BRITAIN'S LEADING MAGAZINE FOR YOUR ATARI ST

ISSUE 5 ■ DECEMBER 1989 ■ £2.95

ST FORMAT

COVER DISK 5

THE UNTOUCHABLES

OUR EXCLUSIVE *FULLY PLAYABLE* DEMO OF OCEAN'S ALL ACTION GANGSTER LICENCE WILL BLOW YOU AWAY

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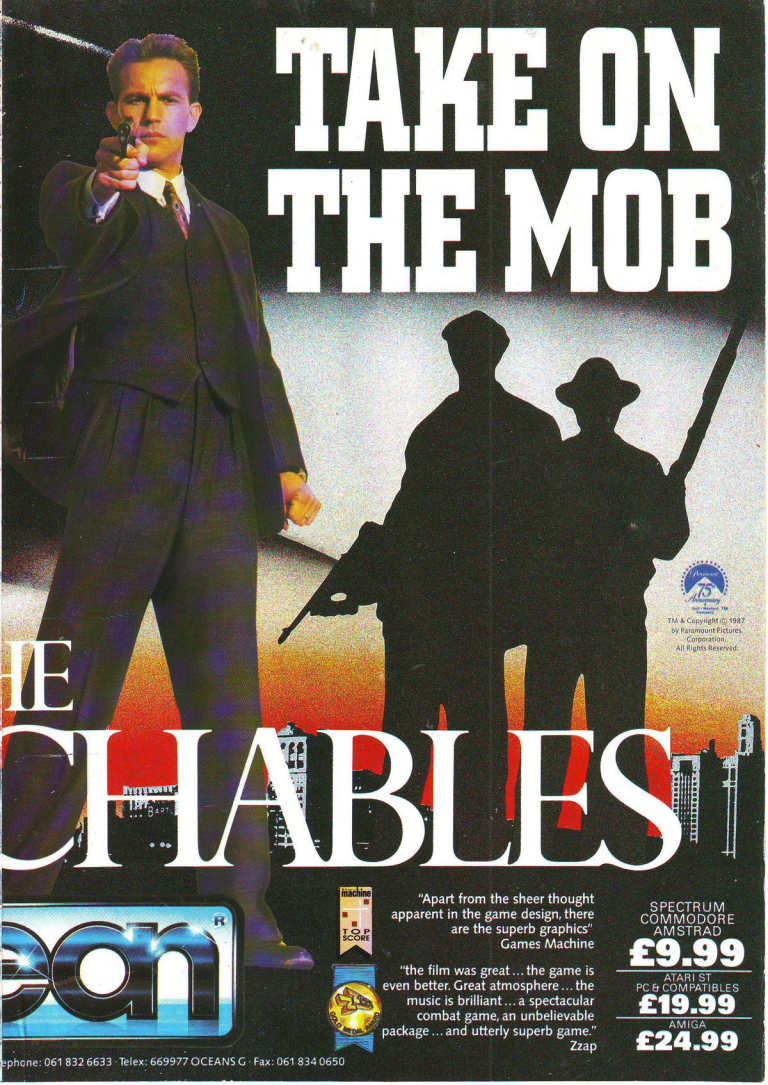
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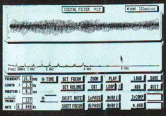

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Let video speak unto ST: genlock has finally arrived. We give GST Gold a good going over

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COVER DISK 83

Side A

UNTOUCHABLES A brilliant playable taster of Ocean's nervewracking gangster film licence
QUARTET A demo of Microdeal's fantastic new four channel sound sequencing package
RECOVER Rescue those dead files!
QMOUSE Put life in that rodent!

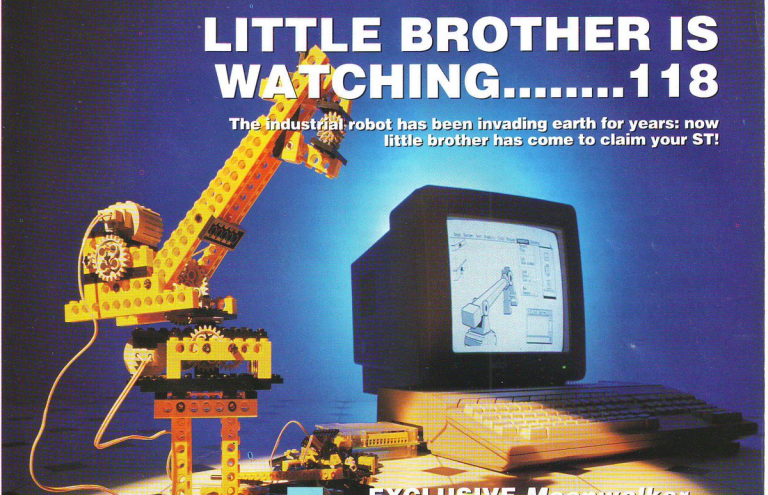
Side B

WORDCOUNT Er... counts words, really
X-UTILITIES Copying/formatting set-up
ANIMATION Two *Cyber* treats (see Pickavance's progress on page 101)
FLYING START The complete comms solution
– and much, much more!

■ On the Cover Disk: an exclusive fully playable demo of Ocean's thrilling *Untouchables*

LITTLE BROTHER IS WATCHING.....118

The industrial robot has been invading earth for years: now little brother has come to claim your ST!



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ST FORMAT ISSUE 5 DECEMBER 1989

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EDITOR *Steve Carey* TECHNICAL EDITOR *Jerry Glenwright* GAMES EDITOR *Mark Higham* DISK EDITOR *Richard Monteiro* PRODUCTION ASSISTANT *David Collins* DESIGN ASSISTANT *Kevin Hibbert* PUBLISHER *Greg Ingham*
■ ADVERTISING *Margaret Clarke, Nora Lawton: 2nd Floor Rayner House, 23 Higher Hillgate, Stockport, SK1 3ER (061-474 7333)* AD PRODUCTION *Louise Cockroft*
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GST SCUPPER PIRATES

GST Software Products, the company responsible for the best-selling DTP package *Timeworks* as well as a range of other popular ST programs, have taken action against a large-scale software pirating operation in France.

GST's former French distributor had been manufacturing and selling allegedly counterfeit copies of *Timeworks Publisher* and *Timeworks Publisher Life*.

During a massive police raid – the biggest of its kind in France – on the premises of Wings Micro Electronics, a substantial amount of what is said to be pirated material was seized.

"40% of our products are sold outside the UK," said GST's Managing Director David Rose. "France is one of our most important markets. Software piracy is a threat to all our customers, and the action we have taken will help to protect all parties."

GST have recently appointed Guillemot of La Gacilly, Brittany, as their new importer/distributor.

"FURIOUS" ATARI THREATEN TO TAKE THEIR BALL HOME

Recent criticisms of Atari's latest machine the STE have produced an extraordinary response from the company. Following the comments of several top programmers in last month's *ST Format* that the machine was "too little, too late," Atari have threatened to withdraw development machines from the programmers involved.

In order to begin software development, a handful of programmers were given the STE with a clause committing them to a non-disclosure agreement designed to prevent adverse criticism.

This type of agreement is standard practice among computer manufacturers who involve "outsiders" in their projects – hence Atari's anger at the disclosures.

"They can have opinions, but they should keep them to themselves," stormed an Atari spokesman. "We're furious, and you can print that!"

In a recent census by *ST Format*'s sister magazine *New Computer Express*, however, not all of the programmers polled expressed adverse criticism. "A lot of people won't bother taking advantage of it, which is a shame," observed *Trip-a-Tron* programmer Jeff Minter. "If I get one I'll try and get the best out of it. I wouldn't mind using the hardware scrolling just because it's there."

Glen Corpes of *Populous* fame agreed with Minter: "I'm still finding my way around the machine but it looks good."

Atari are confident the STE will be available in time for Christmas, and will be priced the same as the 1040ST at £499. Sceptical observers will believe it when they see it.

ATARI BY ANY OTHER NAME

In a bid to increase their profile in the games market, Atari Software are launch an all-out attack on the 16-bit software scene – and doing so under an a new name!

The new label is to be called ARC, and a whole host of new software will emerge through it for the ST, the PC and something called the Amiga. 15 games are lined up for release before Christmas, with many more planned next year.

Whether Atari will be able to topple sofware giants like US Gold, and Ocean remains to be seen. But Mirrorsoft, perhaps their leading competitor in the 16-bit market, don't sound too bothered. "With Tim Chaney behind it, they've got the right credentials," was the Mirrorsoft verdict, "but we can't offer an opinion without seeing their software."

■ **ARC's Tim Chaney: the right man – but is it the right job?**

OLD GOLD

The signing of Chaney, industry veteran and former director of US Gold, to plot their strategy is a bold move that signals Atari's seriousness of purpose. Heavyweight marketing and development plans are afoot.

The name change is an implicit admission that Atari have a past to live down: previous releases such as *Tempest*, *Enterprise* and *Starbreaker* raised little excitement and are unlikely to have generated vast amounts of cash. In fact it is being suggested that the change is taking place largely so that PC and Amiga owners won't be put off buying Atari products.

On the other hand ARC will, of course, still be able to enjoy Atari's clout in attracting top programmers and trade attention.

■ **By Atari, for Atari: ARC's new assault on the ST games market**

CONDOR UNVEIL NEW PLUG-IN PC EMULATOR

After *PC Speed* and *PC Ditto*, PC emulators are really taking off. Condor, new to the ST scene, are set to release yet another before Christmas.

Supercharger differs from *PC Speed* and the soon-to-be-released *PC Ditto 2* in that it doesn't plug inside the machine. Instead, the *Supercharger* connects to the DMA port and provides PC emulation that way. A through port is provided for daisychaining hard drive units or an Atari laser.

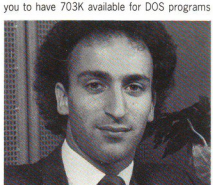
The *Supercharger* operates as an MS-DOS operating system and contains its own expansion bus. This lets you plug standard PC boards into an optional expansion chassis, currently under development.

Howard Newmark, Condor's head, explained to *ST Format*, "We've studied the various methods of PC Emulation on the Atari, and have found the *Supercharger* to be more than just an emulator. No other emulator allows you to have 703K available for DOS programs on a 520 ST. We think this will revolutionise PC emulation as we know it today."

Another feature *Supercharger* boasts that *PC Speed* lacks is the addition of a hot key. This allows you to toggle between MS Dos and TOS without needing to re-boot the machine. Condor are claiming a highly impressive Norton speed rating of factor 4. Immediately the emulator is brought into use, the standard Atari mouse is treated as if it were Microsoft compatible. 512K of RAM is provided as standard, although 1MByte can be purchased.

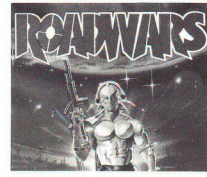
Although currently only a CGA emulator, VGA emulation will be available soon. The emulator uses a V30 processor, running at 8MHz. It's available now at £299: contact Condor on 01 828 9755.

■ **We put the *Supercharger* through its paces in next month's *ST Format*.**



■ **Condor's Howard Newmark: first hardware PC emulator on the way**

MASTERTRONIC DO GAMESTERS A FIVER

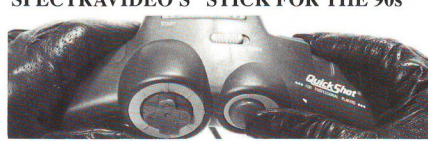


■ ***Road Wars*: £4.99? 16 bit? Surely not!**

Mastertronic have announced a new 16-bit label which is to release games for just £4.99. The intention is to re-release older games such as *Road Wars* and *Enterprise*. The price is the lowest ever charged for 16-bit games and represents a major reduction. Budget product manager, Andrew Wright, said, "It's become increasingly obvious that £9.99 was not a realistic price-point for budget 16-bit software."

■ **And 8-bit budget champions Codemasters are also joining the fray, with titles such as the *Dizzy* series and others now reaching the ST for the first time.**

SPECTRAVIDEO'S "STICK FOR THE 90s"



■ **This item is from Spectravideo, who are so proud of it that they're refusing to call it a joystick but rather a "game controller." To be known succintly as the "Quickshot QS 129 flight controller," it will, say its makers, take game playing "into a new dimension." The moulded plastic shell is designed to be a hand-held joystick with one major difference – it's held in both hands. Spectravideo's boss, Ashwin Patel, claims that the Quickshot is a "joystick for the 90s."**

SNIPPETS SNIPPETS SNIPPETS SNIPPETS SNIPPETS

Tonic Audio have RAM upgrades for all STs. 520s and 1040s can be upgraded to either 1Mb or 2.5MByte by sending in your machine. The 1Mb upgrade is going for £120 and the 2.5MByte is a snip at £320. Tonic Audio are eagerly awaiting your call on 0222 863906.

SOUNDS INTERESTING

■ Three new music packages have recently been announced. Keynote – a new company – kicks off with *Chameleon*, claimed to be the "first true programmable universal patch librarian."

Complete libraries can be stored in memory and accessed instantly with the help of database-type librarian functions. The thing costs £90, but you try it out in a save-disabled demo version for just £3. Ring Ian Paterson's Keynote on 0761 32610.

■ US based Musicode is now marketing its well established range of voice development programs for Kawai and Yamaha synths. Each system costs between $69 and $99, and you can find out more from Musicode at 5575 Baltimore Drive, Suite 105-127, La Mesa, Ca 92042.

■ Thirdly there's the announcement of another new name, Voxel Software, whose launch product is *MusicBase*, a music industry contacts database, intended to cash in on the expected success among musicians of the Stacy, Atari's ST portable.

Expect a £40 price mark – for *MusicBase*, that is: the Stacy's a good bit more. (Incidentally, why are Atari releasing only the hard disk version of the Stacy? I think we should be told.) Voxel are standing by on 01 457 1916.

VIRUS GUIDE

To help combat the increasing threat of viral attacks a new handbook is being released with a special section on the legalities of writing and planting viruses.

The handbook is for both technical and non-technical users and explains what a virus is and how to cope with one. *Arming against viral attack – the complete guide*. Price Waterhouse Publishers are on 01-378 7200 for more details.

ANTI-SEXIST CAMPAIGN GAINS GROUND

OASIS, the Organsiation Against Sexism In Software, celebrates its first birthday this month. Sandra Vogel, founder of the organisation, decided to campaign against sexism after seeing so many games featuring offensive female (and indeed male) stereotypes.

Vogel is an ST owner and a keen games player, but argues that unnecessary elements spoil her enjoyment of leisure software. "I can see no reason why stereotypes of women and men should have to be used in computer games," she said. "One of the advantages this technology has over other games media is that you can do literally anything with a computer."

OASIS has campaigned hard against offenders in both the advertising and games industry throughout the year. "It's been a time when hardly a month goes by without a letter appearing in a magazine or without particular software houses being ticked off. The first year was a testbed. It has proved that there is a need for OASIS in the computer industry."

Membership of the organisation costs £3 (£5 overseas) and for that, members receive six magazines per year and lists of recommended software. Applications for membership and further information should be addressed to Sandra Vogel, 3 Alden Court, Stanley Road, Wimbledon, London SW19 8RD.

PIPELINE *IN THE, ER... PIPELINE*

Dragon's Lair and *Space Ace* distributors Entertainment International have announced a tie-up with Lucasfilm in the States. EI have been developing a project which was originally called *Pipeline* but has now been renamed *Pipe Dream*. Lucasfilm spotted the game and felt that it was something they wanted to market.

No-one's saying how much was involved in the deal but it is the first time that Lucasfilm have shown an interest in an outsider's products. They've wielded their power already by getting the name of the game changed and demanding – and getting – the alteration of numerous aspects of the original concept.

The ST game was previewed over a year ago. Recently we sneaked a look at the new version. The aim, apparently, is to piece sections of pipe together and allow oil to flood through. Sounds inspired? Well no, it sounds duller than ditchwater actually, but according to well informed sources (ie Entertainment International) Lucasfilm are hoping to cash in on the 'sheer addictiveness' of the game. And Lucasfilm didn't get where they are today without being able to spot a winner.

Lucasfilm will market it in the States in January. Unfortunately we won't see the product until February.

MONST BY HISOFT

In the November issue of *ST Format* (issue 4) we erroneously stated that the *MonST* (version 1) program published on the cover disk was a public domain program. This is incorrect.

All versions of *MonST* and the other programs that make up *DevpacST* (versions 1 and 2) are the copyright of HiSoft. It is a breach of HiSoft's copyright to copy these, or any other HiSoft program, in any form whatsoever, without the express written permission of HiSoft.

■ See the special offer on page 117

AND THE WINNER...

We've had thousands of replies from eager ST owners hoping to win one of the new Mega STs in the Mega competition featured in *ST Format* issue 3. And now, after sleepless nights of torment (yours, that is: not ours), we've managed to select the lucky winner *(cue sound of golden envelope being torn open, ripple of anticipation from the assembled)*. Will the mysteriously Christian name-less C Bainbridge of Dartford in Kent please take a bow.

Within days of this announcement – well a few weeks anyway – a satisfying thud on the doormat will signal the arrival of your shiny, sleek and sexy Mega ST. Well done C Bainbridge. Perhaps you could swap your current piece of kit for a first name?

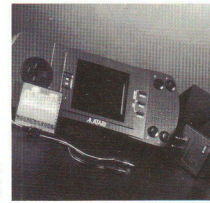
■ **Details of this month's competition are on page 81 where we're give away even more great hardware!**

MONTBUILD IN SHOW DOWN

Montbuild, organisers of the VNU Business Publications Personal Computer World and Personal Computer shows for the past 11 years, have decided to resign their position as organisers and pursue their own exhibition plans.

Fundamental differences between Montbuild and VNU Business Publications concerning the future direction of the PC show are said to be responsible for the split.

OH WHAT A GIVEAWAY!



■ **Don't miss the stunning, white-hot *ST Format* 6, available all over the place from Thursday 21 December. We have *five* of Atari's handheld Lynx games machines to give away!**

SAFE SEXY SOFTWARE

In a novel and unbelievably tacky attempt to extract Christmas cash from potential punters, public domain library Paradise Computers are including a free condom – yes, really – with every order for PD software over £4.

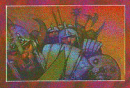
Still, they're not just outrageous attention seeking wacky funsters at Paradise, because for every pack sold during the festive season of their new PD starter pack (alleged to be a 'super selection of great goodies for the PD novice'), the company will donate 50p to the Spastics Society.

COVER DISK 4: REPLACEMENTS

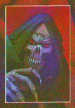
If you were one of the readers or newsagents in the north London area inconvenienced last month by the absence of a Cover Disk from *ST Format* 4, please get in touch. Due to problems in the complex process of getting the magazine from us to you something went horribly wrong.

Please enclose some proof of purchase. We don't necessarily expect a till receipt for £2.95; just write down where and when you bought the mag and get your newsagent to sign it. Then send it to us, together with an envelope with your name and address on, to: Cover Disk 4 Replacements, *ST Format*, 4 Queen St, Bath BA1 1EJ. This offer does not extend indefinitely, so if you missed out last month, get your skates on!

BLADE WARRIOR™



The beast was present in the land and from tower to tower the sorcerers voice called upon him. As night encroached and set the sun to flight, so his legions made ready to conceal the tablets that would see daylight banished forever.



So, as the same last bloody light drained from east to west, the paladin came forth, ready to do battle against the legions of the night, using all his might and skill in this tale of swords and sorcery.

Screenshots from Amiga version

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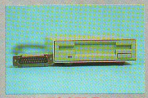

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PC Ditto 2 / PC Speed Call

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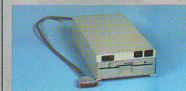

This fully switchable 5.25" 40/80 track drive can be used to read and write PC formats as well as normal ST formats. Comes complete with instructions and built-in PSU.

Triangle Turbo 3 Hard Disks

Triangle Turbo 3 + 48MB Hard Disk £499

This state-of-the-art 48MB 28ms lightning fast drive from Triangle comes with ROM autoboot for an extremely fast boot up time. The Turbo 3 can support SCSI and Atari access modes and is fully compatible with emulators like PC Ditto, Aladin and Spectre 128. Comes complete with instructions, built-in PSU and matching Atari case.

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STF5

THE FUTURE'S SO BRIGHT

STORY *Mark Higham and the team*
PHOTOGRAPHY *Steve Carey*

As the games houses go into frenzy mode, we take a cool, calm and considered view of the titles you could be playing next month

Here's a taste of a few of the games that have been pouring through the *ST Format* letterbox in the past few days. Reviews of many of them next month...

PARK'N'RIDE

You've inherited a theme park from your grandpa. But the park has no customers and no staff, and you have to discover why everyone's abandoned it. No, it's not market research for Maplins; it's Mirrorsoft's *Theme Park Mystery*. Never a company given to making false claims (it says here), they're boasting that *Theme Park Mystery* is going to take the games industry by storm with its action and special effects. We'll be the judge of that, if you don't mind.

RAYS ARE SHARP

Four prisoners from the Sidereal Prison institute have escaped with lunar assault vehicles. Their aim is to take revenge on the planet Earth. You don't need to be told how you fit into this scheme. *Dark Century* features two-player action using a split-screen mode similar to Bloodwych. Titus are making much of the game's 3D ray-traced graphics. We shall see.

THE LAST WAVE

Logotron's *Bad Company* features simultaneous two-player option and exciting sprite-based 3D combat routines in true *Operation Thunderbolt* style. You could be in for a treat as you and your sidekick wipe out wave after wave of enemies in a ferocious blasting session.

TRIAL RUN

The tribal elders of the planet Tasmin have gathered in the Great Hall to watch the ritual testing of their young warriors. As they wait, an image of their founding elder appears on the screen and calls for the first warrior. The young Tasminian climbs into the test craft and the trials have begun. *Starblaze* is a pure solid vector 3D shoot-em-up with five colourful backdrops and over 100 different attack patterns.

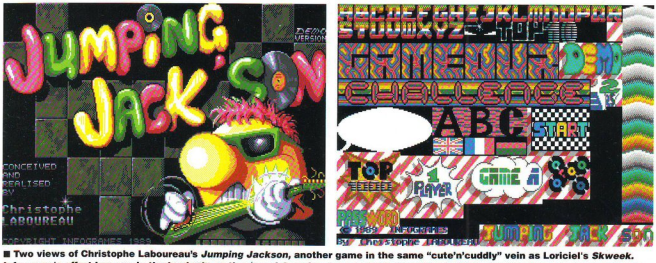
BAND ON THE RUN

More than just a wild vigilante shoot-em-up, *Resolution 101* has you driving a training vehicle and trying to assassinate a band of criminals roaming the planet.

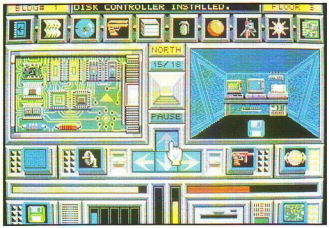
3D graphic routines form the basis of the game and make your journey around the cities a thrilling challenge. This could well be the most promising game Logotron have released since *Archipelagos* – which is hardly surprising since the 3D routines are said to be derivatives of those used in that game.

GORE BLIMEY

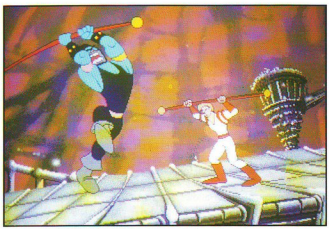
There are 30 different types of enemy to conquer in Gremlin's *Axel's Magic Hammer*, including the traditional heavy breathing green dragon. You battle through this dangerous adventure in a bid to find the beautiful maiden who bowled you over (stop me if you've heard it before). So far, so what: but this isn't just another soppy scenario. There's a subtle balance of blood and gore in the shape of the magic hammer, with which you smash your enemies into small pieces. Told you it was subtle. The game has eight levels spanning 200 screens and including a Roman village, a castle dungeon and even an Egyptian tomb.



■ **Two views of Christophe Laboureau's *Jumping Jackson*, another game in the same "cute'n'cuddly" vein as Loriciel's *Skweek*. Infograme's effort has you in the lead role as the son of Jumping Jack (a kind of musical in-joke), hopping from square to square and putting records into the jukebox. Something like that, anyway. Review next month**



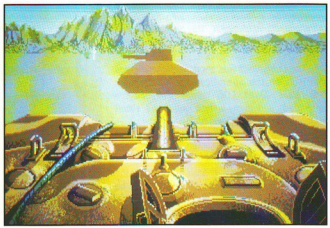
■ **(above) SAVE, SAVE, SAVE! Accolade's *Day of the Viper* puts you in control of Viper V. Mission: to penetrate enemy defence lines and re-activate a defence computer. Performing this nifty little task will (surprise,surprise) protect the Earth from attack. Catch the review in next month's monster issue**



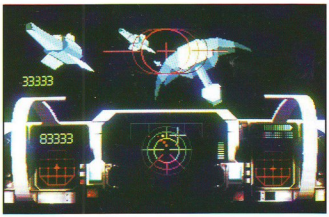
■ **(above) CLOSE ENCOUNTER: Empire's going to send you into orbit, if the demos of *Space Ace* are anything to go by! The game features astonishing cartoon visuals and lots of sampled speech, combining to make it what may prove to be one of the all-time great releases. We'll have to wait until next month to see how well it plays, but the signs are good. Readysoft admitted there were problems with the playability of *Dragon's Lair*, their last release, but these have supposedly been fully resolved in *Space Ace*. Eagerly awaited**

■ **(above) DEBUGGER THIS for a scenario: originally shown at Mirrorsoft's Amsterdam press conference last March, the leadenly titled *Dynamic Debugger* is now ready for the ST. Looking better than it sounds (not hard), it incorporates smooth bi-directional horizontal scrolling at 50Hz, and, using palette shifting techniques, manages to deliver more than the standard 16 colours on screen at once. Set in Shogglewaggle *(oh dear), DD* centres on an apprentice-hero about to undergo his last big test before becoming a full-blown Dynamic Debugger**

■ **(below) TRACK RECORD: a 3D tank simulator, Loriciel/US Gold's *Track Attack* is touted as an accurate simulation of the control method used in an M1 tank. More used to driving Fiestas, Escorts and suchlike, we wouldn't be able to vouch for that, but it does provide several different views of oncoming craft**



■ **(below) ALGORITHM METHOD: Microdeal are keeping all items crossed that this flight-sim becomes one of the classics. They're already daring to compare it to Spectrum Holobyte's mighty *Falcon*. (What was it pride came before?) *Goldrunner* has a realistic flight deck and spectacular view of the landscape, but it's the 3D graphics, Microdeal claim, that surpass any other flight sim. The algorithms have taken over a year to perfect: 360 polygons plus can be drawn each second. If it lives up to the claims being made for it, *Goldrunner* could be a smash**



■ **(above) FOWL PLAY: King Arthur is back in *Ghouls 'n' Ghosts*, US Gold's conversion of the '86 Capcom classic. It's taken its time getting here, but judging by the playable demos *G'n'G* has all the charm and addictiveness of its arcade ancestor. King Arthur adapts to a bi-directional horizontally scrolling environment and still manages to defeat one ghost after another. He even gets to use spells to help him, but if these go wrong he finds himself transformed into a *chicken*. To hear more about the plucky fellow, catch the full, fowl story in next month's eggstraordinary issue *(you're fired – ed)***

ST ON THE STE

STORY *"Eureka"*

Sam Tramiel, president of Atari Corporation, is in talkative mood these days. Last month we reviewed an in-depth interview with Sam in an American ST publication. This time he's gone online, with a real-time conference on Genie, an American information service.

