesn't lie with the VRAM. However, when the VRAM is removed your problems vanish: this seems to point to a motherboard fault. If there was an unsoldered joint or faulty connection in the most significant bit of the address bus, that would explain why it works with the smaller memory. The fact that the VRAM memory can be used as main program memory when not being used for display would explain why certain programs ran while others crashed. It's really not a DIY fix; it needs to be taken to a service centre.

Dr. C. Lake from Billericay is having printer problems. He writes:

"I have purchased Epson Stylus Photo 700 to use with my StrongARM RISC PC. It came complete with a PC driver but, of course, there is no suitable Acorn driver. I am using a Stylus-Colour driver which unfortunately prints a letter F at the top left corner of every page. Is there any way I can use the PC driver to print my files from Ovation Pro and PipeDream?"

As far as I know you can't convert from Ovation Pro or PipeDream to a PC application. I did hear that Spacetech are supporting the Epson Photo printers so you might like to check them out.

Finally, Mr. Sparrow has e-mailed me with more information on PIC programmers:

"The PIC programmer that I use (via the PC card) on my RPC is available from http://let.cambs.net/picprog.html and the software I spoke of is available from my Webpage at http://www.york. ac.uk/~rps102/pics/picchips.htm" AU



Two new ways to get a MONTH'S FREE TIME ONLINE

If you are already a subscriber to ArgoNet you can get a whole month FREE just by taking out a Direct Debit subscription to the Acorn User magazine.

Direct Debit is the easiest way of subscribing to Acorn User – you get the convenience of doorstep delivery plus easy payment terms of just £9.99 every three months AND you get that extra free month of connection to ArgoNet.

HOW TO GET THAT EXTRA MONTH:

Fill in the Acorn User subscription form on page 79 and make sure you tick the "Free

Are you one of Acorn User's Direct Debit subscribers? Do you want to join the biggest group of Acorn owners in the world?

As a special reward to you as a dedicated subscriber we can



give you the very special offer of four month's free connection if you subscribe to ArgoNet.

For example you could take the Surf at Speed offer that includes a fast 56K modem, the Voyager software and get 3 months online plus the one extra month if you take up this offer at the time of ordering.

HOW TO GET THAT EXTRA MONTH:

Using one of the connection offers given by Argonet on page 35 ring the freephone number and mention you're an "ACORN USER DIRECT DEBIT SUBSCRIBER"



Telephone/Fax 01225 764863 email itscon@argonet.co.uk

ARGONET SUBSCRIBERS

page 79 and make Month On Argonet" subscription offer. Are you one of Acord



Accounts less boring Pocketbooking in Asia More on CD Writers

SC OS magazine in the world

USER

Discover his hit

Textease

Over thagazines worth of magazines and software for just

photodesk 3

The most flexible, straightforward and comprehensive word-processor and desktop publisher ever. Use it to make letters, invitations, cards, banners, notices, posters, overhead foils, in fact any kind of text and graphics. It is designed to be ideal for children and is invaluable for older children and adults.

Rhapsody

Your chance to compose your own musical score. Rhapsody allows you to

FREE RRP 259.99

Acorns

into

China

modify and manipulate music as a wordprocessor does text. You can enter score by hand, note by note, or, if a MIDI Interface is fitted to your computer, you can play a tune using a MIDI keyboard and capture the music in Rhapsody. The music can then be transcribed ready for editing, replaying, etc.

The Crash of the Bank of England? Collapse of the Government? Just what difficulties will the Year 2000 cause you? The "On the brink..." video is a non-technical explanation of the potential impact of the Millennium Bug in the world's computers and what you need to do about it. Nearly 25 off when you order with your subscription. Full information on page 14. Subsc Acorn

the world's numb

ou already know what a great magazine ACORN USER is. It is the only Acorn magazine with up-tothe-minute Acorn news, in-depth hardware and software reviews, and without doubt the best cover discs available.

What you might not know is that by taking out a subscription today, not only are you guaranteed never to miss an issue of the biggest and best Acorn magazine in the world, but you can also claim an excellent free gift or special offer, available exclusively to all new ACORN USER subscribers.

Anagram Genius

Prepare to be astounded! Seven years of development have produced the world's most sophisticated anagram generator. Give the software a name or piece of text and it will use powerful artificial intelligence techniques to rearrange the letters to say wierd and wonderful things about it.

Take this opportunity to support Steve Turnbull as he rides again for mencap over 250 miles from the Mutianyu Great Wall to Tiananmen Square on behalf of the Acorn community. Just add your donation when you subscribe. Mencap aids people with learning disabilities

Mencap aids people with learning disabilities with education, employment and housing.

the

brink

ribe to CURRENT SUBSCRIBERS IJSER you can take advantage of these offers by renewing your subscription at any time er 1 RISC OS magazine

Gall our 24-hour Subscription Hotline Tel: 0870 606 0424 Fax: 01369 701 187 Email: dbscot@globalnet.co.uk Please quote code 'A9813' when subscribing by phone

SUBSCRIBING HAS NEVER BEEN EASIER

Why not make your subscription even easier and subscribe by Direct Debit, spreading the cost of your subscription over quarterly hassle-free payments. bit Over a year you will receive 13 copies of Acorn User. What's more, you need never worry about missing an issue again, as the subscription continues until you decide to cancel. Direct Debit subscriptions cannot be taken over the phone or by fax.

Binder and 2 free magazines

USER

ARGONEL

THE INTERNET EXPERTS

CORNU **Exclusive to Acorn** User this binder will hold up to 13 issues of your favourite magazine. PLUS receive an extra two magazines absolutely FREE!

Argonet for 1 month SPECIAL OFFER FOR DIRECT DEBIT SUBSCRIBERS

If you are a Direct Debit subscriber why not take advantage of our special subscription deal with Argonet subscribe now and get an extra free month of connection time – see page 76 for details.

All our software offers are StrongARM compatible.

Yes! I will subscribe...

	Name Age
-	Address
	Postcode
	E-mail address
5	
La	Please send me the following FREE Gift/Special Offer (tick one): 4247 Rhapsody
Contraction of the	4247 TextEase 4771 1 month on 1000
	4705 Binder & 2 mags Argonet
	4258 Anagram Genius Anagram Genius (New Direct Debit subscribers only, see page 76)
2Ь	I would like to donate to mencap via Steve Turnbull's China Bike Ride (enter donation amount, minimum of £5 please)
_	4773 Donation to China Bike Ride £
3a	There's never been a better time to subscribe so take advantage of one of these offers TODAY. See section 2.
with costs	A9813UN UK £39.99 A9813EN EU £53.99 A9813WN World £68.99*
	To renew subscription, please tick:
	A9813UN UK £39.99 A9813EN EU £53.99 A9813WN World £68.99* *Unfortunately World subscribers are not eligible to receive the free gift/special offer
	l wish to pay by:
	Cheque/postal order made payable to Tau Press Credit card (Visa/Access/Barclaycard/Mastercard/Eurocard/Connect)
	Expiry date / Signature
	Card No.
3 b	Instruction to your Bank or Building Society to pay by Direct Debit
	Please enrol me as a subscriber to Acorn User.
	4210 with payments of £9.99 by continuous quarterly direct debit (See section 2) Your subscription will continue until you cance
	Web and
	Name of Bank/Building Society
	Address
	Name of Account Holder(s)
	Bank/Building Society Account No.
	Branch Sort Code
	Date Signature(s)
	Instruction to your Bank or building society: Originator's ID No. 851412
	Please pay IDG Media Direct Debits from the account detailed in this Instuction subject to the safeguards assured by the Direct Debit Guarantee. I understand that this Instruction may remain with IDG Media and, if so, details will be passed electronically to my Bank/Building Society. Ref No. AU202

Signature ...

Date

Now send your completed form and payment to:

Acorn User, Tau Press, PO Box 9, Dunoon, Argyll PA23 8QQ. Please state if credit card billing address is different from the delivery address. Photocopies or handwritten versions of the above information are acceptable.