The conference was short, and interest was centred on the specifications of the new hardware. Over 100 Genie subscribers attended, and many asked questions about Atari's future products and plans.

US audiences are still awaiting product information on the STE and TT, which were announced in Europe some time ago.

According to Tramiel, Atari plan to ship the TT during the fourth quarter of 1989, and he claimed the STEs would be shipped to Europe in September, and reach the U.S. in October.

PORTFOLIO UPDATE

First shipments of the Atari Portfolio have reached the U.S. marketplace, beginning with a thousand units in mid-September. Full page ads in national magazines and newspapers are scheduled to introduce the product to businessmen nationwide. Dealers will be given an opportunity to sell a limited quantity, as promised, but direct sales from Atari will be heavily promoted.

The Portfolio, Atari's handheld IBM-compatible computer, looks set to be a bestseller. If it catches on in the U.S. it should give Atari enough market credibility to make an impact with other Atari computer products.

MOUSE WITH NO TAIL

Practical Solutions, an ST developer in Tucson, Arizona, has released a cordless mouse for the Atari ST. The mouse uses an infra-red signal to communicate with the base receiver connected to standard mouse port.

The cordless mouse can be operated up to five feet away, and according to the company, will eliminate "those old cable tangles," and provide faster and smoother mouse movement.

It's lightweight and contoured to be equally easy to use for both right and left-handed operators.

The new mouse is twice as fast as the Atari mouse (which was never going to be particularly difficult), with a resolution of over 200 cpi and a tracking speed of up to 600 mm/sec. This means movement takes less than half the rolling room normally required.

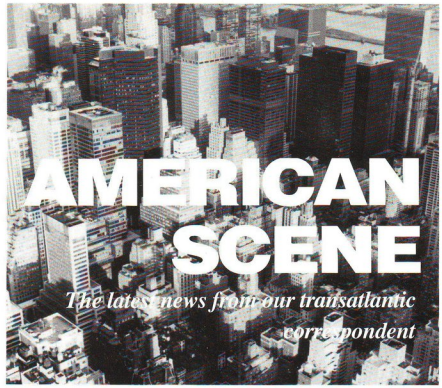
The cordless mouse also has an automatic shutoff to extend battery life (two "AAA" batteries required). It will retail at $130.

ATARI LOSES CALCULATED GAMBLE

According to informed sources, Atari is planning to shut down its Consumer Products Division, less than a year after its formation.

Based in Scottsdale, Arizona, it produced a complete line of calculators and adding machines for every home and business need. The reason for the closure was the failure to produce high volume sales.

The division was only formed early this year when Atari cancelled a licencing agreement with Hartech Ltd of Hong Kong and hired Hartech's president, David Harris.



CODEHEAD KEEP ON GROWING

CodeHead Software, a small company in southern California that develops exclusively for the Atari ST, is run by former musicians Charles Johnson and John Eidsvoog. Every program they've released to the ST market has been a smash hit with hackers and power users alike.

Programs such as *G+Plus* and *Hot Wire* even find widespread usage inside Atari Corp itself.

G+Plus ($35) is a font management system that replaces Atari *GDOS*. *G+Plus* is both faster and easier to use.

MultiDesk ($30 – and reviewed in this issue) allows the ST user to load and use up to 32 desk accessories at any time by providing a shell for accessories to load into. *Hot Wire* ($40) allows the user to access up to 54 programs by hitting a single "hot" key.

The CodeHead Utilities ($30) include the Multifile handler, the CodeHead Ramdisk and print spooler, a graphics viewer/slideshow program, and a disk copying programs.

FatBack ($40) is a fast hard drive backup program that backs up sectors, not files. Unlike other image backup programs, however, *FatBack* doesn't waste time backing up unused sectors.

Codehead can be contacted at (213) 386-5735, in Los Angeles, California.

POPSTERS PROMOTE ATARI

Many popular American musicians use Atari computers in the recording studio and in performance. The Atari has long been recognised for its built-in MIDI capability, which allows the computer to control electronic instruments and manipulate sound.

Teenage warbler Debbie Gibson has publicly endorsed Atari computers. Other big name Atari fans include the Pointer Sisters' band, ex-Mormon Donny Osmond, Van Halen, Peter Gabriel (he gave STs to his kids for Christmas), as well as boring ancient rockers Fleetwood Mac and Tangerine Dream.

Jazz greats like Lee Ritenour, Dave Grusin, and Oscar Peterson use Atari computers in the studio. They praise the machine for its ease-of-use and versatility.

Frosty Julia Fordham is currently touring the UK with Atari's help: they're backing her as the kind of musician ST users look up to, which may be a mistake.

Several major American motion picture soundtracks have been produced using Atari computers. For example, Ataris helped create the soundtrack for the films *Colors* and *The Milagro Beanfield War*.

ATARI SHARES CONTINUE TO RISE

Atari Corp. continues to find itself listed on the American Stock Exchange's most active list, trading close to 4 million shares in one week in September. Stock prices have risen dramatically, as much as 2 points in one day.

ATC stock is currently valued at about $12 per share, and is expected to rise even further as Portfolio sales increase and new products are released on the market.

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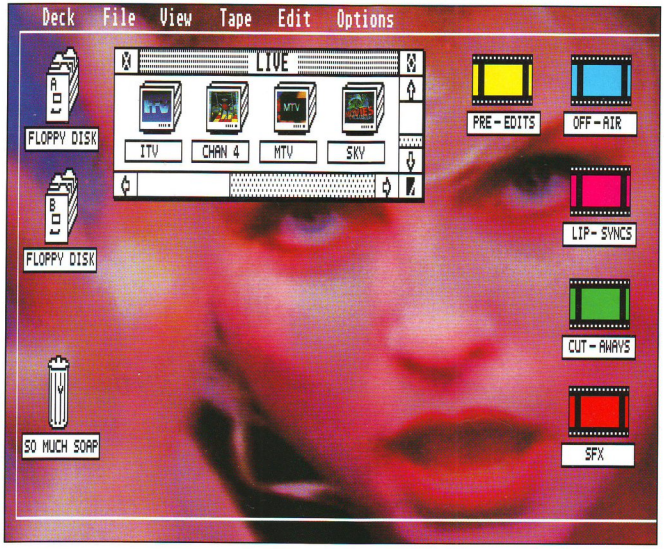
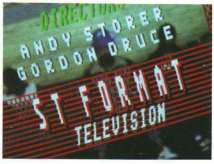
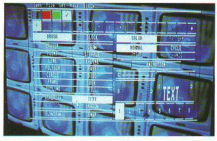


STORY *Andy Storer*
PHOTOGRAPHY *Gordon Druce*

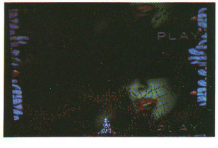
WELCOME TO THE VIDEODROME!

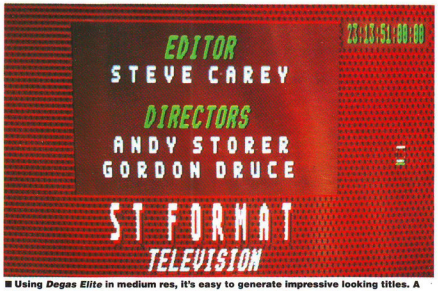


■ **Above: a vision of the future? Left: two examples of what can be done now using genlock. GFA's *Raytrace* (far left) pushes the ST to its limits. Combining animation with video footage is easy – all you need to sort out is relative positioning. By saving animations to videotape, sequence by sequence, you could make a three hour film – if you had the time and patience! And then there's *Degas Elite*, used to produce the dreadfully self-indulgent "STF TV" shot**

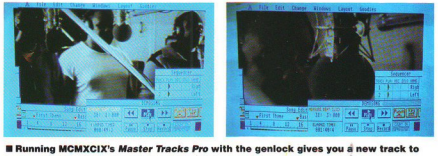


■ ***Xenon 2*** **is difficult enough as it is without warm wet lips getting in on the act! Any game with a black background can be superimposed over video – giving all those old games a new lease of life. You can also overlay games graphics onto moving video backgrounds. Ideal for demoing your latest hot code ideas to software houses!**





■ **Using *Degas Elite* in medium res, it's easy to generate impressive looking titles. A DTP package would give you even greter flexibility over fonts, while an animation suite like *Cyber Studio* would enable you to "roll those credits"**



■ **Running MCMXCIX's *Master Tracks Pro* with the genlock gives you a new track to sequence – a video track! Compositions can be sequenced as normal background video signals, cut so that video edit points coincide with beats in the music. Accurate edits can be guided by the sequencer's own time code readout and recorded to videotape. Finally, all you have to do is record audio to the videotape and you have a promo produced from ST's desk top**

With the massive growth in ownership of domestic video-recorders and, of late, the burgeoning camcorder market, it's little short of astonishing that we've had to wait virtually until 1990 to see video processing arrive on the ST desktop.

The hold-up's been due to the lack of a genlock – a device which allow you to superimpose computer and video displays on a single screen. The potential for low-cost video effects, editing, titling and animation is enormous, so just why has a genlock been so long in arriving? After all, whatever the intracacies of the code defining the image you see on your ST's monitor, it's a video chip that's producing it. All that's needed is a means of synchronising the ST's video output with that of a live or recorded video source and you're away, surely? Sounds simple enough, and indeed it is – once, that is, you've cracked the problem of the different rates at which videos and computers refresh their displays.

GENLOCK ON HOLD

The ST, unfortunately, isn't one of the easiest computers to doctor. Sending a sync pulse to the ST's clock to alter its screen refresh rate is extremely difficult, if not impossible, without making hardware modifications.

One brave company that tried, Digita International, spent a whole year developing a completely external sync pulse generator which the ST's clock would accept: and then ended up approaching the problem from another angle altogether.

Digita were determined not to make direct modifications to the ST's CPU. Their solution was to grab the ST's and the video source's screen outputs separately, shove them both into 640K of external RAM and use custom chips, a separate 68000 and a host of I/O controllers, all contained in a stand alone box, to synchronise the signals for re-display.

MultiGen, as the product is known, is now shelved until early next year. Digita considered that a price of at least £600 for an off-the-shelf model wouldn't be practical, so it's looking at ways of reducing component costs. However, their external memory method of mixing images would mean you could sync and mix signals from a variety of sources – be they different video formats, STs, STEs, TTs, PC Compatibles, BBCs, even, God forbid, Amigas. Let's hope it eventually does see the light of day.

If you own a video camera or recorder, all you need is a genlock to break into the brave new world of Desktop Video. Behold the pioneer: GST's Gold Genlock

GST Gold

MACHINE: ALL STs (SOME MACHINES MAY NEED SLIGHT MODIFICATION)

PRICE: £499

BY: THIRD COAST

CONTACT: 0257 424442

Given the difficulties outlined briefly here, the £500 price tag for GST's Gold genlock begins to look reasonable, if not exactly dirt cheap. In resorting to the hardware modification solution, GST has managed to crack the problem. And judging by the impressive results of its rock solid video mixing, they've done it in style.

The GST Gold genlock works by injecting an external sync pulse which alters the phase-lock of the ST's system clock, while continuing to provide horizontal and vertical scan synchronisation. The doctored monitor output then feeds back into the genlock unit, where it's processed by another video chip and fed back out to your display. On the way you can control the brightness, contrast, colour and horizontal position of the signal on your screen through the genlock's front panel.

All the necessary RGB leads are supplied, but you'll need a monitor with a RGB input socket rather than the socketless Atari badged models. You'll also need a Mega ST. This isn't due to any need for extra RAM but simply because not all versions of the 520 and 1040 are able to accept a genlock without even further modification. GST merely recommend contacting your dealer if you don't have a Mega – although, if you're brave, fitting the component is still an option.

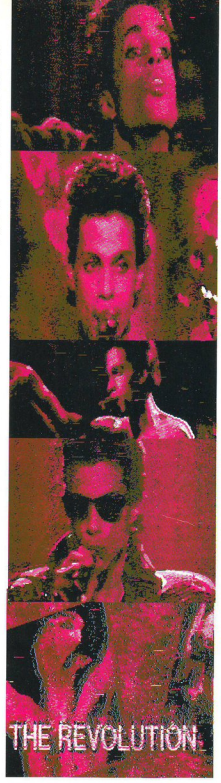
Once you've overcome the rather wacky translations from French that comprise the manual, and reassured yourself with the old adage that you don't need to be a mechanic to drive a car, you set about some minor surgery. Fortunately there's no soldering involved: all (all!) you have to do is take the IC 2591 chip out of its socket, put it in the supplied custom housing and replace it. You then connect its lead to the Gold unit and feed a video signal from a deck or camera into the system. After slapping home a short synchronising boot program in the disk drive, you flick a switch for ST rather than video display on the monitor, and the GEM desktop appears.

At this point you won't see a superimposed image of your desktop over the video feed. This is because a genlock mixes an RGB computer image with a video source by replacing everything that is black on the computer's display with the video signal. So you need to call up the standard Control Panel D/A and change green to black. At this point you'll be astounded by a flawlessly steady superimposition of your GEM desktop over the video image. Now, after the hard work, you're ready for the fun to begin!

FIRST FRAMES

Let's just clarify a couple of points. Just because you have a video mix on screen doesn't mean you can save moving video images to disk. A genlock merely superimposes one image over the other, either as a foreground or background "mask," the signals themselves remaining entirely independent. It is possible, however, to direct the mixed output to videotape, since the signal reaching your monitor in mix mode is to all intents and purposes a single signal.

As such, you can record all ST operations to videotape – whether it be a sequence of ST animation screens superimposed over a live



video sequence, or your latest software demo, recorded over black video, captured on tape as an indication of work in progress. Or it could be just the mere meanderings of your mouse. You needn't in fact do anything more than say, watch TV on your monitor as a background task while you're waiting for that complex raytracing operation to take effect, or waiting for your comms package to connect that call. Indeed, any on-line material you've accessed could be sent to video for later viewing a great deal faster than buffering it in RAM or sending it to disk or printer.

It's in the area of animation, though, that the Gold genlock will make most difference, since it allows you to output animations as long as a four hour videotape. You're no longer constrained by RAM or hard disk capacity. Lastly, if you use an ST for heavy duty database management then videotape could act as a useful backup medium.

VIDEO EDITING

But it's in the area of overlays that a genlock really comes into its own. Simple operations, such as adding titles to a videotape, are effortlessly achieved by setting the desktop background to black, booting up an Art or DTP package and placing the text anywhere you want. Hook up another video recorder to the PAL output on the GST Gold and you can try out pre-edit rolls of the video material to determine the exact timing of your titles. When you have it down to a tee, just hit Record on your second VTR and you have an edit.

Better still, use a package like *Cyber Studio, GFA Raytrace* or *Mastersound* to produce animated text and you soon have rolling credits to lay down to tape. If you're lucky enough to have access to three videorecorders and a videomixer you can really go into overdrive. Using two as source decks switchable through the mixer, you can push them through the ST where they may be treated to realtime digitising, with the results being recorded onto the third.

VIDEO SEQUENCING

A little more adventurous, though by no means more difficult, is digitising video material from either a live camera or recorded video source, maybe looping the results with a package like the A-Magic Turbo or SAM digitisers, and laying down sequences onto videotape already containing a music track.

Combine animated, off-air and live material with trendy full screen captions and you have your own promo. Better still, if you work with sequencers, load up *Steinberg* or *Master Tracks* and follow the time code readouts to get perfect accuracy for your video sequence durations. Just think of the video material your sequencer is superimposed over as an extra audio channel that can be cut and pasted in the same way.

PRO-VIDEO AND ST DTV

Since the GST Gold is the first piece of enabling ST video kit on the market besides digitizers, it's likely to be some time before we see accompanying peripherals that allow the ST to be used in professional applications. But it's essential in the first instance to have a good ➢

■ **GST Gold can combine with mono/colour digitisers. Using two VCRs, process the video signal via your ST as it transfers. Digitise in near realtime – using *Vidi-ST* or *A-Magic* – and you can create animated sequences with original videotape, titles, scanned images or whatever: here we "colorise" old Coltrane film and give Prince his own "Purple reign" (oh dear)**

New Products

TurboST 1.6

The Software Blitter

TurboST is already being used by thousands of people to speed up the performance of their STs by dramatically increasing the paging and scrolling speed of GEM screens.

Now comes version 1.6 of TurboST which also handles line drawing, giving an even faster display , in many cases out-performing the hardware blitter!

TurboST works by intercepting calls to the operating system on your ST and replacing them with highly-optimised assembly equivalents. It concentrates on the most frequently used and time-consuming routines to ensure the greatest possible speed improvements.

TurboST is a desk accessory so that it automatically installs in your computer, is instantly available and takes up only 35K (mono) or 43K (colour) of memory.

Now you can have the speed of a blitter on your Atari ST and, best of all, at a new, reduced price of only £34.95 inclusive!

Upgrades from previous versions to version 1.6 are available at £5 inclusive.

KnifeST

The Ultimate Disk Recovery System

KnifeST is all you need to recover files that you thought you had lost forever, to learn and understand how ST disks work or to simply enjoy a good hack! Some key features are:

- Works with floppy, RAM and hard disks
- Copies damaged disks sector by sector, ignoring bad data
- Extensive File Allocation Table (FAT) utilities
- Full statistics on directories, BIOS parameter blocks etc.
- Formats a wide range of ST & IBM PC disks
- Powerful 'Build File' commands for easy recovery of files
- Undelete program restores many deleted files, instantly
- GEM-based for ease-of-use and convenience
- Full printer support

KnifeST can edit many disks that can be physically read on the ST e.g. those of the Archimedes and Sinclair QL and can also read entire tracks, including sync bytes and track address fields.You can even run other programs from within KnifeST. Comes complete with a 64 page manual full of information and help on ST disks and costs £29.95 inclusive.

Both Shipping Now!

HiSoft

KnifeST and TurboST are just two of our growing range of software products for the Atari ST. Other titles include: DevpacST, HiSoft BASIC, Power BASIC, HiSoft C, FTL Modula-2, Spectre GCR, Tempus 2, CRAFT, WERCS and many more.

All software should be available from your local dealer. In case of difficulty, you can order directly from HiSoft by phone, using your Access or Visa card or by mail, using Access, Visa, a cheque or postal orders. Our prices include VAT and shipping within the UK.

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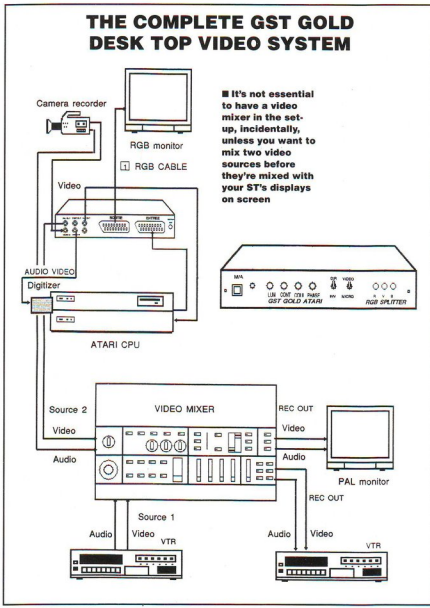

quality video deck: sadly the typical VHS machine just isn't up to the professional spec. Not only is picture quality deficient, but there's no accurate means of controlling the tape-servo heads so that you can be assured of recording a frame exactly where you want it to go.

A pro-video editing environment not only uses rock steady and reliable 3/4 inch U-Matic videotape machines but relies on Time Code Generators to ensure accuracy. An external sync pulse is pre-recorded onto the tape to be edited, such that any point on the picture or audio track is denoted by a 8 or 10 figure time code that can be quickly accessed and used as guide for edit start and end points.

Thus the duration of particular edits can be calculated, so that, for instance, you know just how much ambient sound needs to accompany the exterior shots you're cutting together. Edit controllers also rely on time code to perform mixes, wipes, fades, dissolves and other effects.

It's not too difficult to see how an ST could be used as a TCG – all we're talking about is a stable clock output with accompanying digits that can be recorded to an audio track as sync pulse and a videotrack as an extended digital clock.

Time Base Correctors are also essential in any pro or semi-pro environment, since these allow realtime sampling of video signals so that digital drop-out can be compensated for. Picture quality is maintained through continous processing thus negating "glitches" in video images. Here, though, we're talking custom hardware, as sampling rates are typically four frames a second.

It won't come as news that gear of this specification doesn't come out of a lucky bag. And that's before you've considered edit controllers and video effects units. U-Matic decks, for example, start at around £2,500 (13-amp plug extra); time code generators might easily knock you back £1,000; while a TBC is more in the region of £3,000. Edit controllers start out at around £750 and go all the way into editor salary figures *(that cheap, huh? – ed)*.

The answer, if you're serious, is to hire from facilities houses. Samuelson's on 01 208 0011 are the leading hire company. U-Matic recorders are £30 a day, for instance, an edit controller with built in mix effects £80 a day, a time base corrector £95. But meanwhile there's still an awful lot that can be done with two VHS decks, an ST and a genlock.

DREAM ST DTV

But perhaps full spec ST DTV is already here. At September's PC Show Signa showed off a ST-based desktop video system that drew the crowds like moths to a lamp. Running on a Mega ST4 the system, codenamed Chilli, features built-in genlock, realtime colour frame grabber and a 512x512 resolution custom video board. Its software can access 256 colours from a palette of 16 million.

Chilli is designed to be a pre-edit tool for conceiving pictorial ideas before sending productions to Quantel based systems like Paintbox and Harry that can easily cost some £200 per hour. No news on the price yet (but expect five figures), availability, or, indeed, its real name.

Meanwhile, what software could the ST Desk Top Video Editor expect next year? If developers get their acts into gear we might see integrated digital special effects software and hardware. Such a suite would include infra-red drivers for videodecks whereby all deck controls including freeze frame, single frame step, and visible high speed search can be controlled from your desktop.

Video editing features would include adjustable pre-roll for frame accurate insert and assembly edits, an edit preview mode and an automatic edit decision list generator. Digital effects would comprise graphic and title overlay, picture-in picture facilities, wipes, fades, dissolves, solarizing and pixelizing.

None of these is so very far fetched: they're all available for the Amiga. The only difference is that Commodore thoughtfully included external sync pulse in its CPU right from the start and as such developers have had more time to produce the goods.

If £500 for the GST Gold genlock seems a bit steep, hold out for an STE. It has a system clock that can be phase-locked for genlock and the mono detect on the monitor socket is capable of taking an external sync pulse. So the future for video on the ST looks good.

Only problem is – can you wait that long? ■

We've given you some idea of what can be done with a videorecorder, an ST and a GST Gold: now turn to our competition on page 81 and win the genlock for the price of a stamp!

FORMAT RATINGS

Features 85%
Plenty of I/O for various video, audio and digitiser feeds

Speed 90%
Instantaneous flips between video and ST display outputs

Ease of Use 95%
Once installed GST Gold is simplicity itself to operate

Results 95%
Produces absolutely solid ST overlays onto video display

Format Value 90%
Possibly the price is the only negative feature

The Competition
No competition – the first of its kind

TONIC AUDIO

TONIC AUDIO
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ACORN WORKSHOPS,
HAROLD WILSON IND. EST.,
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Now available - Version 4.2 of Arnor's acclaimed word processor

More and more people are now recognising Protext as the word processor that the ST has been waiting for. Developed over a period of 4 years, Protext has been designed to be fast, flexible and efficient. The emphasis is very much on word processing.

Unlike its competitors, Protext does not use Gem. The scrolling speed is four times faster than that of Gem based word processors. Yet Protext is still WYSIWYG and still allows access to desktop accessories.

Protext is faster all round; for example the search and replace command is six times faster than First Word +, and the spelling checker, too, is faster.

Protext has all the features you would expect from a good word processor - many text editing commands, print commands, spelling checker and mailmerge. What you might not expect though, is the refinement and thought that has been put in to make Protext ideal for the novice or the experienced user alike.

"To sum up, Protext is probably the most powerful word processor on the Atari ST and is quite likely to become the best selling too"... ST USER 4/88

..."At last one that seems to fit most of what I call essential in a word processor" PAGE 6 #34

..."Extremely good for manipulating and merging large text files". "Wins hands down as the all round package". ST USER 8/88

A brief summary of some of Protext's features ...

Background printing	edit/create further files while printer is busy
Box manipulation	move, copy, or delete any box as well as blocks
Configuration	set over 50 options to your own preferences using our menu driven configuration program
Dictionaries	add/delete words to/from supplied 70000 word English dictionary. Create your own dictionaries
Disc utilities	copy files, erase, rename, type, create directory, change directory, remove directory, catalogue files
Exec files	store sequences of commands in files for easy use
File conversion	flexible file conversion utility for other WP files
Find & replace	very powerful and fast with many options.
Foreign languages	10 built in keyboard languages. Easy to use accented letters: à æ ç ö ü è é ß â ù ô ê ñ etc.
Formatting	auto-reformat; reformat para, block or whole text.
Headers & footers	up to 9 lines of text, different even/odd headers and footers, auto page numbering, footnotes
Help	edit and command help available on-screen
Keyboard macros	string any sequence of letters together on a single key e.g. "Yours sincerely". Load and save macro key files. Special recording mode as you type.
Line spacing	variable in half lines, including 0, ½, 1, 1½, 2, 2½, 3
Printer support	works with any parallel or serial printer. Wide range of printer drivers supplied, incl. lasers and 24-pin printers; or create your own drivers or edit ours.
Printing styles	bold, condensed, double strike, elite, italics, enlarged, pica, NLQ, subscript, superscript, microspacing, proportional spacing, any other printer fonts
Program mode	suppresses formatting; auto-indent; set tab stops
Proportional text	will print proportionally spaced, right justified text
Quick dictionary	dictionary held in memory is very fast
Ruler lines	any number of ruler lines to define document layout, left/right margins and normal/decimal tab stops
Spelling checker	check whole text from disc or memory, or as you type. Suggests alternative spellings. Works with foreign languages
Symbol	Screen character symbols may be redefined
Time and date	set time and date, use within document
Tutorial files	help you to start using Protext
Two file editing	two documents in memory, copy text between them
Typewriter mode	direct printing for envelopes etc.
Undelete	retrieve text deleted in error
Word count	quick count at any time, whole text or just a block
Word puzzles	anagram and crossword solving features
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Protext is a professional word processor

If you want a fast efficient program for processing words, get PROTEXT

Latest News and Announcement

Version 4.2 is now available. Enhancements include:-

- * Revised and improved 300 page manual and index
- * Current date and time are available as single key strokes
- * New improved conversion program now includes conversion to (as well as from) First Word files.
- * Scroll Lock function pauses after displaying a screenful of text
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Upgrade prices: from v3.5x £30; from v3.6x £20; from v4.0x £15.

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Prodata (database)	£79.95	£79.95	£79.95

Until 30th November 1989, our new database, Prodata, is available at the special introductory price of £55.

As from the 1st December, the recommended price will then become £79.95.

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PHEW, WHAT A SCORCHER!

This month sees our biggest ever games section – will ya just look at all those pages! In the run up to Christmas we'll be keeping you right up to date with the very best of them – from frantic street-fighting games to thoughtful, intelligent adventures, from heavy tank sims to light and frothy comic book licences. Before you part with your hard-earned you need to check out the *ST Format* verdict

HOW RATINGS WORK

Graphics
The ST is capable of superb graphics and animation, so the last thing you want is crummy old 8-bit style graphics with tiny sprites and jerky movement. Graphics rating takes both still and moving graphics into account

Sound
Your ST holds the power to output some great audio effects – not just sampled music but some nifty tunes. One thing that doesn't go down well with our team of experts is the monotonous beep

Intelligence
Some games you can just pick up and play: if you've seen half a dozen vertically scrolling shoot-em-ups you know what to expect. Other games, however, take some thought and intelligence to play well. Look out for a high score here if you like your games brainy

Instant appeal
If there are 1,001 instructions to read before you can boot up the game, then it's hardly playable. You need to be able to shove the disk in and get on with it right away before it can truly be said to have instant appeal

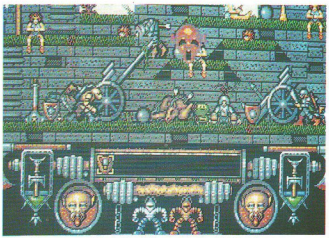
Long term interest
Here we measure the appeal a game has after several hours play. Combine this and the previous score to get an idea of how long a game needs working at to appreciate finer points.

Overall
Taking the above into consideration and comparing it with recent similar games, we award a percentage score. But remember, ST games are improving all the time: a title given the coveted Format Gold award a year ago may well no longer warrant such a score now

TOWER OF BABEL 34 / MOONWALKER 42 / DRAKKHEN 48 / SHINOBI 58

HEWSON

ONSLA



■ The banners on either side of the score panel indicate your progress. If too many enemies reach your banner it's curtains

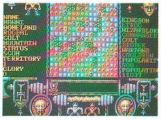
The adventures/action distinction has finally been eroded with *Onslaught*, an action-adventure. In charge of graphics was Nigel Brownjohn, of *Verminator* fame. So it looks great. But how does it play?

Armour seems to be trendy again, so if you're a hip dude, or into heavy metal, pop down to Burtons and pick up a suit – you'll need it if you want to win this game. *Onslaught* is set in Gargore, a country riddled with kingdoms competing to crush each other. As a magical warrior, you need to guide your troops across enemy territory and defeat any opposing kingdom you meet.

Game play is divided into four areas: field battle, sieges, defending actions and mind combat. You'll spend most of your time engaged in field combat. Fight your way forward through a horizontally-scrolling maze of levels, defeating all the little bad guys who come your way.

Onslaught is more than just another bout of alien bashing, however, because it's essential that you don't let too many enemies get by. If they do sneak past they'll reach your banner and take control of your army. You can redress the balance by moving left and killing any enemies you missed – but by doing this, you're wasting valuable time. While you're clearing up mistakes, more enemies are emerging from the right of the screen making things even tougher.

When you reach the enemy's banner, opponents stop emerging. Now go back and kill all the characters still left on the battle field. Achieve this and you're ready for the siege.



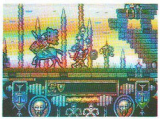
■ Select an area of the campaign map you wish to dominate and then it's into battle

Sieges are similar to field battles but if you win one of these you enter a mind duel. Lose a mind duel and you return back to the siege. Lose a siege and you must go through the field battle all over again (ain't life a bitch?).

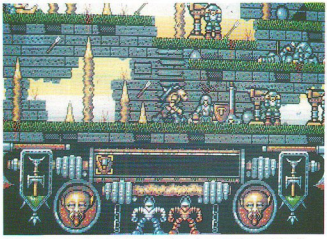
Tactical moves are essential when you're engaged in defending actions. This time you're competing on a map of your stronghold. If you lose your banner then you must enter a mind duel to reclaim it.

As you've probably gathered, winning a field battle is fine, but if you're going to get through this game it's the mind battles that really matter. These take place on a single screen and you fire mind blasts at the enemy's banner to defeat him. Win this section and you pass to the next tough campaign.

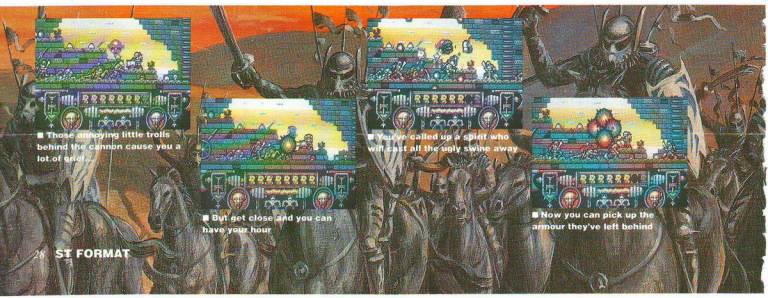
Throughout the game there are obstacles to overcome. The worst is rebellion among your troops. If you own large amounts of land this is quite likely to occur; as a result, control of your land is transferred



■ This isn't a game for the faint-hearted. This ugly Knight takes some bashing – and he's only one of your opponents



■ There's no time to look around – miss a few enemies and they'll capture your banner and take control of your army. Then you're in real trouble



■ Those annoying little trolls behind the cannon cause you a lot of grief

■ But get close and you can have your hour

■ You've called up a spirit who will blast all the ugly swine away

■ Now you can pick up the armour they've left behind

UGHT

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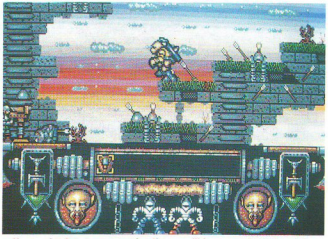
to the enemy. The same thing happens if your troops fall victim to plague.

To help you in the challenge, four types of items may be picked up. Weapons are the most useful and can be anything from a mace to a magic demon. The mace is standard equipment and allows you to give the enemy a good whack around the head – but because it's a body-contact weapon, you need to come dangerously close to your victim for it to have the desired effect

Most of the other weaponry can be tossed at the enemy from a distance, which makes it much easier to survive. Unfortunately, these don't last long. The more effective the weapon, in fact, the shorter the amount of time you can carry it. Talismans crop up in areas of terrain impossible to cross. Different types of talisman allow you to pass through different types of terrain – from forest to swamps to mountains. Special talismans can even be used to clear plagues and put down rebellions.

Since the game is all about amassing a gigantically high score, bags of gold found around the map can earn you an extra 500 points.

■ **The mischievous devils with the cannon can cause a lot of problems. You lose energy each time you're hit**



■ **If you miss too many enemies then you'll lose your banner and the game's over – it's best to go back quickly and sweep up a few of the elusive characters**

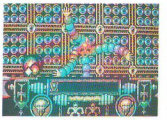
■ **Pick up the shield and you'll have extra weaponry which is essential if you're going to get through**

EFFECTS

Nigel Brownjohn has been responsible for the graphics and it shows. The first thing that strikes you when you start to play *Onslaught* is its amazing similarity to *Verminator*. This isn't surprising since Brownjohn has used his traditionally detailed designs in both of these games. *Onslaught* is a visual treat and because more than 16 colours appear on screen at once it looks even better than its predecessor.

The amount of animation going on is so intense that you need 12 eyes just to keep track of the enemies on your tail – let alone fire back at them.

Standard sound-chip music plays throughout the game accompanied by spot effects every time you attack. Since you can't walk more than three paces without needing to retaliate to some form of attack, these effects tend to override the music.



■ **You can get embroiled with some weird creatures if you try invading too much land**

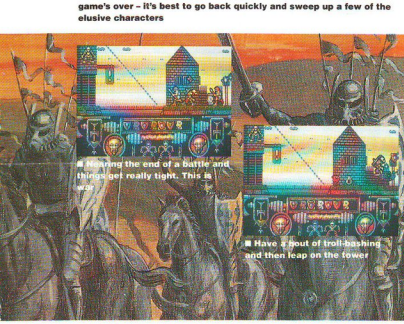
VERDICT

Read the scenario and you could easily be forgiven for thinking that *Onslaught* was some type of adventure game, and this is certainly to its credit. After all, how many slay-em-ups have a plot that's actually relevant to the gameplay?

If you're after constant, mindless alien bashing then you won't find it here. In *Onslaught* you need to employ some grey matter if you're going to win the day. At the same time it's a test of your skills with the joystick – and what a test! There's so much going on that it's impossible to do anything without running into an enemy and needing to do some quick thinking pretty damn fast.

The strategy element, the graphics, the variety of levels and the separate mind duels all make *Onslaught* original, exciting, and fun to play, even if it is horrendously difficult to grab much land.

MARK HIGHAM



■ **Nearing the end of a battle and things get really tight. This is fun**

■ **Have a bout of troll-bashing and then leap on the tower**

■ **Your wildest dreams come true – you're a giant fury a hero. Roll on the next level**

GRAPHICS	9
SOUNDTRACK	7
INTELLIGENCE	5
INSTANT APPEAL	7
LONG TERM INTEREST	8
OVERALL	**90%**

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3. Up to eight ST/AMIGA/PC computers may be connected together using a combination of MIDI and RS232 ports for the multiplayer option.
4. Complex animated objects.
5. Display mode options include
   i) Solid graphics.
   ii) Full hidden line vector graphics.
6. Players can own a space station, mothership and several other spaceships from cargo shuttles to battle cruisers.
7. All ships have different specifications e.g. max velocity, acceleration, bank/climb rates, weapons capability.
8. Many weapon/defensive systems based on an extrapolation of current technology.
9. Alternative scenario disks with completely new solar systems/spaceships/ etc. available soon.

MISSION SOFTWARE

Mission Software, Hill House, Middlefield Road, Pitney, Langport, Somerset TA10 9AH Tel: (0458) 253170

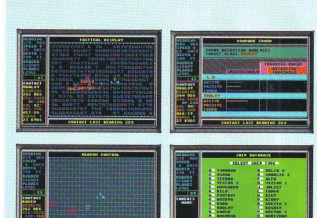
Glasnost? Forget it! A million NATO nightmares have come true. The Red Army's sweeping across the plains of central Europe, the skies are black with Migs and worst of all the Allies' Atlantic supply routes are threatened by the Soviet Navy. Without reinforcements, ammunition and fuel, NATO will crumble, leaving the Warsaw Pact triumphant. The Navy's hour has come, and its primary offensive weapon is the nuclear submarine, your nuclear submarine to be precise.

Can you save the beleaguered Western forces by wreaking havoc among Russian raiders? Have you the skill to send carrier fleets to the bottom of the ocean? Most importantly, could you survive a silent duel with a "wolf pack" bent on your destruction? It's time to leave Holy Loch and prove your nautical mettle in heated battle beneath the ice flows of the North Atlantic. This is *Red Storm Rising*, a sub simulator with a difference – it's exciting!

You are in sole control of the bridge, deciding what the sub does, who it shoots at and whether it survives. Using the classic Microprose keyboard overlay, the whole boat is in your hands; weapon selection, guidance, speed and depth, all variable at the touch of a button. The on-screen displays show your position, the water characteristics, detection probability and even sonar comparisons as you prepare to engage in battle. This is realism city and *RSR* has taken up residence!

Using the political and tactical assumptions of Tom Clancy's novel *Red Storm Rising*, the manual goes beyond giving instructions and becomes a reference document on current and future developments in submarine warfare, its tactics, themes and traumas.

There are four dates on which the war can be fought, 1984, '88, '92 and '96. These determine the type of vessel and armaments you and your Russian opponents possess, which in turn affect the strategies you'll use. Compounding this are four levels of difficulty from complete beginner to participation in the *RSR* campaign. When even the choice of ship is taken into consideration, you can see this is no simple game of submerge, point and shoot!



■ **These tactical screens, essential reading for sub commanders, depict sea conditions, sonar contacts, weapon status and threats. These highly detailed screens are the key to any victory**

MICROPROSE
RED STORM RISING

£24.95

The red storm really breaks when you eventually take to the high seas. However, all (yes all!) the information gathered from the 100 page booklet is needed for successful raiding. The beginner can have life easy, but never simple. The theory of submarine warfare is complex and subtle. It's a game of cat and mouse, relying on long range sensors to identify and then destroy foes. Only experience can tell you how and when to hide, the benefits and risks of good "active" sonar contacts, or how to surprise an enemy with long range wire guided torpedoes.

Nothing is overlooked: the effect of water temperature on sonar emissions, the presence of thermal layers and even underwater weather must be taken into account. It's important to know where you can hide a 7,000 ton submarine in the open sea, and to know your blind spots and evasive techniques.

Once in battle, you acquire skills quickly. You fire torpedoes, judging the best time to activate their own logical hunting systems, and try to get to surface to loose off a harpoon missile at an aircraft carrier. This being done while you throw quick turns at high speed, creating water "knuckles," to confuse any torpedo breathing down your rudder.

EFFECTS

Although it's far from silent, as you'll discover the first time an active sonar picks you out, it's not surprising that a game with a "run silent" feature has limited audio appeal. Visually the nature of the beast dictates that more maps and charts are used than traditional displays of controls. These are clear and flexible, allowing you to extract information as fast as possible – all maps have a zoom function for close examination of what's going down.

Most disappointing are the lame sinking sequences, which go on just too long. A detailed picture of the sub/ship in question just gets blammed, burns a little and gracefully sinks to the bottom... This is not what you learned to pilot a sub for!

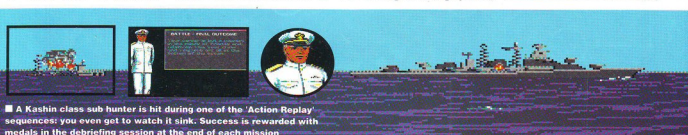
VERDICT

A few hundred words cannot do justice to such a detailed and complex game. Only its atmosphere, its tense and intense gaming experience, can be described. Players of other Microprose techno-epics such as *Gunship* will understand the joy you feel when the submarine becomes your tool, and you finally understand how to employ it to total effect.

There's a strange satisfaction in outwitting the computer sub commander and dealing him a state of the art death. The complexity of the game is daunting to the first-time player, yet it's also the source of its appeal as a realistic shoot-em-up that requires learning, skill and intuition. You want extensive gameplay fused with intensive action? Go hunt the bear, a big red Russian bear.

"ADMIRAL"TRENTON WEBB

GRAPHICS	**8**
SOUNDTRACK	**8**
INTELLIGENCE	**9**
INSTANT APPEAL	**2**
LONG TERM INTEREST	**9**
OVERALL	**89%**



■ **A Kashin class sub hunter is hit during one of the 'Action Replay' sequences: you even get to watch it sink. Success is rewarded with medals in the debriefing session at the end of each mission**

MICROPROSE

TOWER OF BABEL

ST FORMAT GOLD

£24.99

Suddenly from nowhere comes a game with such an arresting plot that our jaded games man is absolutely gobsmacked. Two years in the making, Microprose's latest strategy is aiming to repeat the success of epics like *Elite* and *Sentinel*

Who said the Old Testament was gospel? Microprose are trying to prove that it was all a load of hogwash with this major strategy game. According to them, the tower of Babel wasn't built for God, but for a bunch of mechanical aliens from the planet Zantor who took control of its construction.

The Shinarians were an Earth tribe wanting to contact God. And since the telephone hadn't been invented, the tower was the next best thing. When the Zantorians came along and saw the tower they tried to assist in the building so they could climb to the top and use their own telecommunications system to phone home.

The Shinarians were upset at having their tower invaded and built Zantorian-like robots who opposed the tower's construction. They made life hell for everyone.

Your role is to control three of the Zantorian robots, collect building blocks (Klondikes) and avoid the enemy. If the plot sounds convoluted – that's because it is. But in a strategy game complexity is to be expected.

The towers are solved by collecting all the Klondikes. Each tower is arranged as a set of coloured panels, sometimes on two levels. You have three spiders under your control to help you collect the Klondikes – a Zapper, a Pusher and a Grabber. They're called spiders because they're four-legged, crawling robots.

The Zapper zaps certain objects out of the way. His main role is to rid the tower of enemy robots – but be careful, he can blast your own spiders as well!

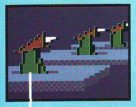
The Pusher shoves things out of the way. He removes blocks and other objects littering the tower.

The Grabber picks up Klondikes. He also links to objects in some towers that enable him to carry out special tasks such as freezing enemy robots or swapping positions with them.

You use a set of directional arrows at the bottom of the screen to move the spiders around the platform. Select the spider you want to move and click on the directional arrow to move him forward one coloured panel. The spider moves slowly – but you can set other spiders in motion at the same time. An option to program the spiders lets you enter a series of directions which are executed in

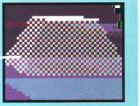
INTO THE VALLEY OF DEATH

The first thing is to take a look around. The view reveals the location of the Klondikes, a lift just below the bridge (below) and a reflective block (right). The problem here is that enemy Zappers are waiting (left) to wipe you away if you head for the bridge. The only way forward is down that long, unprotected path. If you look carefully you'll find the reflective block. This solves all your problems, if only you can work out how to use it properly...

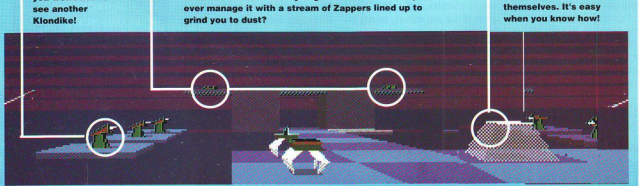


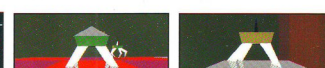
■ **An awesome sight, the horde of Zappers lined up all the way down the main run. Get your Grabber in front of any of these and you won't live to see another Klondike!**

■ **The Klondikes are located on a bridge – but how do you get your Grabber up there to retrieve them? At least it looks safe once you get that far – but will you ever manage it with a stream of Zappers lined up to grind you to dust?**

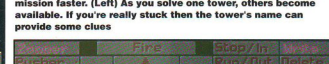


■ **The solution: push the reflective block down the main line; when the Zappers fire, it reflects their bullets. Result: you can just sit back smugly and watch the stupid little suckers destroy themselves. It's easy when you know how!**





■ **There's your Zapper wandering around in the distance. Is that a lift towards the right? Take control and move him onto it. (Below) Use the control panel to issue your commands. You can even despatch simple programming instructions to make your mission faster. (Left) As you solve one tower, others become available. If you're really stuck then the tower's name can provide some clues**



turn, sending spiders all over the place.

Once you learn to control the spiders (the easy bit), the next step is to confront the problem of collecting Klondikes. The idea is to use the Grabber to pick them up – but watch out for enemy Zappers installed around the tower, or your spider will be zapped to death!

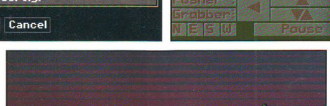
Opposing Pushers are scattered round the towers ready to frustrate you by pushing blocks into your path. In level one there are three Klondikes in a row, but by destroying the first one you open up a square that a Pusher blocks. With the obstacle in front of the other Klondikes it's impossible to solve the tower because all the Klondikes must be collected before the tower is complete.

There's a set of towers in each group. Completing one tower presents two linking towers to be completed. A group isn't complete until all the towers have been solved. Your score depends on the number of Klondikes you manage to collect.

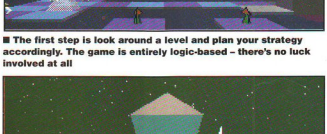
One problem with the game is that you can't tell if a tower is solvable. It's possible to move things around so you can't complete a tower, but you're only told it can't be done when all your spiders are zapped.

At any time in the game you can switch from playing through the eyes of a spider to viewing the scene from the cameras. These are located North, South, East and West and face toward the tower. You can move up and down to gain a different perspective and zoom in and out. This allows you to spot the locations of enemy Pushers or Zappers and plan your strategy.

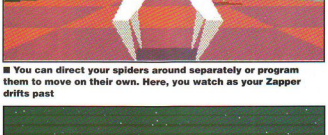
The game is totally logic controlled. There's no luck involved at all, so you're pitting your skills against the designer of the level. In fact you can be the designer yourself, because there's a level designer which lets you create a group of towers as complex or as easy as you wish.



■ **The first step is look around a level and plan your strategy accordingly. The game is entirely logic-based – there's no luck involved at all**



■ **You can direct your spiders around separately or program them to move on their own. Here, you watch as your Zapper drifts past**



■ **Level one: This is your Grabber staring at a long line of klondikes. Just fire to pick the lot up**

■ **Weird or what? Your Zapper takes a look around one very freaky level. Use the game designer and you can create any level you want**

EFFECTS

The 3D routines are brilliant. You're playing through a large window, but the action still moves quickly.

The Spiders chug along slowly – which can be annoying – until you gain the confidence to move around more than one at a time. The ability to move several spiders and still zoom in and out on the levels without losing speed makes it very playable.

Sound is limited to firing noises and spot effects accompanying the movement of spiders.

VERDICT

Good strategy games are notorious for being insanely difficult to get to grips with – and this is certainly not one of those games that can be picked up and played within five minutes of tearing off the shrinkwrap. Even when you understand the principles, there are so many problems specific to each tower that it never becomes easy.

If any criticism is levelled then it has to be that there's a lot to understand before you can play. The manual boasts a step-by-step guide so initiation is made as painless as possible.

It's the mixture of excellent graphics and strategy which makes *Tower of Babel* a success, and if you combine this with no luck-factor involved, only sheer determined logic, then you have yourself a challenging and addictive game.

MARK HIGHAM

GRAPHICS	9
SOUNDTRACK	2
INTELLIGENCE	9
INSTANT APPEAL	4
LONG TERM INTEREST	9
OVERALL	**94%**

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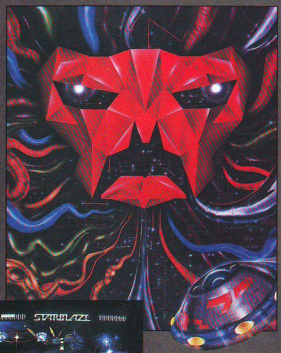
ATARI ST SCREEN SHOT

STAR-BLAZE...



StarBlaze is pure solid vector 3D Shoot 'em Up from the programmers that brought you 16 bit Elite! To qualify as a Tamsinian warrior in an intergalactic war of unparalled ferocity, you must prove your prowess by taking on scores of fiendish alien attack waves and live to tell the tale. How will you do it? With quick reactions and the fastest trigger finger on the planet !

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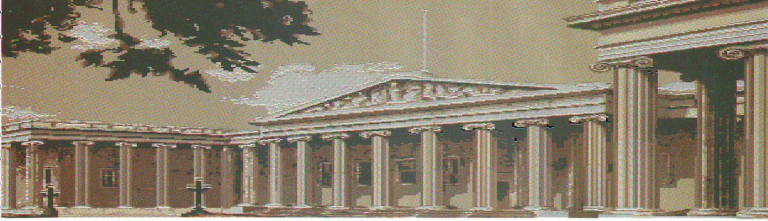

ELECTRONIC ARTS
THE HOUND OF SHADOW

£24.99

The Hound of Shadow has arrived – and he brings death and destruction to all who bear his mark. Will you fail prey to his fangs and claws, or defeat that hideous hound of hell?

Before play begins you must create your character. Space is short *(see last month's preview for more details)*: suffice to say that you choose sex, nationality and occupation, and decide which skills you will specialise in. Once your character is completed you go off to a little seance with a friend, who's the same sex as your character and will be around to help you through most of the game.

At the seance you meet several people, some of whom have a greater part to play in the adventure later. The Adept Karmi conducts the seance, and if you have a smidgen of occult knowledge you soon realise this Karmi character is a fraud.

Later in the seance, however, there's a weird occurrence that's enough to give anyone the shakes. The Karmi speaks with a woman's voice and glares at everyone at the table.

Finally his gaze falls upon a young gentleman next to you and the Karmi informs him that the Hound of Shadow is upon him and he bears his mark, sorry and all that, nothing personal but there it is.

After the excitement of the seance everyone goes their separate ways and the plot slowly begins to unravel. The early stages of the adventure are very restricted, and you are more or less guided through.

Gradually you start to discover bits of information you can act upon. As time passes events continue to unfold and if you waste too much time you could miss out on the plot altogether.

■ A seance is the start to your great adventure. (inset) Marcus Rowland's bookshop has some interesting items for sale – including books and magical paraphernalia which are useful if you're going to complete the story. (top) The British Museum is a valuable resource in your investigation (below) Choosing a profession during character creation is a serious business

There is one area in which *Hound of Shadow* falls down very badly: parsing. It seems to have a very limited vocabulary and only a vague grasp of the English language (about as little as your average staff writer).

The most irritating thing to encounter in any adventure is the message "You can't do that," and *Hound of Shadow* manages to utter that phrase with great regularity, thus spoiling the game and bringing you out of the fantasy world and into the world of man versus machine.

More time should have been spent on the passing of commands to make it friendlier to the adventurer.

FORMAT ST GOLD

EFFECTS

You can forget about sound in *Hound of Shadow* – there ain't none. Important locations are depicted graphically and are of a generally high quality. Text is, strictly speaking, nothing to do with the graphics of a game, but adventures rely on text to create the world around you. Descriptions here are both lengthy and atmospheric, creating the link between you and the computerised world.

VERDICT

Hound of Shadow is described by Electronic Arts as a role playing game, but I would tend to compare it more to an adventure. There are role-playing elements, but most of the game plays like a conventional graphical adventure. What does make it different, however, is the way your character develops as a result of outside influences, such as phobias. Other than its poor parser it's an excellent game that should give you plenty of sleepless nights: when you're not up playing it, it will be on your mind...

GARY BARRETT

GRAPHICS	7
SOUNDTRACK	0
INTELLIGENCE	7
INSTANT APPEAL	8
LONG TERM INTEREST	8
OVERALL	**90%**

■ You can be a novelist, in which case language is your best skill

■ As a socialite you'll be noted for your airs and graces

■ Freelance reporters are always on the lookout for stories (and cash)

■ Are you a believer or a non-believer? Be a psychic investigator and find out

■ Gentleman Adventurers are keen sportsmen, but lack brains

■ A British sleuth is like someone straight out of a Conan-Doyle story

■ Become a Mike Hammer character as an American PI

■ You need an "ology" to be a scholar, but that gets you the title of Dr

MICROPROSE

FIRST CONTACT

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That's the trouble with being a robot. Nobody ever listens to you. After all, when you're trapped inside a space station suffering from the ravages of green aliens, and nobody else wants to lend a hand, what do you do? Split into three parts and try doing it yourself – that's one way to solve staff shortages!

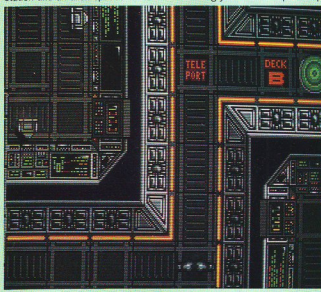
You're inside a four-deck space station and an alien spacecraft has decided to attach itself to deck A. These green beasts are running loose inside the space station and you have to repair the damage they're causing whilst avoiding getting zapped – an activity which sends your energy levels tumbling dangerously.

Equipment lockers are set into the walls of each control deck and hold various equipment. To use something you must first pick it up, but while the arm droid can hold four objects, the head only holds two and the legs hold none at all. Equipment is important because it's only by assembling the pieces of hardware that you can repair the station.

From a control panel, you select the droid to control. A power indicator keeps you informed of the strength of each droid. This is important because by colliding with walls or firing at the green aliens, the droid gradually runs low on power. This is restored by stopping off for a refill at a power-outlet.