This guarantee should be detached and retained by the Payer. The Direct Debit Guarantee

- This Guarantee is offered by all Banks and Building Societies that take part in the Direct Debit Scheme.
- If the amounts to be paid or the payments dates change IDG Media will notify you 14 working days in advance of your account being debited or as otherwise agreed.
- DIRECT If an error is made by IDG Media or your Bank or Building Society, you are guaranteed a full and immediate refund from your branch of the amount paid.

0

You can cancel a Direct Debit at any time by writing to your Bank or Building Society. Please also send a copy of your letter to us

Write to Acorn User, Media House, Adlington Park, Macclesfield, SK10 4NP. E-mail: letters@acornuser.com

PGP not by Nat

I was pleased to see Alisdair McDiarmid's article on the use of PGP for secure e-mail (November '98). Many people are blissfully unaware of how easy it is to intercept and even alter ordinary e-mail.

The article states that the RISC OS port of PGP is 'maintained' by me. To avoid possible misunderstanding, I would like to make it clear that I am not responsible for that port. It was created by Gareth McCaughan; I merely keep a copy of it on my site.

Nat Queen n.m.queen@birmingham.ac.uk

The end is nigh?

I suppose this is the end. There's talk of rescues. Some people think they may still see Phoebe. Some people are proudly stating they'll stay with their RiscPC, like the folks who revel in using the Atari Falcon years after it's demise. Some are saying 'Linux is the future'. Some are saying 'Mac is the future'(at least until Apple folds under Gates in 2 years or less). Some even think Streater straddled by Lara can somehow save the day, by making 'Linux is the future' the same as 'RISC OS is the Future'. Bondar came, tried and was brushed aside. All is lost.

Of course, the real Techno-fiends are having a field-day parading their stuff, arguing about the post-Acorn landscape. Most of us Acorn users are just distressed, knowing that their next machine will be Wintel and wubbish.

David Hammonds sou0a5@bangor.ac.uk

Disk storage

B&Q are at the moment offering metal storage cases, internal size 365mm x



275mm for £9.99. If you remove the width-way dividers and stack your floppies length ways in 3 columns you can get 108+ disks per column which is 325 per box or mix & match Zip/Syquest. The downside is that CD discs have to go flat, but you can customise dividers with ease. I was moving house and looked for a quick storage device. They are almost made to measure, lock, will hold the weight, and have a carrying handle to boot (no pun intended).

> **Chris Tatam** ptech@zetnet.co.uk

Uncrunched source

The recent push for un-crunched source to be provided by authors in your letters page is welcome. But A. Evans point about crunching code because "many parts of it are not good examples for budding programmers" misses a key point.

Programmers reading others code don't learn just by seeing good examples, but by criticising code and deciding how they would have done it differently; that's where a large part of the creative thought comes in.

I recommend Kernighan and Plauger's

Hyper stories

Having used HyperStudio recently on a College Course, I was interested in your comments about it. While impressed with the PC version, you really have to jump through hoops to make it work and I really struggled with it. I gave up, bought the Acorn version for home use and went at it half-heartedly

What a difference. In the end, my project ended up as 20Mb of disc space on my A4 portable. It would not run on the PC as the /STK commands would not function, which, in the end showed up the new PCs from which it was supposed to have been videoed.

Acorns should be supported as much as possible in Education, there is no way a pupil of mine could cope with the limited functions of the Windoze Version of HS. All credit to David Miller at TAG for his development work. I look forward to his new updated version.

Thanks also in public to fellow Argonaught D. A. Symes for his help in the Animation sequence. **Chris Ward**

Kettering

'The Elements Of Programming Style', 2nd Edition, to anyone who writes lines of code. It's an old book but unsurpassed in terms of insight and common sense, all in a slim volume. ISBN 0-07-034207-5.

> **Ralph Corderoy** ralph@inputplus.demon.co.uk

Fred, Jim and Sheila

Re your letter in the November 1998 issue of Acorn User asking for the origin of Fred, Jim and Sheila, there is a simple answer.

It was me.

Chris Turner, then Chief Engineer, when drawing the circuit of the machine out had taken two I/O expansion lines to the edge of the paper and I wandered into the room (escaping from what, I don't remember - probably programming BASIC I) at 4A Market Hill. He claimed it had taken a long time to get the wires drawn, but now he didn't know what to call them

I said "Fred and Jim".