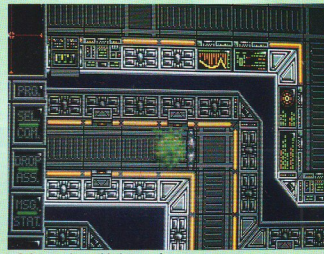
A panel menu is provided and here you have access to essential utilities. The most complex of these, but also the most useful, is the droid programming routine. Here, you select where the droid should go and what it should do – and actions can even include refuelling. This is achieved by writing a small program, either executed immediately or stored for later use.

To find out what needs repair, you direct the droid to the required wall unit and press fire. If repairs are needed, you'll be informed and given the chance to carry out what's required, providing you're holding the right equipment. Only the arm section can make repairs, however.



■ With four decks, it's just as well you travel by teleporter

■ You're in three sections – head, arms and legs. These are droids which can be controlled individually or combined together in extreme emergencies. Learn to operate them correctly and they can easily handle problems that require strength, dexterity or power



■ Doing your best with the greenies

EFFECTS

There are no massive sprites in *First Contact* but those that do make an appearance are carefully animated so that the movement of each is very smooth. In fact one of the game's great strengths is the way that the droids move – some parts swing, others shuffle. The backdrops and, in particular, the wall panels are very detailed but this is necessary if you want to know the operations of the panel without selecting to read information about it.

Your droid moves in four directions, but instead of the display scrolling with you, it flicks instead between one screen and another. For example, as you get to the top of the screen, a new backdrop suddenly appears and you're down the bottom. This can be frustrating, since your eye is forced to shift around the screen, but it's surprising how quickly you grow to enjoy it.

The sound is unspectacular, merely using the ST's sound chip for average spot effects.

VERDICT

As you hold down on the stick to move in any direction, the droid lurches forward, going faster and faster. It takes a while learning to stop it at the correct wall panel because pulling down switches its direction but not, for a while, its speed.

With green aliens and an unusual method of movement you expect *First Contact* to be all action – until messages start appearing to let you know what needs fixing. This makes for a strange concoction. Attempting to bridge two different genres , it ultimately appeals to neither strategists nor to action lovers.

There are some clever effects, but they still don't amount to a particularly good game. The movement is fun and the lack of traditional scrolling is a welcome change, but the idea of looking for parts quickly becomes tedious.

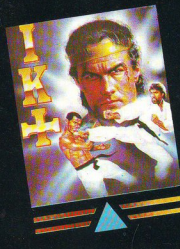
A promising action game has been wasted on mediocre strategy.

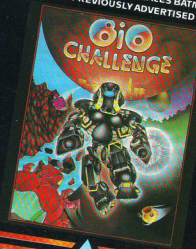
MARK HIGHAM

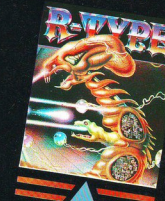
GRAPHICS	6
SOUNDTRACK	4
INTELLIGENCE	7
INSTANT APPEAL	8
LONG TERM INTEREST	3
OVERALL	**58%**

A POWERFUL PACK OF FOUR

BIO CHALLENGE REPLACES BATMAN AS PREVIOUSLY ADVERTISED







LIGHT FORCE

IK+

They called International Karate 'the greatest Karate beam 'em up yet' (Commodore User)

And who are we to argue?

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Re-mixed music by ROB HUBBARD. And balls!

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BIO CHALLENGE

For centuries mankind has been on the wane. The genes that each generation of humans passes onto the next are becoming weaker. The human body will soon become too frail to survive. Finally, scientists seem to have the answer. They have discovered a revolutionary technique to graft the human brain into the body of a robot.

The results of these experiments are to be tested in the BIO CHALLENGE – the ultimate ordeal.

You are a K.I.P.T – the latest generation of human robot engineering – an extremely sophisticated human brain in a highly manoeuvrable precision-engineered steel body. Your only mission is survival... for the human race.

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In 1977 Voyager II was launched – inviting all life forms in the Universe to visit our planet. Get ready – company's coming. Luke Snayles – returning to Earth after completing a 50 year sentence of 'investigative exploration' is not a man you'd wish to meet. After half a century of solitude, he's bored and hungry. On Earth the gate crashers are about to arrive – they are the ROXIZ. but Snayles has got other ideas – no-one, but NO-ONE is going to spoil his home-coming party!

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R-TYPE

Deep in the cosmos, the ultimate terror ... The Bydo Empire – evil, horrific, deadly. In the dark recesses of time and space, its terrifying creatures roam the cosmos, waging war on the Planet Earth. The desperate battle has just begun ... As pilot of the R-9 fighter plane, it is your mission to crush these interstellar monsters using every sophisticated weapon at your disposal. Only your skill and reactions stand between brilliant victory – and the devastation of Mankind.

... At last, the arcade sensation bursts on to your home screen with several stages, terrains and a compelling scroll feature,– the ultimate in thrilling gameplay.

R-Type: ©1987 IREM Corporation
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US GOLD

MOON

■ Level 1: the graphic of MJ is slowly replaced by a rabbit as you collect the pieces of the suit

■ You've collected all the pieces of the rabbit suit: now head for the motorbike and zoom into level 2

Ladies and gentlemen, we proudly present the very first review – the worldwide exclusive – of US Gold's biggest licence of '89. You've seen the poster, and four of you even saw the film. The programming team behind *Moonwalker* are Irish-based Emerald, whose previous projects include *Vigilante* and *The Deep* – which hardly bodes well. Have they come up with the goods this time?

Leather is back with a vengeance, as that permanent germ-free off the wall adolescent Michael Jackson roams four levels squashing bad guys and generally making a better and cleaner world for the children everywhere. The film was a *baaad* (as in terrible) excuse for stringing together one video track after another, so coming up with some kind of valid plot for a computer game was always going to be difficult.

The first level provides an overhead view of the pale one as he careers around the studios, avoiding being mobbed to death by his crazed fans. The second is in similar vein, except that by collecting lucky orbs you can become various vehicles (whacko, huh?) which enable you to access special areas of the map.

The third and fourth levels switch to a horizontally-scrolling scenario where His Royal Oddness can really let rip with sub-machine guns and lasers. Here, the purpose is to blast away the Stormtroopers with all the firepower you can muster.

Michael is controlled with the joystick: in the first two levels he walks until you hold down on the fire button, then he breaks into a run. Running comes in handy, especially when you need to dodge all those pesky fans, but being an ethereal kind of a chap you can't keep up the running for long. There are places scattered around the map where the fans never go and you can stop for a rest but these aren't highlighted – it's a matter of guesswork.

If you do get caught by your fans *(owl)* you part with one of your Platinum Disks. MJ would probably feel more like walloping the crazed youngsters, but one of the restrictions imposed on the game by The Man Himself was that he shouldn't be too macho.

In level one the idea is to find the various pieces of the rabbit suit (what is this guy on?). With each piece you collect, the graphic of MJ down one side of the playing area is gradually dressed in the suit.

To find the six sections you need to move across the entire map, but once you've worked out where they all are, they'll always be in the same place each time so it's not going to be a problem getting past this section again.

Level two sees MJ collecting green orbs which first change him into a car and then into a boat. Collecting the orbs is a strategic task, because the moment you change into the car you have only a short time in which to leap over the bridge. Mess this up and all the orbs are taken away from you and scattered back across the level – which means you have to return and start searching for them all over again.

The objective here is to find that elusive drug-dealer, who's rather unimaginatively called Mr Big. Although you never actually get to meet him, you're able to counter the worldwide threat of narcotics by running over the packets of drugs he leaves behind with your motorbike.

It's on this level that you encounter your first Stormtrooper: squash him with your bike, too, because if you don't get him he'll get you for sure. Since you're on a bike there's no need to worry about two speeds – the bike travels fast all the time, making it much easier to mow down Stormtroopers and escape those wretched fans.

The third level, where the action switches to a horizontally-scrolling Club 30s, is the most visually impressive scene – excluding the detailed introduction sequences. Here you can go in for some serious blasting, because the objective is to wipe out all the Stormtroopers hiding upstairs.

■ Level two, collect the green orbs. But don't forget to go for the packets of drugs

■ Run over them and that cracks the drugs problem. Now find the orbs

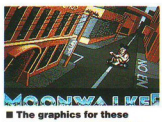
■ Orb ahoy! Pick it up and you'll get ever closer to becoming a car

■ That's it. Now you're a car you can go through to the next part

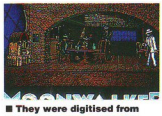
WALKER

£24.95

■ There is an animated intro sequence for each level



■ The graphics for these sequences are from the film



■ They were digitised from the video using an Atari ST

Your first duty is to pick up the gun and go searching for a magazine cartridge so that you have the ammo to fight back. These cartridges don't last for long, however, so it's important to find others quickly. When you've got the gun, moving around causes the gun sights to shift across the screen. Whenever the Stormtroopers appear on the balcony you must blast them before they can blast you.

Without giving away the plot behind the final level, I can say that it's another horizontally scrolling section, in which MJ, attacked by a giant laser gun, has to change into an automaton.

EFFECTS

Animated intro sequences between each level are superb. They've all been digitised directly from video, so they're accurate in every detail. Sound on the ST version is unfortunately limited to the sound chip, so there's no sampled effects taken from the video.

Four-way scrolling in the first two levels is very fast, although the overhead view of MJ and his fans becomes annoying after a while. For one thing, it makes it difficult to distinguish enemies from fans.

It's not until you get to the third level that the graphics really take off. Suddenly you're greeted by a large sprite of MJ and some brilliantly detailed graphics that are a huge improvement on the previous levels.

Speedy animation is maintained throughout all the levels so that each one is addictive, challenging and, most important of all, very playable.

VERDICT

With carparks full of driving games due out for Christmas, finding anything with a spark of originality is going to be difficult. *Moonwalker* has the distinction of being different from everything else on the market.

The overhead display is confusing at first, but once you get over this hurdle you have a great game. The first two levels would improve enormously if you could simply whip out a gun and blast all those fans to bits, especially since that's often exactly what you feel like doing. Instead, you have to try and dodge them, which is very annoying and occasionally impossible.

The first two levels of *Moonwalker* are decent enough, though the sprites – seen from overhead – are so small you sometimes wonder if this is a 16 bit game. In no way do they prepare you for the superb graphics in the third and fourth levels, which on their own would be worth the price of the game.

In any action game what matters most is how playable and addictive it is: will you be unable to tear yourself away form the screen even when it's way past midnight? In this respect *Moonwalker* certainly delivers the goods. Combine this with the massive variations between levels and you're always inspired to delve further and further into the game.

MARK HIGHAM

GRAPHICS	9
SOUNDTRACK	6
INTELLIGENCE	7
INSTANT APPEAL	7
LONG TERM INTEREST	8
OVERALL	**84%**

■ In the third level the action switches into horizontally-scrolling mode. This is where all the action really gets going. You must pick up the gun, find the first magazine and then aim at all the characters in the windows. Blast this lot to death and you'll get through to level four in no time

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The Companions must move swiftly through this wartorn land, cautious of strangers but seeking compatriots and ever alert to the rapid advance of the Draconian forces. The courageous elves will finally fall, but there is one last chance to free the loyal slaves held in Pax Tharkas and join together to recover the long-lost sword Wrymslayer in what could be the vital rallying point in rekindling resistance to the plague of darkness sweeping over Krynn.

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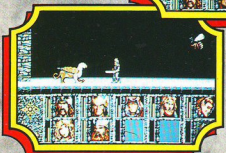

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Atari ST. IBM PC & Compatibles. CBM Amiga.

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Screen shots from various systems.

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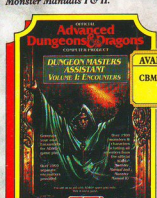

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COMING SOON
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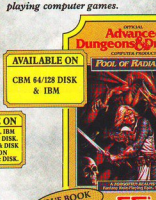

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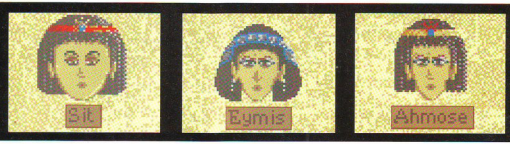
***Day of the Pharaoh* has superb graphics all the way through: here you get to choose a wife. Personally I'd go for Sit, if only because she's the only one whose name I'd be able to pronounce! (I wonder if Eymis would be shortened to "Ey!"?)**



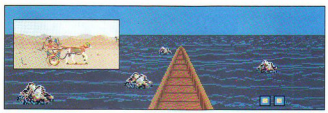
RAINBOW ARTS

DAY OF THE PHARAOH

£24.99

Upon the death of the Pharaoh, the evil god Seth commanded that all heirs of the Pharaoh be executed. Amon-Re, the sun god, saw the murders and saved one young heir – the part you play – from drowning in the Nile. Workers living on the banks of the Nile raised the rescued boy as one of their own. Now it is time to regain what is rightfully yours: to help you have a little money and a ship.

To build your finances you put on your trading hat and set sail for distant ports – controlling the rudder of your vessel as you move. But be careful! The waters of the Nile are treacherous and you must navigate through the rocks with care. If you crash three times you'll lose your ship and cargo. Don't worry, though, because more ships can be built, provided you have sufficient materials.



■ **Navigating the Nile is a rocky ride; and (inset) ride that technicolour chariot, hunt those foes – but watch out for spears!**

If you want war you can have it. The game then switches to horizontally scrollin`g landscape. Standing in a chariot, you shoot arrows at the enemy and do what you can to avoid their spears. Kill all your foes and victory is yours. Lose your three chariots and it's time to drink the embalming fluid and lie down in a big metal box.

There are also options to allow you to pray to the gods, build yourself a harem and construct buildings. If you're feeling lucky (punk) you can always wager your ship's cargo in a camel race. It's risky, but can be very profitable.

EFFECTS

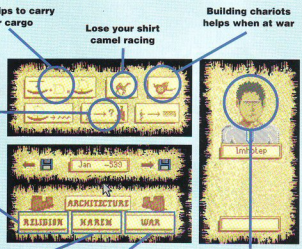
The graphics are superb and look like they're written on parchment. Animation of the ship and chariot is rudimentary, but sufficient. Sound effects are feeble and the tune on the menu screen sounds more like a mediaeval fanfare than anything from Ancient Egypt.

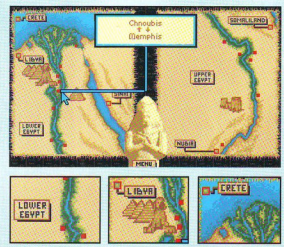
VERDICT

Day of the Pharaoh's roots are buried deep in the history of the computer games industry but it's more sophisticated than its Kingdom and Empire ancestors and it has some entertaining arcade style sequences. Becoming a Pharaoh is a long term task and although you'll find it interesting trying, it's repetitive as well.

GARY BARRETT

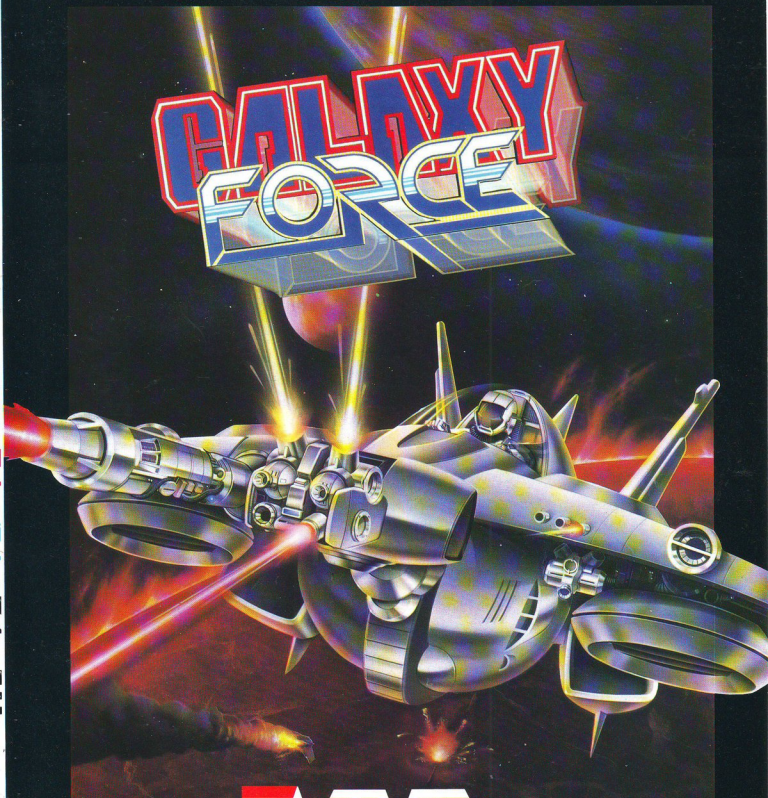
GRAPHICS	**7**
SOUNDTRACK	**3**
INTELLIGENCE	**7**
INSTANT APPEAL	**5**
LONG TERM INTEREST	**7**
OVERALL	**63%**



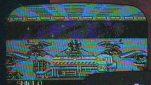


Egypt, 1,000BC - and closeups of the more interesting regions

GALAXY FORCE



ACTIVISION



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ATARI ST SCREENS

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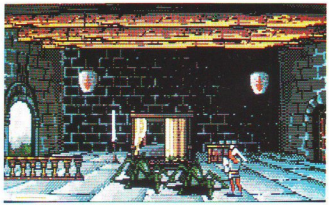
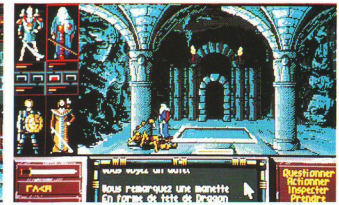


■ An enormous amount of effort has gone into *Drakkhen*'s graphics, and it shows. Wander through the dungeons casting spells and you'll soon see the game at its best



■ Click on the character or his relevant icon, and point the mouse to where you want him to go. Click, and he'll march off, leaving you to control the other team members

INFOGRAMES

DRAKKHEN

£24.95

Quest for the Time Bird was the last adventure from Infogrames, but with this latest release, it's back to fantasy land. Empire's _Sleeping Gods Lie_ hasn't exactly taken the world by storm, so why should _Drakkhen_, making the same 3D boasts, be any different?

If you have a fondness for green dragons you'd best steer well clear of this one, because the whole idea is to search out everything that breathes fire and kill 'em. You play the game in a strange world where dragons rule the roost.

Your goal is to find eight special stones which belong to the dragons. You must take these to the centre of the island where the plot is being played, and call up the Primordial Dragon in a scene somewhat reminiscent of a day out at Stonehenge for the druids.

To collect the special stones you need to wipe out the dragon holding them and claim the stone located in its forehead. If you thought dragons were sexless beasts, forget it: according to the French programmers, there are good and bad dragons, male and female. The Dragon Princess is the most powerful of them all, but you only meet her towards the end of the adventure.

The island is divided into four different zones. There are two dragons allocated to each of these – one male, one female, some good, some bad. Within each zone are two palaces and two princes, again with some good and others bad.

Confused yet? This might all sound very daunting, but it's important because each palace possesses its own mysteries and plots as well as an endless variety of monsters, tricks and traps all designed to keep the eight stones out of your grasp for as long as possible.

As if all this weren't enough, there's a time limit involved as well. The earth is being racked by earthquakes and volcanic activity which gets worse as the days go by. In a few months the earth is due to snuff it – and you go along for the ride.

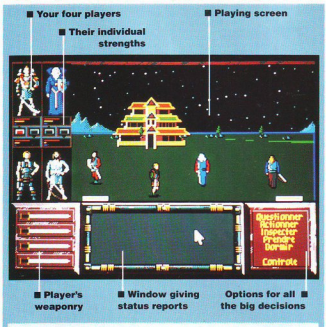
As with any decent RPG, the game begins by giving you the opportunity to select the characters you want to use.

After choosing whether to play a male or female character, you describe each team member as thief, warrior, priest, magician or necromancer. This option allows you to dictate the areas where your team members will be strongest, and by creating a good cross-section of strengths and skills you can increase the likelihood of surviving at least as far as the first dragon.

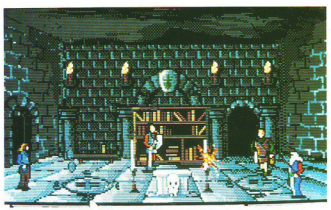
To allocate the attributes you're given a list of five random strength numbers (values between 1 and 20) and you must drag them over the five attributes that you need to specify. Force, dexterity, intelligence, resistance and instruction all need to be entered for every team member. After this, you must enter the weaponry that each of them will possess during the adventure, and the results are then saved to disk for playing future games.

With this done, you're through to the main playing screen which is where things really start happening. To move your team of four characters across the landscape you use a standard point-and-click method, choosing first the character to move and then the portion of the screen where they should go. There is a vast number of places which require your attention – from hotels and inns to darkened dungeons.

Travelling is frequently interrupted by giant dragons which leap



■ Much of the adventure is played from the control icons which let you cast spells, pick up items and use extra weaponry. Unless you master these, you'll get nowhere



■ **A large amount of your time is wasted exploring dungeons. It's virtually inevitable that your four characters will get lost at some time. That's when the fun starts**

up out of the ground or come at you from a distance. These are best destroyed by casting spells: but first you have to find a spell. Depending on the way you choose to attack the dragon and the weaponry you use, you can click on icons which respond by animating your attack.

For most purposes there seems little point in having four team members to direct, but you realise how important they are when you come across large buildings. Generally, it's best to move the team around together, but when you want to search the rooms of a house, you can split them up so that they wander off alone. Four team members also have their benefits when it comes to defeating the monsters. Either you can link up together and fire more ammunition or you can sacrifice a team member with an up close intense attack. Only when all members of your team are dead does the game close.

At any time, you can call up an inventory of the objects being held by team members. This is helpful since it gives an indication of the strengths of different characters.

Along the way other obstacles present themselves and the only way to get around these is either to use spells or to make the most of items that you collected on your journey. Because it's not always obvious which items to use when, a limited amount of help is provided in the game book. Here, certain poems and sentences will help you to master the Drakkhen island. There are also additional clues located in places such as camps and inns.

EFFECTS

As you wander around the landscapes, large fiery dragons leap out of the ground to attack you. Although these images look very impressive, compared to the background, they're often very out of place. Most of this has to do with the look of the game – grass is represented by solid slabs of green and there are no lines of gradation in the sky: consequently the detail of the monsters leaps out.

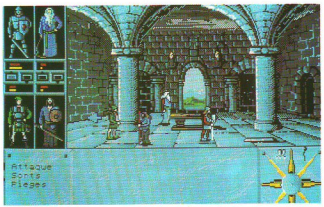
This doesn't follow for many of the interior scenes, particularly when you start to wander around the dungeons. These often have animated sequences which might not make much of a contribution to the gameplay but certainly liven up the action.

For an adventure game, a surprising amount of attention has been paid to animation. Whenever you move the characters, they are seen to walk rather than shuffle. They also have a different sprite depending on the weapon being held at the time, which is always a good sign.

In the version we reviewed there was no sound: Infogrames say spot effects using the ST sound chip will be added before final release.

VERDICT

Empire had problems marketing



■ **There are many places to see, but it's only when you get inside you realise how deep this game really is. Still, no matter where you end you can be sure of a visual treat**

Sleeping Gods Lie because it didn't fall into any readily identifiable category – it was neither a true adventure nor an action game. Infogrames are likely to suffer the same problems.

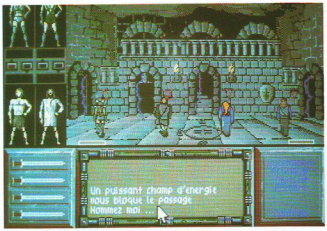
This doesn't mean *Drakkhen* is another *Sleeping Gods*, though. For a start the graphics are more impressive, and it doesn't have the same kind of 3D playing area.

In *Drakkhen* you don't feel free to wander at will. 3D in this game means you can walk in front and behind objects – not nearly as exciting as *Sleeping Gods*. Nevertheless, control over four characters at once certainly makes it more unusual to play. This is important in a game where the 3D environment has to be backed up by extra features and quality graphics.

The adventure itself sounds very contrived and the fantasy scenario has surely been clubbed to death by now. But once you start playing, it's surprising how addictive your search through rooms and camps becomes. But will the point-and-click environment appeal to enough people? *Drakkhen* is neither a great RPG nor a good action game. It derives its strengths and weaknesses from a mixture of both.

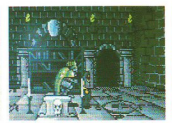
MARK HIGHAM

GRAPHICS	8
SOUNDTRACK	N/A
INTELLIGENCE	6
INSTANT APPEAL	6
LONG TERM INTEREST	7
OVERALL	**79%**



■ **You'll meet many enemies along the way and part of the adventure is finding the best way to get rid of them. Here, you do what you can with your sword**

■ **Ugly aliens pop up all over the place**



■ **Even the gargoyles aren't helpful**

■ **Run rings around the table to stay alive**

■ **Call up an inventory to see what you've got**

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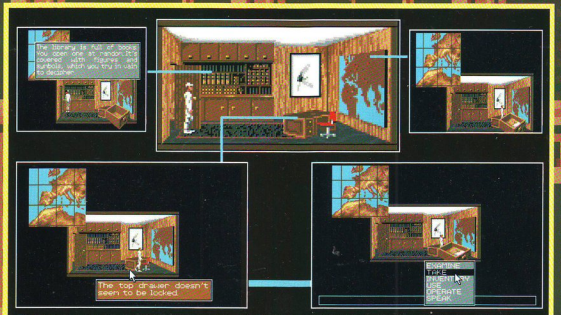
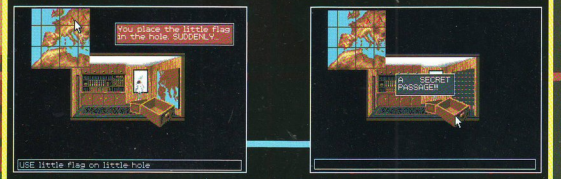


■ There's much more to this room than meets the eye. It's only by inspecting everything you can discover all the hidden extras you'll need if you're going to complete the adventure



■ In the first room you discovered a little flag. After noticing a tiny hole in the map, you put some of your grey matter to work and come up with the solution: stick the flag in the hole, and a secret room appears!

What does Richard Clayderman have in common with aliens from outer space? No, they're not cousins – as far as we're aware – but they are both related to the French record/computer software company Delphine, producers of *Future Wars*

Future Wars explores the paradox of Time. Aliens and humans are brought together in a search for bombs, which if successful, will save the world. The mixture of Time and aliens isn't exactly original – but in *Future Wars* it is relevant to the storyline.

Aliens want to colonise the Earth, but we've managed to develop our SDI project to such a degree that they can't get anywhere near us without being zapped to hell. (Aliens I can believe – but a working SDI? Come off it!)

In response they've come up with an alternative plan. They've travelled through time and planted fiendish bombs. The bombs are placed in Medieval, Prehistoric and Future ages and you must explore each of these territories if you're going to make the world a habitable place.

At the beginning you disguise yourself as a window-cleaner to gain access to a tower block – and hopefully discover the aliens' secret plans.

The environment uses the mouse: click left to move; click right and you bring up a set of commands that offer special effects – EXAMINE, TAKE, INVENTORY, USE, OPERATE and SPEAK.

EXAMINE provides a detailed explanation of the area of the map you select. To examine something, you need to move the hero as close to the object as possible. It's annoying when you're forced to move directly in front of it and can no longer even see what you're supposed to be examining! It's best to examine just about everything in each scene, because it's easy to miss something and missing a single useful object can impede further progress.

If an object is important, EXAMINE calls up an additional graphic that gives extra control. When you want to move the scaffolding supporting the window-cleaner, for example, you have to examine it first, which brings up a display of the operating buttons. You are offered two options – one arrow which moves the scaffolding up and the other which brings it down. This is not a lot of use because the only way into the building is up!

TAKE enables you to pick up objects, but again you need to be very close. Unlike other games, you can hold as many items as you wish – but as you use them to solve problems, they disappear forever.

The INVENTORY command displays a list of the items you're carrying, while USE calls up a list of the items held in your inventory. Select one and you're told whether that item is of use to you at that particular moment.

OPERATE lets you use items you're not holding. You could use OPERATE to switch on a tap, say, open the windows and even move the scaffolding which your window-cleaner is using.

Finally, there's SPEAK, essential if you're going to progress far. Click on it and you can converse with someone. This isn't very productive in itself, but by talking to others you may gain useful information to help you when problems become too tricky.

The game demands imagination from the player even to get from one room to another. The moment you get inside the first office, for example, you're confronted with the problem of how to get through to the next one. If you try opening the door, your boss comes out of another door and kicks you out of the building. The only way to survive is to find a plastic bucket, fill it with water and put it over the second door. Now when you try and get through to the next office, your boss comes out of the other door and is drenched – giving you the chance to get through without being stopped and wet yourself laughing.

EFFECTS

Visuals aren't usually important in an adventure game, but they're essential here. You need to inspect *everything* in each scene, and if you can't distinguish what it is then you're going to have problems. Fortunately the graphics are brilliant and there's no problem in this department.

Play takes place against a static screen with a limited amount of animation overlaid. This includes the hero walking when you click the left mouse button, and a few humorous special effects.

Sound is impressive – Delphine are shortly releasing a CD of all the tracks used in the game. (Richard Clayderman is on their books, but fortunately they didn't book him to do the soundtrack!)

VERDICT

Delphine have tried hard to make the adventure environment of *Future Wars* as detailed as possible. They've achieved this largely by copying the style of the Sierra On-Line games currently available through Activision. But this isn't a rip-off, since there's much more to *Future Wars* than pretty graphics.

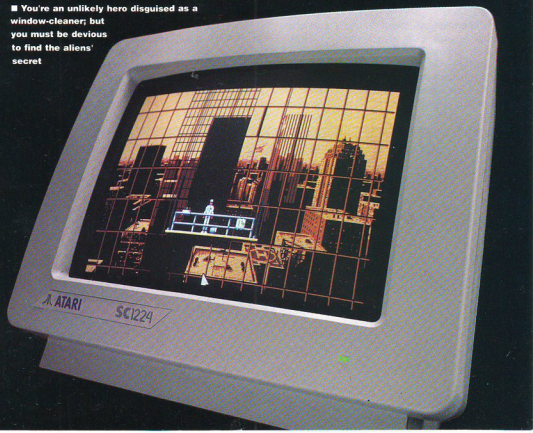
You're given freedom to explore every nook and cranny in a room, every bush and every tree – you can even peer down the toilet if you're into that sort of thing. This gives the game great "depth," as it were, and makes it immensely addictive once you're familiar with this kind of environment.

It can also make it immensely complicated. The problems are hard – and I mean very hard. Unless you scour every scene thoroughly they're downright impossible – and searching doesn't end with just a peek through all the cupboards: there can even be tiny items *under the carpet*. Even when you find all the objects you need, things don't suddenly become easy: knowing what to do with the objects you've accumulated is a massive problem in itself.

Future Wars has enormous appeal for avid adventure fans who are after a game that takes longer than ten seconds to solve. Combine this with its brilliant graphics, and the point/click environment and you have one hell of a game for the adventure pro.

MARK HIGHAM

GRAPHICS	**8**
SOUNDTRACK	**8**
INTELLIGENCE	**9**
INSTANT APPEAL	**4**
LONG TERM INTEREST	**8**
OVERALL	**87%**



■ **You're an unlikely hero disguised as a window-cleaner; but you must be devious to find the aliens' secret**

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The smell of rocket fuel, the void in your hair, oh the joys of being a spaceborne ranger.

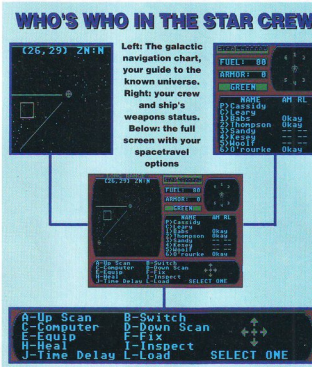
Star Command is set in the familiar territory of a space nation under threat. The aliens are bug-eyed and green, the ships jump through hyperspace and lasers rule the roost. You build a team from everyday people in the street, examining their abilities and choosing a profession for them – pilot, soldier, marine or esper. Then it's off to college for eight years to learn the subtle art of meeting interesting alien life forms and killing them. After the training, your skilled, though still green, warriors are sent on their first mission. But before the off, there are a few basic necessities that may come in handy. Such as a ship.

Now Star Command is safe in its rulers' hands because you have to buy all your own kit in order to kill someone else's enemies! The cutbacks mean the lump sum you're given to buy your toys is pitiful. There's all these state of the art mega-death devices down the arms-dealing supermarket, but all you can afford first time round is a set of second-hand space age peashooters.

The missions follow instructions to explore an area of the galaxy and look for/bring back/do something. So off you zip from Starport Luna and head into the wild black yonder. Occasionally inter-ship combat develops when the unidentified ships you meet aren't entirely convinced by your deity impersonations and demands for fuel. This is a slow business, as you creep around popping shots at each other.

Once you've arrived planet side, you fly the drop ship down to terra firma for the real action. This is where the game promises to deliver; "realistically" representing future wars. But gung ho it ain't, as the fighting totally lacks any pace whatsoever, again laboriously controlled by vague text displays.

WHO'S WHO IN THE STAR CREW



Left: The galactic navigation chart, your guide to the known universe. Right: your crew and ship's weapons status. Below: the full screen with your spacetravel options

These choices all lead to sub menus; loads of lists are the result

EFFECTS

The word for *Star Command:* ponderous. A standard role-playing game, all its options are text driven, with choices displayed on various menus and sub-lists. Switching between menus must be fast and smooth to stop the game being weighed down by continual disk access and pointless questions, but this is not the case with *Star Command.* The menus are plentiful, but the choices few. This would be forgivable if your actions were dramatically enacted. Yet the graphics are woefully inadequate: stick men, of all things, represent your team when planet side! There are some beautiful representations of space stations, but these are purely cosmetic and add nothing to the game itself.

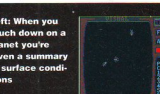
VERDICT

A vast role-playing adventure with varied tasks and challenges this may be. But it's too slow and too cumbersome to be worth the effort to find out. The crime of which some ST games are accused is exceptional graphics with insufficient gameplay. This is not the case for *Star Command,* as there are hardly any graphics and the gameplay is tedious and overly complex. The strategy elements remain underwhelming due to a lack of explanation in the manual, while the role-playing fragments the game, with everything having to be done eight times, not once.

Star Command is not a game the first time role player could enjoy without suffering long hours of frustration as squads are repeatedly wiped out. The experienced role-player on the other hand would find the limitations of the text driven "adventure" unbearable. If this is "living" science fiction I'll take the present anyday.

TRENTON WEBB

Left: Once you've built your squad it's time to buy the essential equipment you'll need for your travels, like a ship, guns etc!



Left: When you touch down on a planet you're given a summary of surface conditions

Right: Star ship combat

Left: Customising your ship is necessary but tough on the shoestring budget you get from the *Star Command*

Left: Combat, top right is your combat display, top left your enemies. Below, your options, while in the centre is your team's status

GRAPHICS	3
SOUNDTRACK	3
INTELLIGENCE	8
INSTANT APPEAL	1
LONG TERM INTEREST	6
OVERALL	**37%**

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LANCASTER

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There are flight sims, the *F15s* and *Falcons* of this world, that are immensely complicated, with an initial interest rating somewhere down in single figures and a long term one up in the 90s. Try loading one of these and see how far you get without the manual, chum. Great if you have a trainspotter mentality, but not exactly thrill a minute.

There is the frenetic arcade action of *Thunderblade* and *Afterburner*, all excitement and trigger finger ache. The most fun you can have with your clothes on, sure, but hardly Mensa material. You could train a monkey to play these, if it had the patience.

And in the middle there is *Lancaster:* thrills, spills and not a cardboard keyboard template in sight. In this WWII flying ace setting you're the gunner, bearing a heavy responsibility: keep those nasty Bosch off your pilot's back while he reaches his objective. Then it's a quick change of uniform and down into the loading bay to act as target spotter for the bombing raid ('scuse lack of authentic flying lingo, by the way).

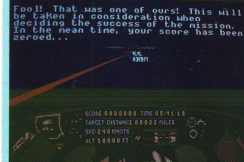
Begin by choosing your options, setting the conditions – and therefore the level of difficulty – as tough as you feel you can take. Complete novice? Opt for instructions, automatic targetting, practice mode, safety belt and regular stops for cocoa and a lie down. Then, as you become mission-hardened you can opt for less hand-holding and more in the way of stomach-churning, wrist-aching, mindblowing, breathtaking, action.

Now choose your pilot from the three available – pilots Pennington, Thompson and Jennings. The missions you fly depend on their age and experience, so you'd be well advised to begin with Thompson and work your way up through the ranks.

Time to take to the air, as a rather neat animated sequence shows you and those other magnificent men climbing into your flying machine. (Like the equivalent sequence in, say, *Tintin on the Moon*, you can terminate this pretty but pointless sequence the second and subsequent time you fly. It's good – but not that good.)

And at last you take to the skies, in a 3D filled vector graphic *Lancaster* of which the programmers are justifiably proud, an impressive collection of panels trundling in (almost perfect) unison down the runway and into the wide, dangerous blue yonder.

A short mouse-driven map sequence later and you're under attack. This is what you went through all that rigorous training for (well, what you shelled out 20 nicker for, any road). You're facing out the back of the plane, with bandits at one o'clock, two o'clock, three o'clock... The plane shivers and you swing wildly to and fro trying desperately to down those enemy fighters before they bring your promising career as a war ace to an abrupt and premature conclusion.



■ **Eat lead, pigdog! Unfortunately, however, you've managed to hit one of our boys. Don't bank on getting a medal for this outing!**

EFFECTS

The sampled engine sound is just a tad too obviously cyclical, and graphically *Lancaster* is rather stronger on set pieces – the climb aboard animation sequence, the well done taking-off, the homecoming to girlfriend, wife or mother (depending on choice of pilot) – than on in-flight realism.

In particular the ground into which your plane plummets should you screw up looks rather more like a page of green exercise book than some corner of a foreign field. And the final "bombing" sequence would hardly be impressive, graphically, on an eight-bit machine.

Yet overall there's more than enough to convince you, in a darkened room and with the sound up, that you really are living dangerously four decades ago over Germany.

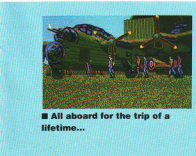
Three complaints: the packaging is dull, the music is atrocious and the disk swapping is a downright disgrace.

VERDICT

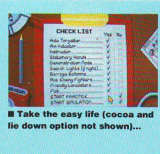
Exciting? I should say so! This may not be Microprose, but it sure as hell is fun. No doubt the purists will complain that it ain't realistic, and they're probably right. Me, I wouldn't know and I don't give a toss. I'm up there, downing those Jerries and rat-a-tatting with the best of them.

For mental exercise, realism and authenticity climb aboard Spectrum Holobyte's *Falcon*. For arcade sensation, sweaty palms and dangerous blood pressure go shake, rattle and roll it with Activision's *Afterburner*. For strategy and a sense of being there combined with all the fun of the arcades, head for *Lancaster*.

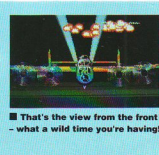
STEVE "TINLEGS" CAREY



■ **All aboard for the trip of a lifetime...**



■ **Take the easy life (cocoa and lie down option not shown)...**



■ **That's the view from the front – what a wild time you're having!**

GRAPHICS	8
SOUNDTRACK	7
INTELLIGENCE	8
INSTANT APPEAL	7
LONG TERM INTEREST	7
OVERALL	**81%**

■ Masashi ducks to avoid the boomerangs of death.

■ Enter the end-of-level Samurai Boss.

■ Duffing up the sword-wielding scuba-Ninja.

■ Masashi gets clobbered by a Ninjutsu 'Paused' sign.

VIRGIN GAMES

SHINOBI

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Sega's scrolling beat 'n' shoot 'em up appeared in the arcades 18 months ago, boasting little more than large sprites, parallax scrolling and fairly average Rolling Thunder-style gameplay. Still, this didn't stop it from becoming a real favourite with arcade goers everywhere.

Master of the Ninjutsu, Masashi, is called upon to rescue kidnapped children from the inevitable group of despicable warlords and their violent entourage. The action takes place against a series or urban backdrops. The Ninja starts his mission armed with an unlimited supply of Shuriken stars with which to despatch long-distance assailants. When in close quarters, combat automatically switches to hand-to-hand, where Masashi unleashes punches kicks or lashes out with any hand weapons collected along the way.

The kiddy hostages are liberated simply by walking into them, at which point either a bonus score, extra weapon or Ninja magic is revealed. This magic – a sort of oriental smart-bomb – can be activated with a flick of the space bar, whereupon dozens of Masashi sprites whizz around the screen, clearing the scene of enemies.

Each level consists of several stages, all of which must be cleared of kiddies within a time limit before Masashi is allowed access to the next. The last stage of each level provides a showdown with one of the five overlord bosses, taking the shape of a huge armoured Samurai, massive helicopter gunship, animated statues, another Samurai (even tougher than the first one) and an assortment of Masked Ninjas. These end-of-level guardians must be conquered before continuing with the mission, and considering the relative ease with which the earlier stages are mastered, can prove frustratingly tricky to beat.

An intervening bonus round sees the display switch to a first-person perspective, where Masashi's Shuriken-throwing talents are required to defeat an advancing horde of enemy Ninja. Total success is rewarded with an extra life to add to Masashi's initial store of three.

EFFECTS

Gone are the smooth parallax scrolling and fast-moving detailed sprites of the original coin-op. The scenics are recognisable from Sega's version, but jerk rather than scroll. Masashi's enemies hobble along in a most peculiar fashion and are far less threatening – visually and physically – than their arcade originals: they're large, but drab and poorly animated.

A reasonable rendition of the coin-op soundtrack burbles along in the background, but sound effects are weak and all the better for their scarcity.

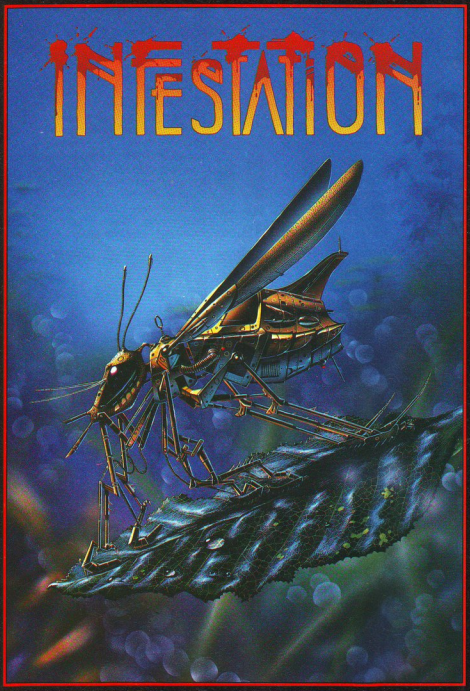
VERDICT

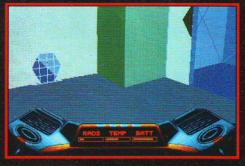
Timid action, shallow gameplay, annoying disk access and average audio-visuals do not make *Shinobi* an immediately endearing proposition. The game's visual and technical deficiencies would have been forgivable a year ago, but ST owners now expect a bit more polish for their notes. If you're willing to put up with its drawbacks, Shinobi does provide a challenge of sorts, and is (amazingly enough) moderately addictive. If you're no great fan of the coin-op and don't have money to burn, though, forget it.

STEVE JARRATT

■ Mid-way through the first stage, Masashi jumps over a packing case to rescue his first captive kiddy, tied up on the right.

GRAPHICS	4
SOUNDTRACK	5
INTELLIGENCE	3
INSTANT APPEAL	3
LONG TERM INTEREST	5
OVERALL	**47%**





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Screen Shots from the Atari ST version AMIGA/ATARI ST £24.95

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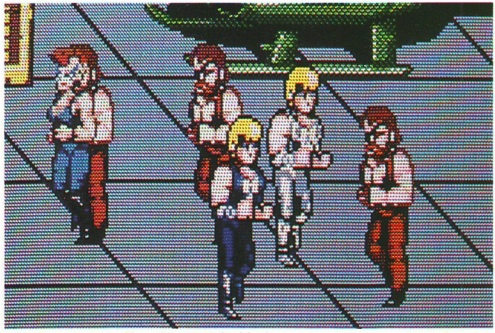


■ If you're looking for trouble, you've come to the right place

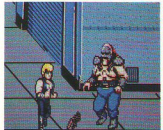
Double Dragon the first had two things in its favour as a good old fashioned kick-em-up: two player action and a variety of weapons. Simultaneous two player games aren't that uncommon, but *Double Dragon* had something that most didn't – *you could beat up the other player!*

But surely, you might say, you have enough problems fighting your enemies, never mind your friends? Maybe so, but it did make the game more fun and if you got annoyed you could take it out on your computerised ally rather than belting your friend around the head with your ST.

Being able to pick up weapons was an added bonus – it allowed you to give the bad guys a taste of their own medicine.

You'll be glad to know that both of these features have been carried over into the sequel – *Double Dragon II*.

The action begins immediately with you pitted against the first of many foes on your quest to fulfil five missions of progressive difficulty.



■ This heavily armoured sumo wrestler takes some beating before he finally falls apart

Your foes come in many shapes and sizes – with some very hefty adversaries towards the end of the levels. The three most common thugs that you'll meet are Patch, the acrobat and the girl.

Patch is the toughest of the tough and is pretty useful (if not very pretty) with his feet. The acrobat somersaults around the screen and is of medium strength. And of course you have to watch out for the girl.

Your first real opponent is the big thug in the middle of mission one – he must be about nine feet tall! When he puts his size 12 boot in your ribs you certainly know it. Later on you meet a sumo wrestler in armour who has personality problems and a nasty tendency of picking you up and pummelling you without mercy. One guy that really takes some beating is the man in green on the fourth level – he knows what he's doing and will have you eating dust faster than you can say "Oh, you seem to have beaten me to a pulp."

■ Watch out for the girl: she's mad, bad and very dangerous to know

And that's all – you beat your way through a horde of tough guys with only your wits and reactions to save you from a hideous death.

EFFECTS

Each level is made up of many detailed and colourful backgrounds which scroll as you progress through the game. The sprites are huge and as beautifully drawn as the backgrounds. Animation leaves a little to be desired – but the general appearance and presentation is very good. Sound effects are done well – especially the groans and yells when someone dies. The thud of flesh against flesh sounds solid too. Music is tolerable, but nothing to dance about.

■ When you meet an enemy like this charming fellow you could find your face buried in the dirt

VERDICT

Double Dragon II is a great game to while away an hour or so, but it suffers from the same deficiency as its predecessor – it's too easy to complete. The problem lies in credits – you have five credits to complete the game with, which is effectively 15 lives.

Credits work fine in the arcades – people have to put in more cash to complete the game and so the arcade makes more money. Computer games are bought though, and they can be played forever without paying another penny. If it costs you nothing to play then you can continue for hours and become an expert. Completing a game on the day that you buy it means you've wasted a lot of money.

That said, *Double Dragon II* is great fun as a two player game, because it calls for co-operation and sharing of weapons to get anywhere. The problem lies in the one player game, in which you have only hordes of bad guys to smash into the ground and more lives up your sleeve than the proverbial cat.

GARY BARRETT

GRAPHICS	8
SOUNDTRACK	6
INTELLIGENCE	4
INSTANT APPEAL	9
LONG TERM INTEREST	5
OVERALL	**75%**

Goodness gracious great balls of fire

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Screen shots from Amiga version.

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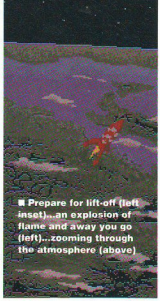
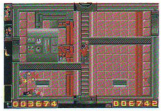


■ Prepare for lift-off (left inset)...an explosion of flame and away you go (left)...zooming through the atmosphere (above)

In his first adventure Snowy boldly goes where no dog has gone before – to the moon. Tintin tags along for a laugh and brings Captain Haddock, Professor Calculus and engineer Wolff too.

Before the game begins there's an impressive cartoon-like launch sequence in which you see Tintin and crew approach the rocket in a car. Then there's the final countdown followed by BLAST OFF.



■ Tintin sees stars

Your journey to the moon is split into stages. First you guide your rocket through a meteorite storm. Avoid the rocks and collect the red and yellow globes. Eight red globes must be collected to take you to the next stage; the yellow ones build up your energy. Run out of energy and you drift around in space for eternity.

In the next stage Colonel Boris has somehow managed to stow-away on the ship and is determined to destroy it. This is a bit silly, because he'll die too, but that's loonies for you, I suppose! To reach the next stage you must satisfy four conditions: capture Colonel Boris, put out all the fires, free your companions and disarm the bombs.

Disarming bombs and freeing your companions is simple to do – you just have to touch the bomb or person. Fires are put out by giving them a quick squirt with an extinguisher – assuming that you've found the extinguisher of course. If it's out of puff then you'll have to find another one. Capturing Colonel Boris is a matter of spraying him with the extinguisher or jumping him from behind.

When you reach the moon you control the rocket for a lunar landing. Watch the surface draw closer as you prepare to touch down. After a brief rest it's time to take off and head back to planet earth again.

BEHIND THE SCENES

The *Tintin* licence was acquired from Castleman (the publishers of the book) just over a year ago. Castleman insisted on seeing the game at various points and made changes to it so that it would resemble the comic book as much as possible.

One part which came under their scrutiny was the space scene at the start. Infogrames wanted to insert a second rocket so that the game would be more playable but Castleman wouldn't have it. Infogrammes hit the same problem when they tried putting a second character in the rocket with Boris.

This version of *Tintin* is the second one to have been programmed. Preliminary versions of the first were shown to select members of the French press who said that if Infogrames released the game, they would trash it. As a result, Infogrames went back to the drawing board and looked at writing a new version. This is what you see in front of you.

■ (above) The route to the moon is hazardous, with meteorites in abundance

■ All in a day's work: Tintin puts out the fires, unties his friends and captures Boris

EFFECTS

Infogrames have a good reputation for graphics and *Tintin* is no exception. The opening sequence is excellent and proves that you can indeed get cartoon style graphics out of your ST. The in-game graphics are still very good and Tintin and co are beautifully animated.

■ Rescuing Captain Haddock

Soundwise there's a few good effects, but these are in the opening sequence as well. In-game effects are alright, but nothing spectacular.

VERDICT

Tintin is a combination of dodge-the-asteroids and a platform game – and they combine surprisingly well.

It's frustrating when you run out of energy if there's a red blob in sight, but that's just a fact of death. The platform game is hard work; the closer you get to the moon the meaner it gets. But the two types of game become repetitive, with difficulty being the only variable. Nice opener, shame about the game. Lets hope they do better with any subsequent Tintin games.

GARY BARRETT

GRAPHICS	8
SOUNDTRACK	6
INTELLIGENCE	5
INSTANT APPEAL	7
LONG TERM INTEREST	6
OVERALL	**73%**

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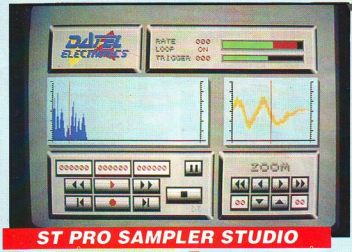

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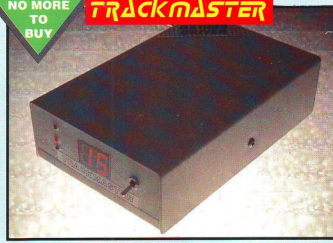

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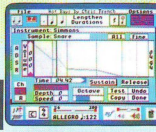

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You're really up against it this time. Those revolting robots have finally upped and turned their horribly powerful weapons on their kind human masters.
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Fortunately, you are just a little bit on the special side. You are Stryx, the product of Project Alpha Secure, the meanest fighting, smartest thinking machine ever invented. Half-man, half-robot, you are the business, the only one who can stop those wicked Cyborgs.

You'll have to work hard, though, blasting hordes of the revolting creatures (such a sad waste of scrap metal) and rescuing the keys to the Lifeforce.

So, Stryx, you'd better get your jet pack on for some high level robot stomping through the immensely complex underground world of the Dome cities. It's a tough assignment, and time is running out.

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Screen Shots from the Atari ST Version

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GAMES PEOPLE PLAY

TITUS
KNIGHT FORCE
£24.99

Strange, don't you think, how the mysteries of time travel continue to fascinate game designers? The theme crops up yet again in this release from the French-based Titus – previously renowned for *Crazy Cars II*, which was more concerned with travel against time than in it.

You play a knight wandering through different time phases in search of a beautiful princess (you never see her, so for all you know she could have the grace and beauty of Paul Daniels). Along the way you use your trusty sword to wipe out the bad guys.

You can visit five different time phases: Pre-History; a distant time in Versailles (well, it is a French game); present-day New York; the future; and a mystical age.

The enemies you encounter are specific to each time period and to overcome them you must employ certain fighting techniques, learnt through trial and error.

The knight is controlled using joystick combinations. You can make him run, jump, crouch or stamp without holding down the fire button. Pressing the fire button makes him attack.

Depending on how you move the joystick, he uses the sword to thrust forward, swipe or protect himself with the shield. These combinations are logical and it takes little time to learn the techniques.

The game would be just another slay-em-up if it weren't for a handful of useful amulets. On each level there are one or more of these – but only one of them will be related to the period you're exploring. It's important to pick them all up because they can be used when you shift time.

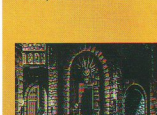
An amulet appears whenever you destroy the enemy holding it, and they're important because you can't progress through time without them.

The aim on each level is to defeat the merry sorcerer who lives in the castle. One of the biggest problems is how to find your way inside – essential if you want to hack the sorceror into lots of little pieces.

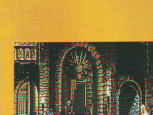
Once the game begins the only way to move between levels is to find the magic bird and thrust your sword through its heart. Then the time travelling option appears, giving you the chance to deny all rational laws of chronology.