So he did.

Later on, we added a 3rd I/O line. Chris, saying that Fred and Jim would be lonely, christened it Sheila.

The rest is (pre)history.

Sophie Wilson Chief Architect & VP Silicon Architecture; Acorn.

No net blues

With regard to the "Network blues" letter in the November issue, I would like to add that it is certainly possible to support a cluster of Acorn NCs from a Risc PC 700. This requires a Network File Sytem (NFS) server, and, optionally, a BootP server. Both of these server functions can be carried out on a Risc PC.

If Mr. French (or anyone else, for that matter) would like to discuss this further please contact me via email.

Richard Walker runnyhunny@mindless.com



Open source

Justin Fletcher is right. There are very few situations where it is not worthwhile to release source code with a free program. Not only does it allow others to learn from your code (emphasised in the October Letters page), but more importantly it allows others to improve software.

Whole operating systems have been built – and thrive – on this premise, notably GNU/Linux and FreeBSD. And surprisingly, this mode of development does not result in anarchy, as explained by Eric Raymond in his essay *The Cathedral and the Bazaar* (http://locke. ccil.org/~esr/writings/cathedral.html).

Richard Murray points out that when people make deficient modifications to a program, it can cause problems. But anyone can hack an executable and cause it to crash - however, when source is provided, changes can then be made on much safer ground. If a programmer is worried about his reputation being damaged by other people's changes to their program, it is a simple matter to ensure that the program's licence requires modifications to be clearly shown. More importantly, treating your users as valued codevelopers often means they become valuable co-developers.

It is true that some authors will provide source code on request. But it is better that source code be publiclyavailable: if the author disappeared, your favourite program could become unmaintainable. For example, I recently ported a Unix program to RISC OS: the source was available, so I could start right away, and I will soon send patches to the author. Now I want to improve upon an existing RISC OS program: but the source is not available, and the author has not replied, so I am stuck.

Commercial software companies can also benefit from making their software Open Source (the Open Source movement, incidentally, has a home page at <http://www.opensource.org/>). In a letter, Peter McCaskill points out that Acorn's Draw "could do with a makeover", to which a reply came that it requires "vast amounts of money". It does not. It only requires Acorn to release Draw's source code, and a large number of capable programmers will collaborate to improve it. After all, software such as Draw and the Toolbox are not Acorn's key products - it does not benefit Acorn or anyone else for Acorn to hoard them. Netscape have already

We are wryly amused

How amusing that so soon after the infuriated responses to Grahame Peterson's June 1998 letter people have had it conclusively proved to them that, whether they like it or not, Acorn did need their charity. At least Grahame had a coherent argument – and he was right. The replies were vaguely centred around "I hope you never know what it's like to do without" even though Grahame said he was only talking about those who can afford a better machine.

In response to Mike Kinghan's letter on Reformers and Fundamentalists I would say that it is vitally important to the survival of RISC OS that a real company is seen to be producing Phoebe right now. The idea of porting the RISC OS user interface to Linux is fine in theory but the average person hasn't heard of Linux. The general public buy real computers that are visibly supported by real companies and are for sale in the High Street. Personally I think reducing RISC OS to a layer "on top of Linux" is pointless.

Something that people don't dare say often is that the RISC OS GUI is far from perfect, to run my computer at the level of functionality I expect, I run eight PD utilities on start-up.

Can a Fundamentalist enterprise appearing to be "Acorn Continued" succeed? Maybe Mike is right that "nothing good would come out of that alive" but better that Acorn computers should go down fighting and be consigned to the honourable museum of British computers (Sinclair, Dragon, Lynx) than become a half-baked port to Linux used by a minority of ex-Acorn users. Chris Bazley Wimbledon

accepted this argument and released the source to Netscape Navigator, aiming to profit from the server side of their business. The number of businesses embracing Open Source can be appreciated by reading the comp.os.linux.annouce newsgroup.

Unfortunately, there seems little chance of Acorn adopting this attitude.