■ **Who's forever blowing bubbles? Nothing in this game is going to befriend you – if it moves, hack it!**

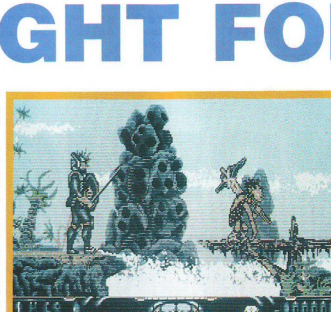
■ **Going for gold – rid the level of the magic bird and select another time period to visit**



■ **Ye Knight has a range of movements to fight off attackers**



■ **When you've overcome the sorceror, collect your prize. The merry maiden is yours.**



■ **The icons give you some idea of the success of the Knight's mission. The two important ones to watch are the power levels which let you know if you're going to survive an attack. You get different enemies for different time zones so some are easier to master than others**

EFFECTS

It's the graphics which make *Knight Force* special. The size of the animated sprites is amazing, although they're not as bright and colourful as they might be.

There aren't many frames of animation in between each movement to keep the action smooth, which is unfortunate because with a little more care we might have seen a graphically superb game.

Sound consists solely of monotonous spot effects each time you use your sword. These are nothing to scream about, though Titus have indicated that they'll be making slight alterations to the effects before release.

VERDICT

There's a lot which stands *Knight Force* in good stead. The graphics are impressive and well-defined – the sheer size of the main character is appealing. Add to this the amulets, the magic bird and an intriguing time element and you have something fun to play – at least for a while.

Since you can select the initial time period, instead of progressing successively through each level, *Knight Force* is very exciting to play for the first time. It becomes tedious once the delight in graphics wears off.

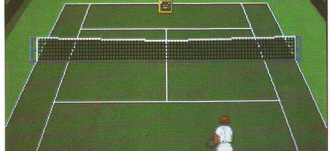
The knight can be frustrating if he doesn't respond to the joystick the instant you touch it, especially if you're trying to make split-second accurate assaults on enemies.

If *Knight Force* had come out two months earlier, the size of the sprites and the gameplay would have made it original; but following so closely on the heels of *Altered Beast* has dampened its impact.

Only for the dedicated slay-em-up fan.

MARK HIGHAM

GRAPHICS	8
SOUNDTRACK	6
INTELLIGENCE	6
INSTANT APPEAL	7
LONG TERM INTEREST	5
OVERALL	**70%**



■ Ready to rally...and (below left) life on the centre court

UBI SOFT
PRO TENNIS TOUR

£19.95

Remember the early days of electronic entertainment when you thrilled to the plink-plonk, the black 'n' white display, the difficult-to-control paddles of the original tennis games? Now you can re-live those glorious days with UBI Soft's latest ST release *Pro Tennis Tour* – the all new, fast colour version of one of the oldest computer games.

You're presented with a menu screen offering tournament and various practice modes, as well as a chance to examine the current seedings (including your own). Since you're seeded down in the low 60s there's plenty of room for progress!

Selecting practice mode takes you to another screen where you can elect to play against a ball-serving machine, try out your own service or just play a friendly. This is especially useful for novices attempting to learn the rudiments of service, ball return and control. Another tap at the keyboard and you're into tournament mode, pitted against some of the best players in the world and rallying for your life in an attempt to claw your way to the top.

EFFECTS

Pro Tennis Tour features excellent 3-D fast colour graphics, smooth animation, sexy sounds and digitised speech – transgress the white lines and you're regaled with a bellowed "Out!"

Unfortunately for McEnroe fans there's no opportunity, to indulge in tantrums and contest umpire's decisions.

Players move with agility and grace and the ball is easy to track across the court. If you don't make a return then check your joystick twiddling – jerky animation is not an excuse in this game.

Sound is merely droning elevator musak, but a tweak of the volume control provides blissful release. There's lots of quality spot effects which enhance the game and add to the sense of "being there."

VERDICT

Well programmed, splendidly decorated, *Pro Tennis Tour* is addictive and fun to play. You may experience a certain frustration in the opening games as you fumble easy ball returns, run to the wrong side of the court and generally misjudge everything, but a little application will soon have you rallying with the best of them. And besides, if you don't have to try, it ain't much fun, right?

Instant appeal for those whose sole existence is dedicated to the manipulation of little hairy green balls, but non-tennis fans will also become devoted to the cross court carnage.

JERRY GLENWRIGHT

GRAPHICS	8
SOUNDTRACK	4
INTELLIGENCE	2
INSTANT APPEAL	8
LONG TERM INTEREST	7
OVERALL	**70%**

MICROSTYLE
XENOPHOBE

£24.99

Earth's warring nations band together to fight the common enemy – the Xenos. Yet another horizontally scrolling shoot-em-up rolls off the electronic presses, but this one has an added ingredient: fun!

Your task is to board an infected space station, rush left and right blasting various green slimy things, avoiding swaying tentacles and collecting useful objects such as bombs, phasers, pistols, and keys, until you've cleared the alien infestation and delivered the station into safety.

You're transported to the first space station, then it's legs into top gear and phaser glowing white hot as you bust a gut for glory.

■ One of *Xenophobe's* hairier moments: swiped sideways by the fearsome Snotterpillar...

EFFECTS

A myriad of green and scaly creatures appear from cracks in the floor and ceiling, from behind doors and out of cupboards and although they're definitely green and certainly scaly, little else can be said of them.

There's a feeling of *deja vu* – and that isn't good for a game already struggling to escape the bulging mass of similar games.

A nice effect is that you and a friend can appear in the game at the same time via split screens and attack each other as well as the Xenos.

Sound is consistent and fairly well implemented but nothing to write home to Ma about, comprising the usual stirring soundtrack intro leading to a multitude of gunfire and death rattle spot effects.

VERDICT

Animation is smooth, joystick control responsive, and although the game isn't going to win any prizes, it may well enjoy a little more than the statutory 15 minutes of fame.

JERRY GLENWRIGHT

GRAPHICS	6
SOUNDTRACK	5
INTELLIGENCE	1
INSTANT APPEAL	5
LONG TERM INTEREST	5
OVERALL	**55%**

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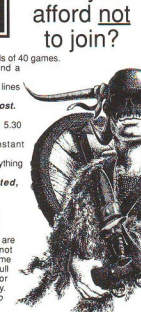

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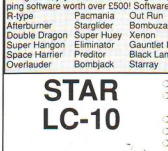

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5	**Level 16's Model Demo**	Full screen colour shock plus the sounds of Kraftwerk
6	**Doctorin' The House**	The first *useful* demo (contains a virus killer program)
7	**The Bat-Demo**	The Bat-Dance plus Bat-screen and Bat-sprite, from the Bat-ST Squad
8	**Phantom Of The Opera**	Stunning Heavy Metal animation plus terrific samples
9	**The Alliance Demo**	Multi-part demo with music from all your favourite games (and Out Run)
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Colour only. Nos 1 and 8 are DS disks, No 8 needs 1Mbyte RAM. All disks cost £3 (1 to 3) or £2.50 (4 or more) each, inc p&p

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Prices include postage, packing and VAT (£1 surcharge ex UK)

✶ ✶ ✶

DASH
MACHINE: ALL STs
PRICE: £19.95
FROM: MICRODEAL
CONTACT: 0726 68020

HIGH SPEED SAFETY

STORY *Richard Monteiro*
PHOTOGRAPHY *Richard Monteiro*

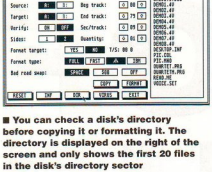
Microdeal's DASH is the fastest utility around – but not the only one, as ST Format *discovers*

Yet another utility to add to Microdeal's impressive range. While *DASH* – duplicating and security handler – doesn't offer anything innovative, it combines all the elements necessary for rapid disk copying and formatting in one very small program.

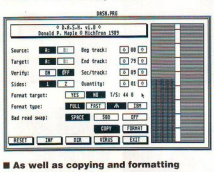
Yes, *DASH* does copy disks – but not the protected variety. In the light of recent copyright laws, it's just as well. Instead, *DASH* allows you to copy standard ST, 10 sector ST and IBM disks.

Exactly what is copied, and how it is copied, depends on a variety of settings: number of sides, number of tracks, sectors per track. Up to 83 tracks can be copied – well past the 80-track limit of many Atari disk drives.

The copying process is displayed both graphically and numerically on the main work screen.



■ **You can check a disk's directory before copying it or formatting it. The directory is displayed on the right of the screen and only shows the first 20 files in the disk's directory sector**



■ **As well as copying and formatting standard disks, DASH can handle PC disks and over-80-track formats**

It's possible to select format with copy, something current versions of TOS (that is, versions below 1.4) can't do. If the memory available is insufficient to contain all the disk data, several passes will be made.

Each disk is automatically checked for the presence of a possible boot virus. If found, the virus can be deleted before proceeding.

MINIMUM DAMAGE

GEM refuses to copy damaged disks – not *DASH*, however. Data on damaged disks is lost, of course, when Microdeal's program attempts to copy it, but the data is replaced with spaces, binary zeros or 255. Which value appears in the damaged sectors depends on you.

DASH's ability to fill damaged disks with spaces or zeros is extremely useful. For example, an ASCII file has a damaged sector lying in the middle of the data. Normally you'd lose the data completely as GEM would not be able to access the file. *DASH*, however, will replace the bad sectors with whatever you want. In this way you can get at the text file. While you'll lose some data, most of the file will still be intact.

The Full formatting option lets you format a disk in much the same way as GEM – although other options allow you to pick the number of sides, the number of tracks and sectors, and whether the disk will be ST or PC compatible.

Besides Full formatting, you can use a special fast reformat which will wipe out the contents of an old disk in just four seconds. This works by reformatting just the boot sector and FAT tables. The drawbacks are obvious – any corrupted sectors are going to cause problems later. Nevertheless, it does make *DASH* a quick alternative to wiping the contents of a disk by dragging all the files to the Trash using the GEM Desktop.

MAXIMUM SPEED

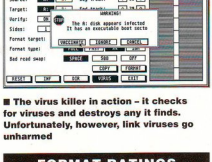
You can force the software to format the disk in drive A first and then the disk in drive B. This means you could put a disk in each drive and come back later when the formatting has finished.

For straight formatting *DASH* is better than the GEM version simply because of speed. It can format a single-sided disk in 34 seconds and a double-sided disk in 65 seconds. These compare to GEM timings of 53 seconds and 99 seconds.

DASH can be customised and an INF file saved to disk. Every icon that is highlighted will be detailed in the INF file.

While the virus killer supplied with *DASH* is useful, it isn't in the same league as Richard Karsmaker's *Virus Killer* reviewed last issue. Any non-standard boot-sector will be assumed to be a virus, and link viruses go by unharmed.

DASH is unquestionably useful and very fast, but many of its facilities are available in other packages. Chances are you will own software that duplicates many of *DASH*'s features – and spending £20 on something that you already own might not be your idea of good sense – but *DASH* offers a lot in just 24K. ■



■ **The virus killer in action – it checks for viruses and destroys any it finds. Unfortunately, however, link viruses go unharmed**

FORMAT RATINGS

Features 79%
Lots of formatting and copying options available, but it doesn't cope with protected disks

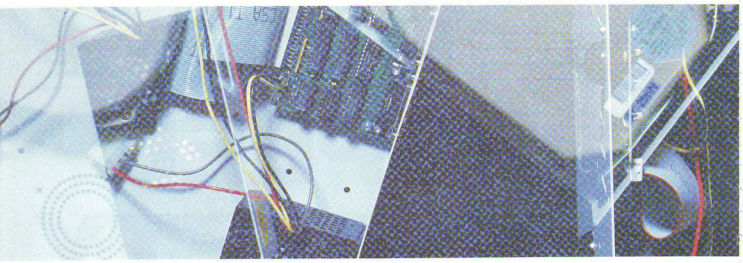
Speed 92%
Incredibly quick. Using the rapid reformatter on dodgy disks is dangerous

Ease of Use 81%
Just point and click

Results 97%
It does what it claims to do

Format Value 75%
£20 is not much for a utility, but if you own packages with similar features, the price is extreme

The Competition
Nothing offers everything that *DASH* contains but there's a lot of similar stuff: *Blitz*, *GEM Desktop*, *Procopy*, *Saved*, *Utilities Plus*, *Virus Killer*...



CLASH OF THE TITANS

Not long ago you'd have been hard pushed to find even a small hard drive for your ST. Now they're getting bigger and cheaper all the time. We pit two sub-£700 85Mbyte monsters head to head

Story *Jerry Glenwright*
PHOTOGRAPHY
Ashton James

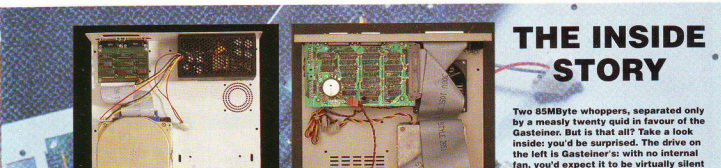
HARD DRIVING: THE FACTS

The hard drive has, as its name implies, an inflexible spinning disk made from a substance known as Mylar coated with a magnetic material allowing it to store electronically encoded signals on its surface.

The disk or "platter" as it's also known is permanently fixed inside the drive casing and operates in a partial vacuum.

By setting up the drive thus, it is possible to make the platter spin at a truly tremendous rate – 3,600 revolutions per minute compared to the floppy drive's miserable 300rpm – and to have the read/write heads (which pick up and deposit information to and from the disk) placed extremely close to the platter's surface.

In this way, the drive can store enormous quantities of data and you load that into your computer at a rate far greater than that of the humble floppy.



THE INSIDE STORY

Two 85MByte whoppers, separated only by a measly twenty quid in favour of the Gasteiner. But is that all? Take a look inside: you'd be surprised. The drive on the left is Gasteiner's: with no internal fan, you'd expect it to be virtually silent but susceptible to heat problems. Wrong on both counts. In fact it makes an unbelievable racket when it's going. Third Coast's model is considerably quieter and better constructed. But what matters is how they perform...

It may be only a year ago or so that you, like most new ST owners, were impressed with the speed and convenience of the floppy disk. Now, with advances in technology and cheaper manufacturing methods, your friendly neighbourhood ST dealer can offer you a range of capacious and reasonably priced hard disk drives that would shame the humble floppy.

The hard drive might seem an unnecessary luxury for the home computer user, but just try using some of the latest DTP, paint and graphics packages from floppy and you'll soon wish you had one. Databases and spreadsheets improve beyond recognition when allowed to bust through the 720K formatted storage space of the floppy, and even games are more fun with the increase in speed and loading convenience.

So they're wonderful. But until recently the downside to all this marvel of modern engineering has been an eyewatering price that has very successfully deterred all but the most affluent technojunkie. Now, however, with cheaper manufacturing costs and a bigger market for the devices, the price-per-MByte ratio is tumbling.

Even so, after deciding to purchase a hard drive, many users plump for the standard 20 or 30Mbyte sizes. Yet a much larger capacity doesn't necessarily mean a much larger price, and the difference in cost between the 30Mbyte and the 60 or 70Mbyte is small enough to make going for the big ones a sensible decision.

Although standard hard drives are available up to 300Mbyte, probably the biggest you'll find for the ST is around 80Mbyte. We pit two leading contenders from Third Coast Technology and newcomer Gasteiner against each other. There's almost nothing between them in price; both come formatted and ready to power up. Yet in terms of quality of finish and above all noise there's a big difference. Read on...

FA ST 85Mbyte

MACHINE: ALL STs

PRICE: £699

BY: THIRD COAST TECHNOLOGY

PHONE: 02574 2442

Third Coast are a major supplier of Atari-related hard and software and – quite aside from the genlock reviewed earlier in this issue, caching devices and replacement floppy drives – market their own series of hard drives. The range begins with a 22Mbyte device, and there's 32, 45 and 65Mbyte drives as well as the whacking great 85Mbyte monster reviewed here.

SIZE MATTERS

When hard drives first appeared for the ST they were little bigger than a floppy. Atari's own device and the popular Supra drive were both tiny. But with the release of the Mega STs, drive manufacturers realised the advantages of housing the mechanism in a case that could conveniently be used to support the CPU/system box. The result: larger drives requiring less space on your desktop. 520/1040 ST owners can use the larger drives as a stand for a monitor or television.

Third Coast have decided to adopt the latter styling, and there's enough space inside the case to add a second drive mechanism or tape streamer for back up purposes.

The drive is housed in a well made and sturdy steel case. The front panel features power lights for the drive, room for the optional second drive and tape streamer, and a drive busy light to indicate read/write operations. At the rear, there's a DMA outlet and ports for computer connection and future expansion.

Opening the case reveals the SCSI interface/controller card and the drive itself. The circuitry is thoughtfully laid out and tidy, and the whole thing oozes quality. Increasing the storage capacity of the unit is a simple matter of opening the case and plugging a second drive mechanism into the space provided: Third Coast supply a full range of compatible drives for this purpose.

SMOOTH OPERATOR

The FA ST comes ready formatted and set up for use with your ST. Getting the drive into action is a simple matter of connecting it to your computer with the lead provided, plugging it into the mains and switching on.

A few seconds later you're presented with the ST desktop, floppy drive buttons A and B, and twelve other drive icons labelled C through ➢

FORMAT RATINGS

Features **85%**
Compact, well made and quiet. Space for a second drive or tape streamer within the case

Speed **90%**
Sophisticated RAM cache software provides lighning fast data transfer

Ease of Use **90%**
Plug in with the supplied lead, boot up the software and go

Results **85%**
Software works well, the drive itself is robust and copes with knocks

Format Value **87%**
The unit is admirably well put together and represents a sound investment

The Competition
The GAS 85MByte featured over the page is almost exactly the same price – but see the review!

There are usually two or more heads in each fixed drive, with one or two heads on each side of the disk. Platters come in various sizes and generally have from 150 to 640 cylinders. This compares to the usual 80 tracks, 9 or 10 sectors found on a formatted Atari disk. A floppy disk is formatted as one unit, but hard drives are usually divided into separate partitions. This makes it much easier to track down your software.

Originally, ST hard-drive programs only allowed three partitions but new ICD software remedies that.

There are two common hard disk formatting techniques: MFM (Modified Frequency Modulation) and RLL (Record Length Limited.

The latter provides 50% more data storage space than the former. Most drives can be formatted to either specification, but a different drive controller is needed in each case.

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N representing the hard drive broken into manageable partitions. Each of these partitions acts as a drive in its own right, and makes the process of handling and using 85Mbyte of storage space much easier.

The first thing one notices about the FA ST in operation is that it's incredibly quiet. A slight background hum is all that can be heard, so you won't be distracted while working on that bestseller. Disk accesses are fast – typically 22 milliseconds – and quiet, with none of the shake, rattle and hum of stepper motors associated with some cheaper hard drives.

The drive is supplied with two excellent manuals and for those new to hard disks, there's an explanation of how they work, what they're made of and so on. This information is easy to assimilate and helps dispel some of the mystique surrounding that little box of electronic tricks sitting under your computer.

The rest of the manual tells you how to format and partition the drive, and gives general tips on caring for the device. It's a fine idea to have photographs illustrating the text, but not when they're this bad: guys, sack the chump with the box Brownie and the shakes.

The manual, blurred photographs notwithstanding, is written in a clear and lucid manner, and assumes little knowledge on your part. At the end of it you'll feel confident of booting up and using this well constructed, solid, dependable and pleasantly quiet drive. Everything about it inspires confidence.

GAS 85MByte

MACHINE: ALL STs

PRICE: £679

BY: GASTEINER TECHNOLOGIES

CONTACT: 01 884 2415

Gasteiner, who formed after a split with PC specialists Cavendish, market a large range of hard and software for the Atari ST including RAM upgrades, laser printers and several hard drives imported from Germany.

The range starts with a 50Mbyte device priced £479 rising to this enormous 85Mbyte drive for a very reasonable £679. But is it in fact a false economy to buy such a cheap drive? After all, 85Mbytes is a hell of a lot data to lose if the drive goes down due to poor construction or inferior parts.

STANDING PROUD

The GAS 85Mbyte is housed in a large, plain grey case with a single disk busy light on the front panel. This light, however, stands proud of the case, and is likely to be the first casualty in the event of a bump.

At the rear, there's a couple of ummarked ports, an oblong hole the purpose of which is unclear, and an on/off rocker switch. The rear panel looks shoddy and unfinished. The case fits together badly – there's a large gap at the front, and the whole thing does not suggest that this is the Rolls Royce of hard drives.

Opening the case reveals a slight improvement in quality. There's a 5.25 inch hard drive mechanism, neat little power supply, control electronics circuit board, and space for a second drive. One or two parts could be better connected, but the interior is tidy.

GETTING UP

The GAS 85Mbyte is supplied pre-formatted and partitioned, so connecting it to your ST via the lead supplied and providing power is all that's required.

Switching on, it must be stated, produces a noise not unlike a 747 winding up for take-off. I mean, this drive is incredibly noisy. A continuous whine somewhat akin to a harassed editor demanding copy howls forth, and read/write operations produce a graunching and grinding that wouldn't be out of place in the bonecrushing department of the local abbatoir.

The noise is probably amplified by the empty space in the case provided for the second drive, but knowing that doesn't help when you're trying to work with a decibel count in the upper 90s flying around your desk top. Data access time for the GAS is typically 28 milliseconds.

The Gasteiner drive is accompanied by a pair of manuals which although little more than pamphlets, do provide all the information necessary to get the most from your drive and the supplied back up software. Gasteiner have thoughtfully provided several other public domain disk utilities such as Diskmech, a sector editor, and Ultra, a utility which measures the performance of your hard drive.

HARD DECISION?

Both drives are fast and capable. Both offer an increase in productivity unheard of in the ST market until recently. Both are reasonably priced and fully supported by their respective suppliers.

Despite their similarities, however, the difference between the two is all too obvious. The Third Coast drive most definitely has the edge when it comes to quality. It's better put together, and, more important, it's so much quieter.

If you reckon it's worth saving £20 and you really don't mind having to wear a Walkman wheever you use your ST, then go for the Gasteiner. Otherwise, make your cheque out to Third Coast. ■

FORMAT RATINGS

Features **55%**
Large, shoddily constructed and incredibly noisy

Speed **70%**
A reasonable trun of speed but it simply doesn't compare with the FA ST

Ease of Use **90%**
Plug in the supplied, boot up the software and you go

Results **55%**
Disk access are unbearably loud. Supplied software worked reasonably well

Format Value **67%**
At only £20 cheaper than the competition, the Gasteiner offers poor value for money

The Competition
The FA ST from Third Coast may only be £20 more expensive, but it's considerably better put together and a whole lot quieter

WHO GETS YOUR SIGNATURE?

A SHOPPING GUIDE

So you've finally had enough. You've spent far too long sitting around waiting for your ST floppy to load and save data. You already know the hard drive is the way forward. And now you've just secured the best newspaper round on the block you have the cash as well as the incentive.

So whose hard drive gets your hard earned? Check out *Format's* definitive list of the best value for money hard drives and suppliers...

MEGAFILE 44

One of the latest from Atari and one of the most innovative, the Megafile 44 uses removable hard disk cartridges to store 44Mbytes of data. Further cartridges cost £100 each so that, in effect, the drive has unlimited storage capacity.

Apparently it's just been adopted by the Ministry of Defence as their preferred method of data storage: whether that encourages or discourages you is another matter!
(Reviewed in last month's *ST Format.*)
£920 ■ SDL ■ 01 309 1111

TRIANGLE TURBO 3+

A fast 48Mbyte unit with data access times of 28 milliseconds and the added advantage of offering a ROM- rather than software-initiated boot-up. Supports additional second drives and emulators such as PC-Ditto, Spectre 128 and Aladdin.
£499 ■ Power Computing
■ 0234 273000

SUPRA 30MBYTE

Imported from the good ole US, this was one of the very first hard drives for the ST. It's fast, well made and for those of you with limited desk space, very, very small.
£469 ■ Computer Express
■ 0727 37451

VORTEX 40MBYTE

A relative newcomer to the Atari ST hard drive range, the Vortex is fast and well made: comes with utility software and not a bad price tag at all.
£500 ■ Ladbroke International
■ 0772 203166

TURBO KIT

Not, of course, a bizarrely underpriced hard disk: rather it's a hard disk backup system. It also lets you de-fragment your hard disk and create a disk cache.

Whatever hard disk you decide to go for, *Turbo Kit* is £30 well spent.
£29.95 ■ Microdeal
■ 0726 68020

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- ★ Supports Tape Drive
- ★ 38 Inch DMA Lead
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- ★ Six Months free phone support
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THIRD COAST RAM UPGRADES FOR ATARI ST RANGE

520STFM Board + Chips Expands to 4 Megs (no soldering)	£129.99
520STFM Board Unpopulated	£49.99
520STFM Upgrade to 1040 Full Kit	£69.99
520STFM Upgrade to 1040 Fitted by TCT	£94.99
520STFM Solderless Board + Ram	£129.99
2 Meg Board Upgrades 1040 to 2 Megs (Expandable to 4 Megs)	£249.99
2 Meg Board Unpopulated	£79.99
4 Meg Board 2.5 Installed for 1040/520	£299.00
4 Meg Board 4 Megs Installed for 520/1040	£489.00
4 Meg Board Unpopulated	£79.99
Mega 2-4 Upgrade professionally Fitted	£249.00
Mega 1-2 Upgrade Professionally Fitted	£149.00
Mega 1-4 Upgrade Professionally Fitted	£399.00

All Ram is 100 Nanosecond or faster. All Upgrade kits come with Ram Checker, Ram Disk, and Print Spooler. All kits and Boards carry a full 12 Months Warranty.

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- ★ Four NLQ Fonts
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- ★ 4K Buffer
- ★ 96 NLQ Print Combinations
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- ★ Colour Version available

MONO £154 COLOUR £195

ADDITIONAL PERIPHERALS

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Compatible with Atari SH204/205, Megafile 20/30/60, Third Coast Drive, Supra Drive, Cumana Drive Backs up 155mb in 20 minutes, 20mb in 2 minutes

- ★ External enclosure off DMA IN/OUT
- ★ Battery backed clock
- ★ 50 way SCSI OUT
- ★ SCSI ID selector
- ★ Comes complete with own case & power supply and Host Adaptboard
- ★ Will support internal SCSI Hard Drive
- ★ Installation simply involves connecting tape drive into Atari then connecting Hard Drive into output of tape drive.
- ★ Offers long awaited DMA output for Atari SH204 users wishing to connect to laser printer

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Above kit cased in our drive cabinet offering support of upto four hard drives this basically is one of our drives without the Hard Drive	£299.00
RLL Adaptec 4070 or Omti 3527 controllers (giving 50% more out of any drive + twice the speed)	£100.00
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Upgrade your Atari SH204/5, Megafile 20/30, Supra, Cumana, 45 M/Byte Mechanical Head Auto-park. Fast installation, all data copied to new drive. You will get your old drive cabinet back with the new drive fully warranted and ready to go. Upgrade yields over 100% more performance from your old drive.

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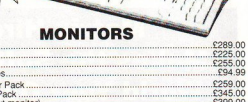
inc VAT



MONITORS

Atari SC1224	£289.00
Philips 8833	£225.00
Philips 8852	£255.00
Atari SM124 Hi Res	£94.99
520STFM Explorer Pack	£259.00
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1040STFM + SC1224 Monitor	£670.00
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Fleet Street Publisher

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Inc VAT + UK mainland delivery

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✶ While stocks last above but with 45 meg internal, same specifications as 32 meg £2395.00
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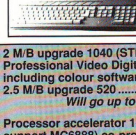

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GENLOCK

FEATURES:

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1040STFM Professional.....389.00
Includes VIP, Microsoft, Basic disk and manuals.
SM124.....110.00
SC1224.....229.00

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1MB 3.5" Drive (External).....89.00
1MB 5.25" Drive (External).....99.00
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ATARI DRIVES

20MB Hard Disk drive.....390.00

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NEC Multisync 3D.....480.00
NEC Multisync 11A.....349.00
NEC Multisync Plus.....612.00
NEC Multisync 20" XL.....1359.00
Phillips CM8833 14" Colour.....199.00
Phillips BM7502 12" Green.....79.00
Phillips BM7522 12" Amber.....89.00

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Amstrad DMP3160.....105.00
Amstrad LQ3500 I9.....195.00
Amstrad DMP4000.....195.00
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High capacity feeder for modern Laser printers
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This mega program includes the entire C-LAB Creator software PLUS score editing and printout to an enormous range of printers. Converts your keyboard playing to score before your very eyes, even while you record it. Full complement of musical symbols. Contact us for a brochure.

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These two packages are stand-alone programs, and offer the cheapest method available of transferring your performance to a printed page.

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Trackman features 32 tracks and a 'Mixing-Desk/Tape-Recorder' style of operation. Includes an additional MIDI OUT box for 32 MIDI channel support and a unique footswitch for remote operation if preferred.

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Choose between MIDI Man, Steinberg Twelve or MIDI Drummer as your free software. Deduct £100 if your do not want the Monitor.

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A large selection is always kept in stock. Basically, the Soundbits editors are the cheapest but the more expensive Steinberg and C-Lab Editors offer faster operation and bags more features. They all do the same job at the end of the day!

☐ CHAMELEON UNIVERSAL SYNTH' LIBRARIAN.....£89.00
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BREAK INTO THE VIDEO AGE!

What's stopping you from being a Video Jock? You have an ST, you have a video recorder: you may even have a video camera. What you haven't got – simply because it hasn't been available – is a genlock, the device which allows you to superimpose computer and video displays on a single screen.

Now, thanks to those intrepid chaps at GST, the breakthrough has been made. For £499 you can be the first on your block to be a VJ – a Video Jock!

Er... sorry. Did we say £499? Actually we mean it'll cost you precisely nothing – unless you want to include the price of a stamp, that is. For we've got a complete GST Gold to give away.

Simply tell us, in 15 words or less, why you want to win. Make it funny, make it serious – we don't mind, but just convince us you're who we should give it to!

Jot your entry down on a postcard or the back of an envelope and, entrusting it to snail mail, send it to: Genlock Competition, *ST Format*, Future Publishing, 4 Queen St, Bath BA1 1EJ. (Incidentally, it might be an idea to put your own name and address on the entry. Sounds a tad obvious, but you'd be surprised.)

Now we must say, before we let you get your pinkies on this kit, that this is serious hardware. As you'll know from the review (beginning page 18, incidentally, or did we mention that already?), there's a certain amount of setting up that's required before you can get going.

Even so, this has to be one of the most exciting ST developments in a long time, and you'd be daft not to go for it. So good luck, and make sure you get your entries in well early: you know how things get in December, so don't leave it until the last minute! ■

RULES

1. This competition is not open to employees of Third Coast, GST, Future Publishing or their relatives.
2. All entries must be received, on a postcard or the back of an envelope, at Genlock Competition, *ST Format*, Future Publishing, 4 Queen St, Bath BA1 1EJ, by December 31st, 1989.
3. The judges' decision is final and no correspondence can be entered into.
4. The installation and operation of GST Gold software and hardware may require some basic technical knowledge. Neither Third Coast nor *ST Format* is under any obligation to assist in getting the thing working, though being such pleasant and helpful chaps we may be able to help out.
5. Entry to this competition implies acceptance of these rules.

You've read all about GST Gold, the very first genlock for the ST, in our special report beginning on page 18. Now's your chance to become a VJ – for free!

Interphase™

The dreams of the future are now reality; fully trained professionals whose purpose is to create optically stored REM moments – dreams to obliterate the cares of waking thought.

Yet the DreamTrack (TM) Corporation have created an insidious implant within the latest DreamTrack (TM) that is being mastered for release within the labyrinth of the Corporation's mainframe complex.

As a rogue dreamer, you have to enter the mainframe and direct your partner to the track itself – the minds of every future generation will be trusting to your skill and intellect.

Screenshots from ST version

Atari ST, Amiga, IBM PC and compatibles.

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ON THE DISK

The ever so wonderful and scrumptious *ST Format* Cover Disk contains over 800K of demos, games and utilities. Unfortunately, not all 520ST owners are lucky enough to have double-sided drives. For that reason a special format disk is used which can be read by both single-sided and double-sided drives. Single-sided drives, of course, can only access the top side of the disk.

Rob Northen, responsible for the *ST Amiga Format* dual format disk, has produced the latest format which allows everyone to access the spectacular *Untouchables* demo and all the other goodies on side A. Double-sided owners get a double hit with all the amazing demos on side A *and* the unbelievable utilities on side B.

To get at side B – assuming you have a double-sided drive, of course – just double click on the folder SIDE_2. If you have a single-sided drive, a box appears with the rather alarming news that there's an error on the disk.

Don't panic! The data is not damaged – it's just a consequence of the format. Click on CANCEL and all will be well. *Remember though, you won't be able to access anything on side B if you have a single-sided drive.*

The Untouchables

BY: OCEAN

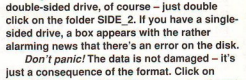
SIDE: A

MACHINE: ALL COLOUR STs

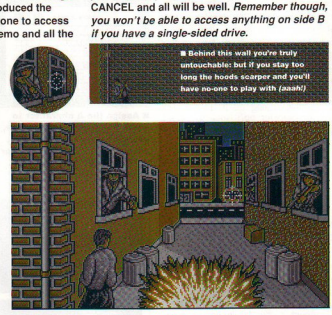
FILES: UNTOUCH.PRG, FILE1, FILE2, UNTOUCH.DOC

Wow! A playable demo of the third scene from Ocean's forthcoming game *The Untouchables*. Grab your pump-action shotgun!

You're Elliot Ness, leader of The Untouchables (hence the title, I guess), boss of an elite band of government agents fighting the rising tide of organised crime. Public enemy numero uno is gangland leader Al Capone, who controls all organised crime on the streets. Catch him – dead or alive!



■ **Behind this wall you're truly untouchable: but if you stay too long the hoods scarper and you'll have no-one to play with *(aaahh!)***



THE UNTOUCHABLES

Ocean's full game features six action-packed scenes based closely on the blockbuster movie. The Cover Disk version is a playable demo of the third scene. You're in the alley, with hoods on every corner and looking out of every window. Poke your head round the corner and fire off a coupla shots real quick, or you won't live to tell the tale.

The demo provides you with two of the eight alley screens from the full game. If you survive the alley sequence then you're ready to play the complete game – available from all major software stockists.

■ **Go ahead punks, make my day... The gang's all here, and it's your job to make the city a decent place for folks to live**

GETTING STARTED

Insert a joystick into game port 2. Run the demo by double-clicking on the UNTOUCH folder. Once inside, double-click on UNTOUCH.PRG. Press fire to begin play. You're in an alley. Look round the corner, fire a couple of volleys and get back under cover quickly.

Shoot anything that moves – but be warned, you've got a tight time limit in which to kill the mob. And you've also got a limited amount of energy. Ya ain't gotta chance, Mac!

The first few times you'll probably find the whole thing completely impossible and for that reason annoying. Don't give up – if "Fingers" Glenwright can do it *(dur, wot's dat boss?)*, surely anyone can!

STARRING

Side A

THE UNTOUCHABLES
Thrill to this superb playable demo of Ocean's forthcoming hoods-v.-G-men pump-action shotgun wars! Your orders: apprehend Capone – failing that, blast him to bits!

QUARTET
It's the sound sensation that's sweeping the nation! Sample the delights of Microdeal's stunning four-channel sound sequencing package. One day, games will sound like this...

RECOVER
Ever had a disk go down on you? This handy program helps you recover files accidentally deleted or corrupted. Don't compute without it!

QMOUSE
Put life into your mouse! Get rid of the sluggish ST mouse pointer! Replace it with a Speedy Gonzales-type rodent!

Side B

ACCESSORIES
A pair of Desktop accessories: WORD COUNT adds up the number of words in a text file; X-UTILITIES offers copying, formatting and setup facilities

ANIMATIONS
Two *Cyber* animations: see Mark Pickavance's graphics tutorial (page 101)

BOOT MAKER
Create autobooting programs. Normally only TOS-based programs can be run from the AUTO folder: now any GEM-based item can be made to run

CZ SOUNDS
Transfer preset sound data between your Casio CZ101 keyboard and ST via MIDI

FLYING START
The complete solution for all your comms connections

PC FORMAT
Format a disk (3.5 or 5.25-inch) to boring PC standard

RAMLOAD
All the utilities you need can be copied automatically on boot to a RAM disk. Now that's what I call useful!

Quartet

BY: MICRODEAL

SIDE: A

MACHINE: ALL STs

FILES: QUARTET.TOS, QUARTET.1, QUARTET.2, QUARTET.3, QUARTET.DOC

See the full review of Microdeal's stunning four-channel sample sound sequencer on page 132 and then check out the demo on the Cover Disk. The sound quality is startling, but what's even more amazing is the fact that the whole song – which goes on for several minutes – is less than 70K, consists of 16kHz samples and uses five different instruments!

The full version of *Quartet* is capable of just about anything, short of explaining why Paul Daniels is so successful. Look out for more four-channel tracks in the future.

GETTING STARTED

Open the QUARTET folder by double-clicking on it and then double-click on QUARTET.PRG. Sit back, listen and enjoy. Hit the space bar to bring this superb demo to an end.

Recover

BY: PUBLIC DOMAIN

SIDE: A

MACHINE: ALL STs

FILES: RECOVER.TOS, RECOVER.DOC

Once a file hits the Trash icon on the Desktop the file has gone forever. It is an ex-file, it is no more, it has gone to meet its maker. That's no longer the case, though, with Recover. Accidentally deleted files, and even damaged files, can be partially recovered.

Recover is best for reviving text files rather than program files because it displays the contents of a "cluster" (two sectors) on a disk, and it's up to you to decide whether the sectors belong to your deleted files or not.

GETTING STARTED

Double-click on the RECOVER folder followed by a double click on RECOVER.TOS. Do read the .DOC file first by double-clicking on it and clicking on "SHOW."

When prompted, type a single letter for the drive identifier (A might be a good start). When asked for a cluster number, enter consecutive cluster numbers (starting from 1) and write down a list of the clusters you think contain your file. Enter N if you don't think the cluster belongs to your file – enter Y if you think otherwise.

Insert a blank disk when you've collected together all the clusters you think make up the deleted file and then simply enter a suitable filename. Job done!

QMouse

BY: ANTHONY SNELL

SIDE: A

MACHINE: ALL STs

FILES: QMOUSE.PRG, QMOUSE.DOC

Mouse pointer sluggish? Does your mouse traverse vast acres of desktop to move the pointer a few lousy pixels across the screen? Qmouse revitalises the mouse pointer. Just *feel* that response!

GETTING STARTED

Get inside the QMOUSE folder by double-clicking on it. Double-click on QMOUSE.PRG: now move the mouse and see the difference.

Wrdcount

BY: JOHN FARMER

SIDE: B

MACHINE: ALL STs

FILES: WRDCOUNT.ACC, WRDCOUNT.DOC

Need to know how many words exist in a text file? This handy utility does the hard work for you. Not all word processors have a word count, so this facility can be invaluable.

Install WRDCOUNT.ACC into the DESK menu as you would any other accessory. Single-click on it once it's in the menu. A file selector box appears. Simply type in the name of the file whose word count you wish to find out. Be sure the document is in ASCII format, or you may get misleading results.

A box appears informing you of the number of words in the document. Click on CANCEL to exit.

X-utilities

BY: PUBLIC DOMAIN

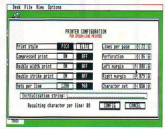
SIDE: B

MACHINE: ALL STs

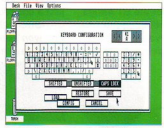
FILES: XUTI.ACC, XUTI.RSC, XUTI.DOC

A set of neat utilities to have at the press of a mouse button. Install XUTI.ACC into the DESK menu as you would any other accessory. Single-click on it once it's in the DESK menu. A box appears giving you several options.

FORMAT formats (hence the title) either a straight ST disk or a non-standard – but higher capacity – disk. **COPY** allows you to make a backup of an ST disk much faster than the sluggish GEM Desktop equivalent. **REPAIR** looks through a disk for bad sectors and reformats any bad tracks it finds. It saves as much data as it can, but use with care! Make a copy of your disk before trying to repair it. **PRINTER CONFIGURATION** sets up the system to recognise the printer attached to your machine, while **KEYBOARD CONFIGURATION** allows you to get at all the non-standard characters by assigning them to other keys on the ST keyboard.



■ **Configure your printer from X-Utilities. Just point and click to tell the ST about your printer**



■ **Assign the A character to every key on the keyboard or, if you're feeling more sensible, assign the extra ST character set to unused keys. And all from X-Utilities!**

Animate4

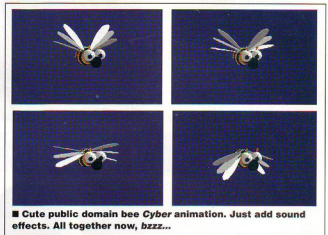
BY: TOM HUDSON

SIDE: B

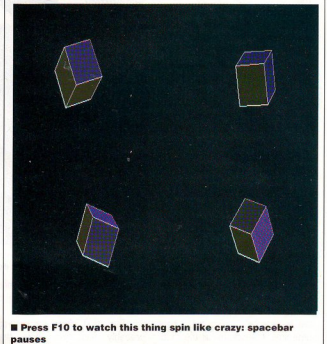
MACHINE: ALL STs

FILES: ANIMATE4.PRG, ANIMATE4.DOC

We wouldn't claim that this pair of *Cyber* animations will do wonders for your social life... or make you rich... But what the hell, they're cute! And one ties in with Mark Pickavance's graphics tutorial (see



■ **Cute public domain bee *Cyber* animation. Just add sound effects. All together now, *bzzz...***



■ **Press F10 to watch this thing spin like crazy: spacebar pauses**

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HOW TO BACK UP YOUR DISK

Because the ever so wonderful and scrumptious *ST Format* Cover Disk is wilfully non-standard and squeezes in a whacking great 400K of data per side, the back up procedure is not simple. Follow these steps, however, and you won't encounter any problems. Do it any other way and you could knacker your Cover Disk.

1. **Format a couple of blank disks – single-sided if you've got a single-sided drive, double-sided if you have a double-sided drive (with us so far?).**
2. **Write protect the Cover Disk and insert it into drive A (if you have two drives, you lucky devil you, insert the Cover Disk into drive B). Double-click on the drive B icon. If you're still saving up to buy a second drive, a message appears requesting you to put disk B in drive A. Simply click on OK.**
3. **Insert one of the fresh, crisply formatted disks into drive A. Double-click on the drive A icon.**
4. **Pick up a folder at a time from the Cover Disk window and plonk it into the drive A window.**
5. **If you have one drive then you'll be asked to insert disk A and disk B at regular intervals. Don't, whatever you do, mix the two up! Disk B is the Cover Disk and disk A is the freshly formatted disk.**
6. **When you get a "disk full" error message, recopy the last folder – and all subsequent folders – onto the second freshly formatted disk.**
7. **Double sided owners, double-click on SIDE_2 once you've finished copying all the folders from side A of the Cover Disk. Job done!**

HAVE IT ALL

You single-sided drive owners needn't miss out: get hold of the B side by sending your name and address with a cheque or postal order for £1.75 to: B-Side, *ST Format* 5, Future Publishing, 4 Queen Street, Bath, Avon BA1 1EJ.

section beginning on page 101).

To get to the ANIMATE folder double-click on the SIDE_2 folder. Inside the ANIMATE folder you'll find Buzzbee (Public Domain; all colour STs – sorry about last month, by the way! – with the file-name Buzzbee.Seq). This small but perfectly formed cute animation is well worth the measly 21K it takes up. You'll also find Cube1 (Mark Pickavance; all colour STs; file-name Cube1.Seq), which illustrates our *Cyber* tutorial (see section beginning page 101).

Animate4 was on last month's disk – so we won't go over how to use it again. But if you're stuck, there's a very comprehensive help file on the disk. Incidentally, apologies from a contrite editor to those of you with 520s who couldn't run the Cyber animations last month. We've picked a couple of smaller efforts this time!

Boot maker

BY: PUBLIC DOMAIN

SIDE: B

MACHINE: ALL STs

FILES: BOOTMKER.PRG, BOOTMKER.DOC

Now you can force any GEM-based program to boot from the AUTO folder. Normally only TOS-based programs can be run from the AUTO folder. Boot Maker makes the impossible possible.

GETTING STARTED

Double-click on the SIDE_2 folder, double click on the BOOTMKER folder and finally double-click on the BOOTMKER.PRG file. A file selector appears. Simply type in the name of the file you wish to autoboot. Note: the file you wish to autoboot must have a .TOS or .PRG extension. A file is created which must be placed in the AUTO folder. This runs your selected program.

CZ sounds

BY: PUBLIC DOMAIN

SIDE: B

MACHINE: ALL STs

FILES: CZSOUNDS.PRG, CZSOUNDS.DOC

Transfer data between a Casio CZ101 MIDI synthesizer and an ST using a couple of MIDI leads and this software. Handy if you wish to store all the preset sounds and load in others.

GETTING STARTED

Inside the SIDE_2 folder you'll find a folder called CZSOUNDS: double-click on it. Double-click on the CZSOUNDS.PRG program to start. A menu offering six options appears. Simply type the number of the option you wish to select. When downloading or uploading you're asked for a preset number – enter something like P05 (for the fifth preset voice) or I16 (for the sixteenth internal voice). The view-memory facility allows you to display (or print) the memory buffer where the data is stored.

Flying start

BY: PUBLIC DOMAIN

SIDE: B

MACHINE: ALL STs

FILES: FLYSTART.PRG, FLYSTART.DOC

Here it comms (ouch) – a full-featured comms package that lets you log on to the likes of Prestel and Telecom Gold. There are menus offering standard RS232 configurations for 7 data bits, even parity, 1 stop bit; 8 data bits, no parity, 1 stop bit; inverse video, and both colour and monochrome screen displays.

Data transfer rates of 300/300, 1200/75 and 1200/1200 are supported. Free, and worth every penny (erm...).

GETTING STARTED

Load the program by double-clicking on the SIDE_2 folder, double-clicking on the FLYSTART folder and double-clicking on the file FLYSTART.PRG. A seven-option menu appears:

1. 300/300 Telecom Gold
2. 1200/1200 Telecom Gold
3. 1200/75 Prestel
4. 1200/1200 Prestel
5. 300/300 BBS
6. 1200/75 BBS
7. Invert video

Return to the above menu at any time by pressing the HELP key. Pressing UNDO returns you to the Desktop.

The first option puts the ST into an ASCII character set, 300 baud transmit/receive rate with 7 data bits, even parity and one stop bit (7E1 for short). It responds to VT52 commands, but if you don't know what that means, don't worry – it just makes the RS232 port communicate with the outside world in the way that a 300 baud Telecom Gold connection would understand.

Option two is identical to option 1, but with a 1200 baud transmit/receive rate. The third causes the ST to transmit at 75 baud and receive at 1200 baud. It uses the 7E1 structure, but with a Prestel character set.

Number four allows 1200 baud receive and transmit (still 7E1) using the Prestel character set. This selection allows intelligent modems to perform the 1200/75 split internally, while they still talk to the ST at a constant 1200 transmit/receive rate.

Pressing five places the ST into 300 baud transmit/receive, 8 data bits, no parity bit and one stop bit (8N1). This is the most commonly used bulletin board standard. Option six puts the ST into a 1200 receive, 75 transmit mode and the ASCII character set in VT52 emulation mode. This is used by some BBS for rapid retrieval of information where only limited commands need to be transmitted by the ST.

The last option toggles the text between black and white. This doesn't function in Prestel mode, and resets itself on exit to the desktop.

Number two in a highly irregular series

DESKTOP ACCESSORIES

Unlike standard .PRG or .TOS files, Desktop accessories (recognisable by their .ACC extensions) can't be executed by double-clicking on their file names. Instead, GEM must be given instructions to load them at start up.

Accessory files must be present in the root or main directory so that GEM can find them. Once installed, an accessory is run by pulling down the Desk menu and clicking on the accessory's name. Up to six accessories can be held in memory at once – but they take up memory all the time the ST is running, so install only those you really need.

Make sure all accessories you want to install are in the root directory of a disk. Hit the reset button once you've got them there: this forces them to load automatically into the ST's memory.

To use the desk accessories (files with a .ACC extension) on this disk, copy the ones you want onto a blank disk. You can have up to six at once. Insert the disk containing the accessories in the root directory into your internal drive and switch on your ST. The accessories load automatically and are available for use until you reset the ST. Simply move the pointer to DESK and click on the name of the accessory you wish to use.

Next: how to extract your own tonsils

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FAULTY DISK?

In any disk duplication run as massive as *ST Format's*, it's possible that a tiny proportion of the disks may be faulty. If you're unlucky, sorry. You're guaranteed a replacement, however, if you send your corrupted disk to:

***ST Format* December Disk Returns, Discopy Labs, Unit A, West March, London Rd, Daventry, Northants NN11 4NA. Don't send a faulty disk to any other address: only Discopy Labs can help you.**

CELEBRITY HOTLINE! 4-6PM WEEKDAYS 0225 765086

Flummoxed by files? Dumfounded by disks? Just plain puzzled? If you have a problem with the disk – and you're sure there is no corrupted data – phone 0225 765086 with your query. You'll be through *(sincere voice)* to Richard Monteiro, sometime editor of this noble organ and all-round good egg. He's our celebrity Disk Editor, and what he don't know about the ST ain't worth knowing. (For problems before issue 5 phone *ST Format* on 0225 446034.)

When you call have ready the info Dickie needs to help you: the model of your machine; the version of GEM/TOS you're using; and anything you've got attached to (or plugged inside) the computer. Have the disk handy and your ST up and running, and a pen and paper handy so you can take down his pearls of wisdom *(snigger)*.

Monteiro is 13 and likes driving fast and making money to pay for repairs to his car, again.

Ramload

BY: KEVIN CHEUNG

SIDE: B

MACHINE: ALL STs

FILES: RAMLOAD.PRG, RAMLOAD.INF, RAMLOAD.DOC

Just think how handy it would be if several of your most commonly used utilities would automatically load into a RAM disk on boot up. With Ramload (sincere voice), that dream can become a reality.

GETTING STARTED

You can run Ramload from the desktop, although for convenience it's best to keep it in the AUTO folder. The program expects to find RAMDISK.INF (in either the AUTO folder or root directory) which details the files to be copied to the RAM disk. RAMLOAD.INF is an ASCII file and can be edited with most word processors. Following is a typical example:

!C:	the drive identifier
#MACROS	copy from a folder
MACROS\GEMDOS.S	copy GEMDOS.S from the MACROS folder
GENST2.PRG	copy file from root

The first line specifies the drive which is to be used as the RAM disk – C in this case. (Each program that you want to copy to the RAM disk must be on a separate line, and all letters must be in upper case). If you want to copy files from a folder you first need to specify the folder: #MACROS, for instance.

If you're using this program from the AUTO folder make sure it comes after your RAM disk program. AUTO folder files are executed in the order in which they were copied into the folder.

To prevent Ramload from running, hold down left Shift and Alternate together.

■ Swap files between your ST and PC using disks formatted in PC Format

PC format

BY: PUBLIC DOMAIN

SIDE: B

MACHINE: ALL STs

FILES: PCFORMAT.PRG, PCFORMAT.DOC

Your ST can read and write PC format disks, but a PC can't read and write ST disks (you've got to feel sorry for the older, more basic technology inside the PC). The obvious answer to this predicament is either to format a 3.5-inch disk on the PC and use it to transfer data between the two machines, or use PC Format to format your ST disks.

As well as formatting 3.5-inch disks, PC Format can format 5.25-inch disks (you need to have a 5.25-inch disk drive attached, obviously!). It's even possible to alter the St's step rate to bring it in line with 5.25-inch drives.

GETTING STARTED

Double-click on SIDE_2. Once inside the folder, double-click on the PCFORMAT folder. Finally, to run the program, double-click on PCFORMAT.PRG. A box appears with options for formatting a disk in drive A or B, and altering the step rate of either drive. Items are selected WIMP style, so it's easy to get around. ■

READING .DOC FILES

In most folders on the Cover Disk there's a file with the extension .DOC. This is a help file containing instructions on using the program: read all relevant help files before running any program.

To read a help (or .DOC) file, simply double-click on it. Click on CANCEL if you don't wish to read the file; click on PRINT to send the document to a printer; click on SCREEN to send the text to your monitor. After each screenful of text the display halts. Pressing return scrolls up a line while pressing space scrolls up a complete page of text. Pressing Q or Control C returns you to the Desktop.

***ST Format* can't be held responsible for damage resulting from improper use of the Cover Disk. If you failed to read a help file, it's tough. Sorry to get so heavy, but this is important.**

DARE YOU DEMO?

Are your demos good enough? Use any format you wish – *Tiny, Degas, Neo-chrome, Spectrum 512* or *Quantum Paint* – but stay under 200K. And make them clickable from the desktop: don't send demos that use the boot-sector to run, because we won't use them.

And there's an absolute fortune on offer, too. Actually we're lying, it's not a fortune at all. But the best picture every month does earn the artist £30, which is better than a poke in the eye with a joystick. So send your artistic achievement – if you dare – to: Richard Monteiro, *ST Format* Celebrity Cover Disk Editor, 71 Barn Glebe, Trowbridge, Wiltshire, BA14 7JZ.

FAME! MONEY! POWER!

We need *your* software – games, utilities, demos, anything good, original and preferably short. If you've written something worthy of the *ST Format* Cover Disk (and remember, it's the ones we discard that makes ours rock hard), send it with this form and full documentation to: Richard Monteiro, *ST Format* Cover Disk Editor, 71 Barn Glebe, Trowbridge, Wiltshire, BA14 7JZ. Allow four weeks for a reply.

* Note: we pay, and pay well, for contributions to our Cover Disk. But to earn big dosh, of course, you'll have to write something pretty spectacular, original and complex.

■ Don't forget to: ■ Enclose an SAE ■ Include on-disk and paper documentation ■ Write your name and address on the disk ■ Use a virus-free disk ■ Brush your teeth at least three times a day

NAME _____

ADDRESS _____

DAYTIME 'PHONE _____

PROGRAM TITLE _____ **SIZE IN K** _____

WHY IT'S SO UTTERLY GREAT: _____

Please sign the following declaration: This program is submitted for publication in *ST Format*. It is wholly my own work and I agree to indemnify Future Publishing against any legal action should copyright problems arise.

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Tower of Babel is an intricate 3D strategy game involving an interconnecting network of towers, platforms and lifts all rendered in solid 3D with innovative light and shading techniques. Take control of robot spiders and program them to solve problems and puzzles and interact with other creatures, such as Pushers, Zappers and Grabbers. Alternatively, real time control is available to you at any time for instantaneous reaction to the game's developments. For the more adventurous among you, there is a complete game designer, allowing the construction of your own series of towers, platforms and lifts. Attempt to fox your friends with your own fiendishly difficult creations. More than just a game, more than just a puzzle – Tower of Babel is a whole new concept in strategy gaming.