The company's higher echelons now seem to consist of `suits' who cannot understand such arguments. This is embodied by Acorn's refusal to release its RISC_OSLib for free (now considered by Acorn to be obsolete; but it is still useful), because they could not provide support for it – a spurious reason, since no support would be expected for a free product.

It is time for the Acorn community, and Acorn, to welcome Open Source software and reap its benefits – or continue the gradual descent further into obscurity.

Mark Seaborn mseaborn@argonet.co.uk

Suicide is painful

I was devastated to hear the bad news about the show but Acorn scrapping the Workstations Division? That's insanity, the best thing about Acorns is their operating system. Acorn now seem only interested in their ARM chips for toasters and washers but I think that's a very bad move for them as they may well lose out in the end.

Anyway, what's the point of having

extremely fast CPUs and CD drives if the operating system you use is a nightmare? Good operating systems are found in ROM.

Acorn's customer support/involvement has been dropping over the years too, another bad mistake I think. My Dad was considering buying three Risc PCs, he e-mailed Acorn twice and did not receive a reply so opted for PCs instead. Three years ago, I could have got through to spares at Acorn to check availability of any part.

On a positive note for the future I do hope something can be arranged to rescue RISC OS, that's what makes Acorn machines so good. Here's hoping that everything will turn out alright in the end, RISC OS is just too good to get scraped. I hope that it will be continually developed and accompany the new breed of ARM powered computers.

Andy Nelson andynelson@arcade.demon.co.uk

Air your views

If there's something you want to 'get off your chest' or you have some interesting information for your fellow Acorn User readers, then write in to:

Letters page, Acorn User, Media House, Adlington Park,

Macclesfield, SK10 4NP

or e-mail: letters@acornuser.com Please note that we do not guarantee a

personal reply to letters.



The day starts well, meeting Neil and Mark outside the Empire, Leicester Square and heading straight for Chinatown to eat copious amounts of *dim sum*. Neil and Mark are the well-known two from Causality; I think it's easiest to describe Neil as being noisy on the outside, while Mark is noisy on the inside, although Neil is momentarily stunned into silence at the mere sight of my dictaphone.

'You were lucky to catch us,' says Neil. 'I'm off to Hong Kong tomorrow and then we are both relocating to California. We have spent so much time there in the last six months, we thought we should take the plunge; we are going to be working for NCI/Oracle to start with. But don't anyone dare think it is the end of Causality – just think of all the contacts and potential contracts we are going to be making. On the outside very little will have seemed to have changed, except it might be called Causality Inc.'

'We will still support RISC technology wherever we can. The ARM10 has a good future,' adds Mark.

Neil and Mark first met around the time the Risc PC was launched. Neil was an undergraduate at 'war college,' otherwise known as the Royal Military College of Science, originally considering a military career. Mark was doing a PhD at Kings College London, in the same research group as Stephen Streater.

'I remember programming with Stephen on the Archimedes,' says Mark, 'His supervisor became my boss. This particular research group at Kings is notoriously bad for getting people to finish their PhD's. Everyone went off and did things that were far more interesting.'

'I first spoke to Mark on the phone,' says Neil, 'after seeing an advert in *Acorn User* for Mark's dad's Acorn dealership, which happened to have the word Linux in it.

'It's all Gordon Taylor's fault. It all goes back to the April launch of the Risc PC and Gordon Taylor saying: "OK, we have this Acorn machine. What it needs to have is an incredible Unix operating system." Mark had seen a newsgroup posting asking if anyone was interested in the project. There was a gathering at Imperial, then there was a lot of Internet chat.'

'During this time,' says Mark, 'I had being trying to get to grips with the inside of the Risc PC without a technical

We hope to make a lot of money out of building supercomputers out of ARMs

reference manual, and had started attacking a few things. Acorn World was coming up and we wanted to get something working by then: we managed a command line and a square blob going up and down the screen. It did not look impressive but we actually had it multitasking – there was lots of interest.'

To cut a long story short Mark wrote most of the kernel and did most of the work, and Neil did most of the talking. I also must mention here Melvyn Tang Richardson aka 'Nut' and Rob Black, the other two founding members of Causality. There was loads of interest from large companies. Mark was invited to Acorn to talk to Oracle Japan, to show them what Unix could do on the ARM.

'Originally, we were were going to form a non-profit organisation,' says Neil, 'basically to get rid of liability, because we were getting American commercial companies to use it.'

'But NCI offered me a job,' butts in Mark. 'I decided that we would form a company and do it via that instead. Basically I thought it would be better to form a profit-making company in the UK so I could stay in the UK; that's how we started commercially. We have always made money. Contracts pour in. We have even had to turn work down.'

Causality has done work for Acorn: it was involved with Galileo. Its links with Simtec go back to the ill-fated Hydra multiprocessor project. Neil wrote a lot of the support code and the floating point.

'We are doing this new multiprocessor thing with Simtec,' enthused Neil, 'which is with a group of neural network artificial intelligence researchers in the South of France. We hope to make a lot of money out of building supercomputers out of ARMs.'

Mark is no stranger to multiprocessors; at the age of 15 he was building the *Brinney Brain*: 'I used to build a lot of my own computers. I had the Brinney Brain running by the time I was 16: it was a nice podular stand-alone thing'.

The day ends as many a good day has, on the doorstep of Foyle's bookshop, where I say goodbye to Mark. We agree that if we were to go shopping for books together, we'd encourage each other to spend far too much. We had parted from Neil at the tube station in Trafalgar Square on the grounds that he was fussing: he didn't want to walk so as not to wear out his camel-skin shoes. Shoes not for walking? It takes all sorts.

Jill Regan AU

Special Pineapple RiscPC Computer price deals

Bronze' 233Mhz SA, 1.7Gb hd, 8mb, x8 CD 233Mhz SA, 1.7Gb hd, 40+2Mb, x8 CD, 2 slot b/plane 'Gold' 233Mhz SA, 4.3Gb hd, 64+2Mb, x36 CD, 2 slot b/plane

'High Spec' 233Mhz SA, 4.3hd, 40+2Mb, x8 CD, 586-100 PC Card,

- £ 899 inc vat

- £ 999 inc vat
- £1149 inc vat



PCPro v2 & PC Ex, Windows98, 15"mon, 120 watt spkrs - £1699 inc vat Upgrades available with any computer purchase:- Digital monitors 14" £99, 15" £149, 17" £269, Upgrade x8CD to x36CD - £25, Upgrade PCPro to PCPro v3 - £25, Add Studio24Pro - £49 All computers are supplied with Studio 24 v1 software and one years sub to the Virus Protection Scheme. Finance is available on the Acorn items in the above deals, over 12 or 24 months - 9.9% APR

New 600 dpi Plustek Scanner - £149 inc vat! The Plustek 9636 model is now available with Acorn software. This model has a 600 dpi optical resolution and 36 bit colour depth. It comes complete with PC software (including OCR) and Imagemaster and Twain for the Acorn. It plugs into the printer port but provides a 'through' connection for a printer, so no switch box is required. Price just £149 inc vat. **RiscPC Memory** Monitors Internet £89.00 1Mb VRam Iiyama 15" 350 Iiyama 17" 400 (S701GT) Iiyama 17" 400 Pro 56,000 Flex modem - Flash U/G £ 69.00 £ 175.00 £39.99 £ 89.00 Acorn !Browse (CD only) 2Mb VRam £ 363.00 Ant Internet Suite software £116.33 £ 14.00 8Mb SIMM £ 385.00 £ 24.00 16Mb SIMM Iiyama 19" 450 £487.00 **General Upgrades** 32Mb SIMM £ 39.00 Iiyama 19" 450 Pro !NEW! £ 527.00 **Backplanes** £129.00 Iiyama 21" 501 Pro 64Mb SIMM £ 821.00 2 slot backplane £ 34.00 Iiyama 21" 502 Pro £868.00 PC Cards & Software 2nd Slice (inc 4 slot backplane) £ 89.00 CTX mons have (3 year on-site warnty) **Midi Card** DX4-100 PC Card £ 229.00 CTX 14" Digital Scan £139.00 CTX 15" Digital Scan CTX 17" .28 70Khz Digital CTX 17" .26 92Khz Digital MIDIMax II - Midi Card £92.83 586-100 (Acorn) PC Card £ 329.00 £ 175.00 SCSI Cards 586-133 (CJE) PC Card £ 351.33 £ 299.00 PC Pro & PC Exchange £ 49.95 Eesox SCSI II £145.00 £ 385.00 CTX 17" Futura .25 dot Cumana SCSI II £175.00 Windows 98 (Installed for you) £ 79.00 £429.00 MicroSoft Small Business Ed. £179.00 SCSI Cable £ 16.00 Acorn AKF60 14" £264.00 Flatbed Colour Hard PAL Colour Printers Drives Scanners **TV Coders** are now a growing number of There Pincapples removable drive system is vailable for IDE and SCSI systems. scanners which will work on RiscOS. Canon BJC80 - portable col £233.00 The Plusteks work on the parallel port IDE removable system £19.00 We now have two PAL TV coders Canon BJC250 £149.00 so no extra interface is required. SCSI removable system £25.00 available which allow the output of any Canon BJC620 - colour £229.00 All our scanner prices include Twain IDE or SCSI cable £5.00 Acorn Computer to be displayed on a Canon BJC4300 Canon BJC4550 (A3) £198.00 and Imagemaster software. SCSI **Bare IDE harddrives** normal TV or recorded onto a video £287.00 scanner prices do not include the SCSI recorder. Both models have S-VHS as 1.7Gb IDE Canon BJC5500 (A2) £649.00 well as standard video outputs. The VGA converter works in VGA and SVGA screen modes and is ideal for the connecting cable. Studio24Pro instead £99.00 £139.00 2.0Gb IDE Epson Stylus 200 mono of Imagemaster - just £30.00 extra! Epson GT5500 SCSI £259 .5Gb IDE £109.0 Epson Stylus 200 colour £179.00 £259.00 4 3Gb IDF £124.0 £139.0 Epson Stylus Colour 440 £139.00 Epson GT9500 par&SCSI £519.00 RiscPC. Please ask for more info. 4.3Gb IDE (Cyclone 5.25") Epson Stylus Colour 640 £179.0 Plustek Optic Pro 4831 300dpi £129.00 VGA Converter PAL Coder £159.00 PLC/4 PAL Coder (mode 12,15) £99.00 6.4Gb IDE £159.00 Epson Stylus Colour 850 Plustek OpticPro 9636 600dpi **IDE Expansion** HP Deskjet 690C £259,00 £149.00 !!New!! for A3020, A4000, A5000, RiscPC HP Deskjet 870C x4 IDE Expansion card £69.00 £369.00 HP Laserjet 6L (laser mono) SCSI Cards & Cables £279.00 **Bare SCSI harddrives** Pineapples Virus Protection Cumana SCSI II Card 1.0Gb SCSI £175.00 £99.0 Scheme has been running Other Items EESOX SCSI II Card £219.00 £145.00 4.2Gb SCSI for over five years and is 50 mini 'D' to 50 Centronics 50 mini 'D' to 25 'D' plug £16.00 6.4Gb SCSI £299.00 still being updated with new Acorn !Browse (CD only) £39.99 £16.00 **ZIP** parallel port drives viruses on a regular basis. Acorn RiscCafe (JAVA)(CD) 25 'D' plug to 50 Centronics £39.99 £13.99 Iomega parallel port ZIP drive £149.00 Iomega SCSI internal ZIP £129.00 New software versions are RiscOS 3.7 upgrade £58.75 Switch Boxes sent out to members every RiscOS3 PRM vols 1-4 £99.95 These are ideal for parallel port Iomega internal IDE ZIP £75.00 three months and the total RiscOS3.6 PRM vol 5a £29.75 M. Gast switching between a printer & scanner (for use with IDE expansion card) number of viruses which Sibelius Junior v3.0 £55.00 Parallel 2 way 100Mb ZIP cartridge £9.99 can be removed is over 100. £16.99 Sibelius 6 software v3.5 £115.00 Parallel 4 way Pack of 5 Zip Cartridges £45.00 Joining fee just £28.20 £19.99 Sibelius 7 Student v3.5 £351.00 Serial 2 way £19.99 Inexpensive multi-user licences Sibelius 7 software v3.5 £699.00 25 'D' plug to 25 'D' plug £4.99 'If you're interested in virus protection, Acorn Netstation (Ethernet) £351.33 Studio24Pro 25 'D' plug to 36 Centronics Monitor+Keyboard 2 way 15way HD to 15way HD cable £4.99 join the Pineapple virus protection Acorn Netstation (Modem) £351.33 £19.99 scheme and buy Killer. Accept no 'Many Acorn User front covers A7000 upgrade to A7000+ £249.00 Many Acorn Oser from scratch £4.99 alternative - 'Acorn User Feb 96 15 way HD fully screened £16.99 We have many items in stock which are using this program alone, Male-male mini DIN keybrd cab £3.00 not shown in this advert. Please ask for As an Acorn Centre of Technology concrete proof of the power of this creative tool'- Acorn User Mar96 anything you require which may not be shown. We also undertake repairs and Mini DIN to 5 pin keybrd adptr £1.50 Pineapple Software can help you with 5 pin DIN to 5 pin DIN keybrd £2.50 Now just * £99.00 * Users note FREE update v2.16 is now available ALL your Acorn computer related upgrades to all Acorn computer models. Many other types also available please ask problems. Collection can be arranged if necessary. Pineapple offer some of the

Pineapple Software 352 Green Lane, ILFORD Essex IG3 9JS Tel 0181 599 1476 Fax 0181 598 2343 email:- sales@pineaple.demon.co.uk www:- http://www.pineaple.demon.co.uk

Terms: All prices *include* 17.5% vat. Carriage £15 on computer systems. £5 on most other hardware. Other items free. Phone for quote outside UK.Official orders, cheques and all major credit cards accepted at no extra charge.

Fineapple offer some of the finest and friendliest after sales support you will find' -Acorn User Mar 96 Why not come and visit us and see most of the Acorn range of computers and hardware. Monday - Friday 0900 + 1730 Saturday 1000 - 1700



Videodesk is a powerful non-linear video editing system. It allows full-size, full-colour and full-motion video to be edited to frame accuracy, and effects and titles added. The finished material can then be output back to video for recording or display.

Key Features:

- Composite and S-Video inputs and outputs.
- 50 fields per second capture and playback.
- 24 bit colour range.
- Resolution of up to 768 pixels x 576 lines.
- High-quality uncompressed still grabs.
- VITC Timecode input and output.
- 16 bit stereo audio inputs and outputs.
- Audio sampling at up to CD and DAT rates.
- Multiple audio tracks (polyphonic).
- Instant playback of edits.
- High performance Replay movie capture.
- Multi-level undo and redo.
- Edit Decision List (EDL) generation.



Risc TV is a unique multimedia digitiser complete with built-in television tuner and audio processor, which allows you to watch television on the desktop and digitise high quality still images from the tuner or an external video source.

Unlike other digitisers, **Risc TV** uses special hardware to overlay video directly. So, full motion video can be displayed in 24 bit colour, with no processor or bus overhead. Now you can watch television and use your computer!



Sophisticated video editing software is supplied as standard, which is flexible and simple-to-use. Editing is performed on a multi-track time-line with separate audio and video tracks.

Video effects are generated digitally and include over 100 dissolves, wipes, fades and slides. Comprehensive titling software uses the RISC OS outline font system, and titles can be made to scroll, flash, fade and be overlayed onto the video.



We support Epson's range of high quality colour flat-bed and film scanners, suitable for home, school and business applications. All scanners are supplied complete with our renowned **ProImage** driver software.



As the leading independent supplier of digital cameras to the Acorn market, we have support for over thirty different models from the leading manufacturers -Agfa, Epson, Olympus, Sanyo, and Sony.

Contact us for full details of scanners and cameras, and latest pricing information.



For the Complete Picture...

Irlam Instruments Ltd,

Brunel Science Park, Brunel University, Kingston Lane, Uxbridge, Middlesex, UB8 3PQ. Tel/Fax: 01895 811401 Email: sales@irlam.co.uk Visit our website: www.irlam-instruments.co.uk

nners &



For the Complete