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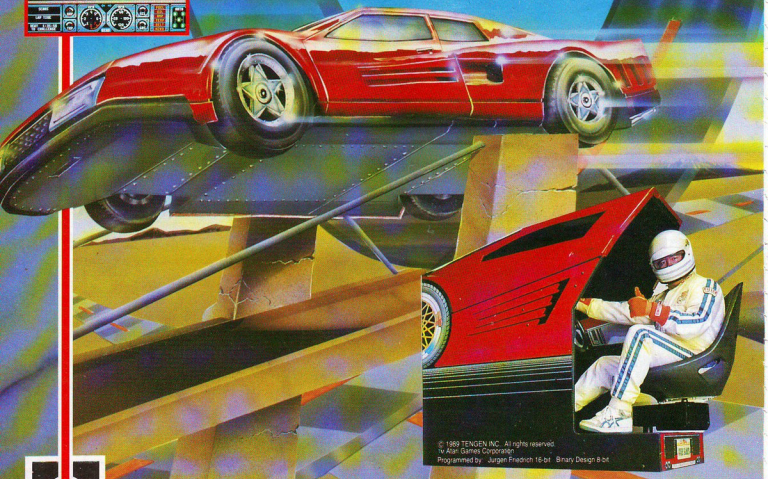

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Multidesk

MACHINE: ALL STs
PRICE: £29.95
FROM: ISM
CONTACT: 0983 864674

PRIME TIME

STORY
Elliott Stein
SCREENGRABS
David Collins

There's a ton of software in the States only gradually working its way over here. We take a look at three prime examples

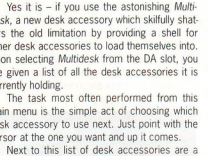
"That's impossible!" you cry: 'you can't load more than six desk accessories into an ST! Look – it says so in the manual, I even tried it once and my machine wouldn't boot. It's not possible!"

Yes it is – if you use the astonishing *Multidesk*, a new desk accessory which skilfully shatters the old limitation by providing a shell for other desk accessories to load themselves into. Upon selecting *Multidesk* from the DA slot, you are given a list of all the desk accessories it is currently holding.

The task most often performed from this main menu is the simple act of choosing which desk accessory to use next. Just point with the cursor at the one you want and up it comes.

Next to this list of desk accessories are a series of control boxes. Clicking on the CONFIGURE box takes you into a submenu where the user has full control over the program's performance.

You can choose to have the desk accessories return to the main *Multidesk* menu after



■ ***Multidesk* lets you use as many desk accessories simultaneously as your memory – and your wallet! – allows**

they are exited. Choosing PERSIST enables the last desk accessory used to come up the next time you select *Multidesk* from the desktop.

Groups of desk accessories can be set to autoboot automatically and files can be sorted by name or by the order in which they were loaded.

The buffer, which allocates memory to the desk accessories, can also be set and controlled within this menu. To control *Multidesk*, the buffer needs to be sized to the maximum amount of memory you wish to reserve for desk accessories. Once set, *Multidesk* loads as many desk accessories as the buffer can hold even while a program is running in the foreground.

This means you can load and unload desk accessories without having to interrupt a session and re-boot the computer. Loading desk accessories into *Multidesk* is elementary – just click on the LOAD ACCESSORY option and choose the files from the GEM item selector.

You can also save groups of desk accessories by using SAVE SET-UP. You can then load these groups by clicking on LOADSET-UP. One of these groups can also be set to boot automatically when you start up your ST.

So how many desk accessories can you load into *Multidesk*? It depends only on the amount of memory available. Writing this article on a Mega 4 ST, I was able to have the following magnificent collection of desk accessories loaded into *Multidesk*: *Thunder, K-Thesaurus, K-Rhyme, Keyword, G+Plus, Timeworks Partner, Maxpack, Crystal, C Panel+, Turbo ST, Keymaster, Calendar, Flexcessory, C-Man, Fast, Backpack, Igor, Flair Paint* and several useful PD and shareware programs.

Multidesk can even become an ordinary stand-alone program, running desk accessories as if they were programs with PRG or TOS extensions.

Is *Multidesk* too good to be true? Not only is it true, it's exceptionally reliable: it even runs certain sloppily programmed desk accessories which formerly didn't work! It also allows certain incompatible pairs of desk accessories to be loaded at the same time.

Multidesk is a must for any ST user interested in maximizing the ST's performance. If you're a desk accessory freak you won't want to miss out.

FORMAT RATINGS

Features **80%**
Lets you use as many desk accessories simultaneously as the memory allows

Speed **77%**
As fast as the desk accessories you're loading

Ease of Use **85%**
Self-explanatory operation – no need to look at the manual

Results **85%**
Even runs some badly programmed desk accessories that wouldn't run without it

Format Value **86%**
Especially if you own a two or four Mbyte ST

The Competition
No commercial programs available but check out the PD

Universal Item Selector

MACHINE: ALL STs
PRICE: £29.95
FROM: ISM
CONTACT: 0983 864674

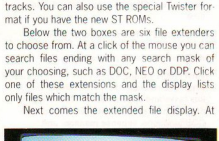
Everyone agrees that the ST's GEM file selector is clumsy. There are PD file selector replacements around, but *UIS* is far and away superior in every respect. It crams an extraordinary number of features into an ingenious shell and takes the tedium out of choosing files.

The program can be activated from the AUTO folder, or even from the desktop. So whenever you use the file selector within any program *UIS* comes up instead.

Exploring the item selector from top to bottom, we first come to two useful boxes, one which formats disks and the other which creates new folders. Using FORMAT brings you into another menu where you can choose to format disks in 9 or 10 sectors and 80, 81 or 82 tracks. You can also use the special Twister format if you have the new ST ROMs.

Below the two boxes are six file extenders to choose from. At a click of the mouse you can search files ending with any search mask of your choosing, such as DOC, NEO or DDP. Click one of these extensions and the display lists only files which match the mask.

Next comes the extended file display. At



■ **Ultra-fast disk copying and formatting. *UIS* takes the tedium out of file choosing and makes the GEM selector redundant**

ACCESSORY FEVER

Now the amazing Multidesk allows you to use as many accessories as you can get your hands on, what new ones are available?

All of them run successfully with *Multidesk*: buy them from the advertisers in this magazine or from your local ST dealer.

ART GALLERY – Part of the Codehead Utilities Package: use either as a slide show or file converter for NEO, DEGAS, TINY, ART DIRECTOR or SPECTRUM 512 files

BACKPACK – Multi-feature desk accessory including excellent address book, diary, calendar, calculator, notepad and more: it takes up little memory, being on a plug in ROM card

CMAN – Includes calendar, address book, auto dialler: runs separate TOS applications

DESKCART – DAs on a memory-saving ROM cartridge including diary, notepad, macros, control panel,calculator and more

EDITOR – Create customized icons and have them installed on the GEM desktop

FAST – Several desk accessories in one, including DOS window, text editor, ASCII table, calendar and card file database

FLAIR PAINT – Full functioning, feature packed art program in desk accessory form (or stand-alone). Contains most of the advanced features you'd expect from packages like Degas or Neochrome

FLEXCESSORY! – Allows 15 TOS and TTP programs to be loaded into a shell and used as if they were desk accessories

G+PLUS – Controls the superb replacement for Atari's GDOS. Automatically matches up the correct ASSIGN file to the right program – and speeds up the machine while doing it!

KEYWORD – Inexpensive thesaurus/word search program

K-RHYME – A rhyming dictionary in desktop: for all poets and graffiti artists

K-ROGET – The Roget Thesaurus in desktop, a must for every writer with a hard disk

K-SWITCH – Split your memory in two and operate two different programs at the same time

MAXPACK – Multi-featured program including file printer, printer configuration and the best macro program in town

PARTNER – Good multi-feature DA. Includes executive calendar/diary with "to do" lists, key tasks and appointments. Also has well-programmed notepad/mini-word processor, DOS functions, expense manager and address book

SELECTOR – Comes bundled with Universal Item Selector: allows you to access it from the GEM desktop and within programs which do not use the item selector

ST DOCTOR – Desktop disk and memory editor/manipulator with macro keys. Very powerful programmer's tool

THUNDER – Real time spell checker. One of the first major DAs and still one of the best

TURBO ST 1.6 – Speeds up the ST even faster than a blitter chip. And if you already have a blitter chip then... double zoom!

first glance it looks like the ordinary GEM display, until you use the scroll arrows at the bottom. Using the arrows, you can see the file or folder's name and size, as well as the day and time it was created.

SECRET FILES

On the corners of the display are the STATUS, LOCK and PRINT boxes. You can find the status of any file, folder or disk simply by dragging it to the STATUS box. Some of the important information available includes: how many folders/.files are on the disk, bytes used, bytes remaining and the number of files or folders in a folder.

Dragging files to the LOCK box, you can protect files by setting them to READ ONLY. You can also choose to have files HIDDEN, which means that they are still on the disk but do not-show up on file directories – a useful feature if, for instance, you want to keep your CV secret!

The PRINT box prints out either a disk directory or an unformatted copy of any file dragged to it.

To the right of the file display is a series of boxes containing DOS functions. You can drag one or more files to either the COPY, MOVE, RENAME or DELETE box.

The MOVE box is a convenient feature unavailable from the GEM desktop that allows you to transfer a file from one disk or folder to another without having to copy and then delete the original – always one of GEM's most laughable limitations. This is especially useful when copying files from folder to folder on the same disk because the file name is only moved on the directory listing.

To the right of the DOS functions are a row of small boxes representing each hard disk partition or floppy drive. It provides a fast, one click, way of instantly changing drives.

Thoughtful small touches have been provided in most of the functions to provide convenient operation. One of these is the search facility, with wild cards, which quickly locates files on a disk. Another is the fact that the *Item Selector* memorises the last path used. This small addition greatly speeds up many of the disk functions.

All in all, *Universal Item Selector* is an impressive programming feat which proves the point that the best place for DOS functions is in the item selector.

FORMAT RATINGS

Features	**85%**
Complete DOS functions in a user-friendly item selector	
Speed	**85%**
Ultra-fast disk copying and formatting	
Ease of Use	**90%**
Outclasses the GEM item selector	
Results	**90%**
Total replacement of GEM selector _ better than any PD alternative available	
Format Value	**90%**
Simply the best available	
The Competition	
There is no competition	

Neodesk

MACHINE: ALL STs

PRICE: £39.95

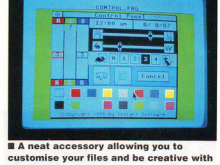
FROM: ELECTRIC DISTRIBUTION

CONTACT: 0480 496666

Attention Atari: scrap your GEM system and blaze this brilliant desktop on your ROM chips – and I mean immediately!

The inefficiencies of the GEM – not to mention the Macintosh – desktop become even more obvious after you use this thoughtfully designed program. It does everything you'd expect (and several things you wouldn't) an ingenious user interface/desktop to do.

It uses the same basic technology as GEM: drop-down windows and icons which represent disk drives, folders, files and the dustbin. But it goes further and provides different icons for RAM disks, hard disk partitions and even adds a print queue icon.



■ **A neat accessory allowing you to customise your files and be creative with your desktop**

The FILE window contains straightforward commands such as creating folders and closing/opening disks and folders – which can also be done the normal way by double-clicking the desktop's icons.

The window also includes a facility to show information on disks and files, quit *Neodesk* and format disks with nine or ten sectors and 79 to 82 tracks.

WINDOW DISPLAY

The next two drop-down menus are the SHOW and VIEW windows, which control the file display. Files and folders can be displayed as text or icons. But *Neodesk* goes a few steps beyond GEM, since text can be displayed in either small or large text and in one or more columns. You can also choose which items of information you want displayed in the window: a file's size, date or time.

The icons are more in the tradition of the Macintosh, since they can be customised for individual files and folders. It makes a difference to be able to identify a word processor from a database or game simply by the design of its icon.

The SORT window allows you to arrange files and folders by name, date, size, time or even no-sort (the order they are in on the disk). The final drop-down menu is packed with controls to customise *Neodesk* creatively.

The advanced INSTALL APPLICATION feature allows you to specify two file extensions, so that you can open a data file into an application without having to open the application first.

It also allows you to open up batch files, ➢

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like on a PC, corresponding to whichever Command Line Interpreter you assign to use with *Neodesk*. And if you do not possess a Command Line Interpreter, *Neodesk* includes a reliable public domain version called COMMAND.TOS.

Using a text editor you can execute a series of commands and open files by just clicking on a single BAT file.

The Edit ENVIRONMENT feature allows programmers to enter up to ten environment strings so that, when a program is executed, a special pointer is passed on indicating where the pointers are located in memory. Hence programmers can compile programs from the desktop.

The SET PARAMETERS menu allows you to customise *Neodesk* to your personal preferences. You can choose whether or not to confirm deletes and copies, have system messages, or have *Neodesk* in memory or installed on disk.

When running *Neodesk*, you are actually executing a special "master shell" program which in turn loads and executes the main *Neodesk* program. Choosing to have it installed on disk means that it only takes up a meagre 24K of memory while another program is running. Then, when that program is finished, the disk automatically re-loads the *Neodesk* work area.

There are also facilities to save the desktop, fix the 40 folder limit, install the desktop icons and neatly snap them to grids.

In the main desktop area file icons are displayed to fit evenly across the window, so you don't have to use bottom scroll bars: you only need to scroll files up and down.

Displayed where the bottom scroll bar is on GEM is the individual disk's volume label. This volume label is easily changed using SHOW INFORMATION in the FILE drop-down menu.

The corner boxes on the windows are similar to GEM – except in the lower left-hand corner is an arrow which drops the window to the bottom of any other open windows.

HANDY SHORTCUTS

Another impressive difference is that *Neodesk* allows eight windows open at one time, twice as many as GEM.

When dragging files and disks from one window to another,you can either COPY like the GEM desktop or MOVE, which allows you to move a file from one disk or folder to another without having to first copy and then delete the original.

The disk copying function provides a great deal of freedom. Disks can be copied using files only, which drags files from the source to the destination; with *format*, which reformats the destination to match the source; or *no format*, which performs a straight GEM desktop-like copy. And copying uses all available memory, so that there are as few disk swaps as possible.

The main desktop functions are also packed with handy shortcuts, such as CONTROL/HOME, which immediately switches whichever window is open to its root directory and therefore eliminates having to go up folder by folder.

File icons can even be taken from the window and placed directly on the desktop. This allows you to display your most often used programs on the desktop and run them without having to open a directory.

Neodesk comes with a Control Panel replacement, a printspooler and an Icon Editor to let you create or edit icons to custom fit individual files.

The drawing menu is well designed, to enable you to create amusing and attractive desktop icons. It can also load DEGAS pictures as a background to the desktop, warm or cold booting the ST from the keyboard and a diagnosis of system bombs.

Once you use *Neodesk* it's a certainty that you'll never want to suffer GEM again. ■

FORMAT RATINGS

Features 85%
Complete replacement of GEM desktop with all DOS functions

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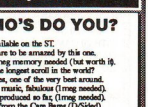

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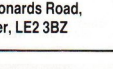

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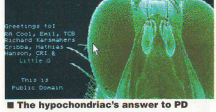
PUBLIC SPEAKING

STORY
Stuart Anderton
FRAME GRABBING
Kevin Hibbert

ST Format *investigates some of the treats and the terrors of the public domain*

In the public domain, the Atari ST stands head and shoulders above the rest. Most micros have a similar resource of "free" programs, but the ST has a truly comprehensive range of excellent applications and utilities.

There is nothing inherently "dodgy" about PD, although it has its fair share of dud programs. The authors of PD software have decided that their work might be useful to others, and out of generosity or laziness are not marketing it commercially. PD is free from copyright and can be copied and given out to whoever you like. The best sources are bulletin



■ **The hypochondriac's answer to PD software**

boards, public domain libraries, and of course these pages.

Another related area is "shareware.' This is software distributed on trust – if you try a program and intend to use it, you are expected to send a contribution to the program's author. Honesty is the best policy, because registered owners often get free upgrades and manuals with details of otherwise hidden features.

THE VIRUS THREAT

A common worry among PD buyers is the risk of catching viruses. ST viruses are among the most common, but with a few sensible precautions you should be OK. For a start, buy from the bigger libraries; they check each disk carefully for viruses as their reputation depends on it. Secondly, buy direct; PD passed from friend to friend is much more likely to be infected. Lastly, check the disks yourself with a virus killer – several are available in the public domain itself. If you follow this advice your ST should be at no risk.

MONKEYS & BALLOONS

PAGE SIX DISK ST191

Two simple, but enjoyable, games on this disk. In *Monkeys and Balloons* you guide a trampoline in order to keep a monkey airborne. The aim is to get the monkey to burst balloons floating past. I recall publishing this game as a type-in listing for the BBC B some years ago, and the whole office played it for weeks.

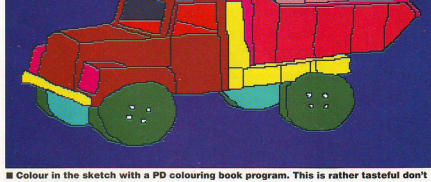
The second game is a variant on *Missile Command* – except you play on the desktop with disk drive icons as bases and every round a "smart bee" attacks!

★★★

COLOURBOOK

GOODMAN PD DISK GD364

Some of the best PD software around is for children, which is just as well because



■ **Colour in the sketch with a PD colouring book program. This is rather tasteful don't you think?**

RATINGS

★★★★★ Beg, steal, borrow
★★★★ Beg
★★★ Steal
★★ Borrow
★ Burn

Thatcherite market forces have failed to provide commercial software in this area. This disk contains an on-screen colouring book. Several outline drawings are provided, and using the simple palette you fill in the colours.

You can do freehand drawings with the simple editor or draw outlines in *Degas* format with another program. Kids will love it – and their playing doesn't kill a single tree.

★★★★

PARSET/SLIDESHOW

THE OTHER PD LIBRARY

Two li'l uns on this disk. *ParSet* is a techies' program which lets you set the ST's parameters including boot drive, memory size, verify flag and screen refresh speed. Such technicalities are lost on me but if you're dying to tweak the ST's innards, this is your program. There's even the original assembler source code thrown in.

The other part of the disk has a slideshow program for *Quantum Paint* files, with a couple of well-drawn examples thrown in. Slideshows are popular programs for reasons which baffle me. Still if you are a *Quantum Painter* and want to impress with the depth of your work, get in touch with The Other PD Library.

★★★

WORD EXTRACT

GOODMAN PD DISK GD427

Are you a cheat? Do you like word games? If the answer to both is yes – get this disk. *WordExtract* takes any word and finds all the other words which can be made from its letters. It also searches its dictionary for words which fit a pattern.

WordExtract managed to make some 459 words out of my name in around three minutes. The dictionary the program uses is apparently based on the Bible (also available in PD, see ST *Format* 11), which doesn't explain why it offered Aberdeen as a partial anagram at one point – unless there's a book I missed at Sunday school.

★★★

STUFFED #3

FLOPPYSHOP ST

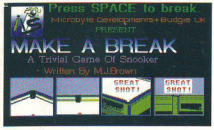
I reviewed issue 2 a couple of months ago, and by the time you read this issue 4 will be out, but this copy of *Stuffed*, a disk magazine, is so much better than the last it deserves mention. Most of my original reservations – particularly speed and legibility – have been overcome and *Stuffed* is worth getting hold of for its mixture of news, and reviews combined with actual screen grabs of new products. Even the readers' gallery has improved, and it features some creditable drawings. If they would only stop justifying the text!

★★★★

MAKE A BREAK

PAGE SIX DISK ST184

I expect you've seen the *Give Us A Break* quiz machines in your local hostelry, and this is a PD version of the trivia game. The object is to play a game of snooker by answering trivia questions – sport for the red, TV for the black, science and nature for the pink and so on. Unlike the pub game there is no cash prize at the end, but *Make a Break* scores over every other ST trivia game in one area – the questions. I reckon myself to be a competent trivia player but these questions caused me a lot of



■ **Tough questions from *Make a Break***

headaches. Recommended for quiz nuts. Oh, and who was the first woman newsreader to sing on TV?

★★★★★

BATDEMO

SOUTH WEST SOFTWARE LIBRARY DISK 563

It was inevitable I suppose that the hype surrounding the movie would eventually invade the public domain. Thankfully the impressively long sample which accompanies this demo makes a pleasant change from the Bomb the Bass-style "music" which is usually forced metallically out of the ST's sound chip.

The problem with this demo is the visuals – a rather tedious oscillating Batsymbol and a single line of scrolling text is all you get. Still, it's worth it for the music.

★★★

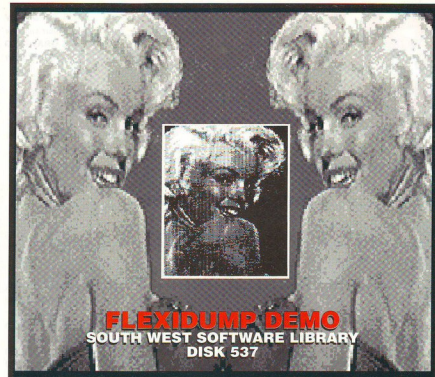
BUDGIE TOOLKIT

ST CLUB DISK BPR01

Budgie UK are the main suppliers of PD games for the ST. Most of their work is excellent and this disk contains some of the "trade secrets" they use while programming.

The disk includes machine code routines to handle sprites, disk operations, scrolling, joystick interfaces – everything in short that you need to program your own games. There are more than 60 routines included which Budgie reckon took three years to program. Recommended for budding games programmers everywhere, this disk requires a double-sided drive.

★★★★★



***Flexidump* proper is a powerful utility for printing out *Degas* and *Neochrome* pictures on a dot-matrix printer. This cut down version, although relatively limited compared to the commercial product, is still a very valuable program. It allows you to control the scale and size of the output picture (*Flexidump* proper allows total control, but the demo's fixed preset sizes are good enough for many applications) and produce accurate dumps of colour pictures. You can control print density and enhance the image, and both nine and 24-pin dot-matrix printers are supported.**

The inset shows the quality of the printout from the *Degas* file above. A handy utility which is bound to whet your appetite for the real thing.

★★★★

TENNIS

SOUTHEAST 40PDL

40PDL, one of the dozens of back-bedroom public domain libraries, answered the call for the best of PD by sending a PD tennis game. Games are a weak area of the public domain, although Budgie UK do some sterling work, but this tennis game really is a level above the usual run.

With joystick, mouse or keyboard control and one or two players you simply run around

■ **Nothing to fault in this quality PD game**

the court and hit the ball back over the net. Sound easy? It's not, but it is great fun. With nice graphics, sound and movement this is one of the best PD games I've seen for ages.

★★★★★

SUPPLIERS

ALPHA COMPUTING,32 Meadow Drive, Halifax, W Yorks HX3 5JZ

AWESOME DEMOS,3 Mason Road, Seaford East Sussex BN25 3EE

B SOFT, 33 Corsham Road, Calcot, Reading, Berks RG3 5ZH

BUDGIE UK, 5 Minster Close, Rayleigh, Essex SS6 8SF

COMPUTER CONNECTIONS, Ashlaw House, Euximoor Drive, Christchurch, Wisbech, Cambs PE14 9LS

ENTERTAINMENT SOFT, 4 Trelawney Drive, Tilehurst, Reading RG3 5WQ

FLOPPYSHOP ST, 50 Stewart Crescent, Northfield, Aberdeen

GOODMANS PDL, 16 Conrad Close, Meir Hay Estate, Longton, Stoke on Trent, Staffordshire ST3 1SW

LITTLETON PDL, 3 Blacksmiths Close, South Littleton, Evesham, Worcs WR11 5YG

MPH, 10 Chandlers Court, Eaton, Norwich NR4 6EX

PAGE 6, PO Box 54, Stafford, ST16 1DR

PARADISE COMPUTERS, 9 Westfield Crescent, Brighton BN1 8JB

PDLIBRARY, 68 Delancey St, London NW1 7RY

RIVERDENE PDL, 63 Wintringham Way, Purley on Thames, Berks RG8 8BH

ROUND TABLE PD, 7 St Andrews Rd, Warminster BA12 8EP

SOFTVILLE PD, Unit 5, Stratfield Park, Waterlooville, Hants PO7 7XN

SOUTHEAST 40PDL, Capel, Ipswich IP9 2HZ

SOUTH WEST SOFTWARE LIBRARY, PO Box 562, Wimborne, Dorset BH21 2YD

ST CLUB, 9 Sutton Place, 49 Stoney St, Nottingham NG1 1LX

ST UK, 1 Bartholemew Road, Bishops Stortford, Herts CM23 3TP

THE OTHER PDL, 108 Kenmare Road, Wavertree, Liverpool L15 3HQ

WIZARD PD, 178 Waverley Road, Reading, Berks RG3 2PZ

ST UK Public Domain & Shareware Software

FONT DISKS

● A13 : Publishing Partner disk 1: 6 fonts: Hudson, Columbia, Devoil, Thames, Spokane and Saturn.
● A38 : Publishing Partner disk 2: 6 fonts: Caligrifly, Elegance, Courier, Roman Bookface, Westside and Avant Garde.
● A95 : Publishing Partner disk 3: 6 fonts: Artist, Broadway, Letter Gothic, Oriental, Ultra Block and Wilkes-Barre.
● 1.27 : Publishing Partner/PagePStream disk 4. 1 PP font: Creative. 5 PS fonts: Futura, HLV8, Lubalin, Script and HAL.
● 1.37 : GEM font disk 1. Over 60 GOOD fonts, should work with Timeworks, Fleetstreet, Easy Draw etc.
● A15 : Calamus Fonts disk 1: 10 fonts: Cursive, Facade, Fura, Greenyz, Hebrewy, Manholly, Math, Pelophoy, Silicy and Steely.
● A135 : Font Master GDOS utility.

FONT MASTER ON DISK A135

● A63 and A64 : FontKit V3.31 Epson, Degas and ST font editor.

LANGUAGE DISKS

● A36 : Clip Art 1 - Degas format - mainly animals, sports. Walt Disney and cars.
● A37 : Clip Art 2 - Degas format - mainly Christmas, animals, military, Atari, Commodore, flags and Zodiac.
● A55 : Clip Art 3 - Degas format - mainly 1930's trademarks.
● A77 : Clip Art 4 - Degas format - mainly Alphabets, Easter, Halloween, Valentines and Jewish.
● A78 : Clip Art 5 - Degas format - mainly Pixies, titles, Halloween, Valentines and Jewish.
● A79 : Clip Art 6 - Degas format.
● A80 : Clip Art 7 - Degas format - mainly whimsical and cute and 2 good alphabets.
● A115 : Clip Art 8 - Degas format - mainly Atari, Walt Disney, Garfield, painting hands, robots, hands.
● A116 : Clip Art 9 - Degas format - mainly faces, Christmas, horses and war.
● A117 : Clip Art 10 - Degas format - mainly animals.
● A129 : Clip Art 11 - 42 GEM pictures.
● A130 : Clip Art 12 - 47 IMG pictures and 5 .GEM pictures.

APPLICATION DISKS

● A87 : Home Accounts: v1.0 by David Pullin. Up to 3 different Statements may be held at once, up to 150 entries per statement. Regular Income/Outcome Section with automatic updating. A note pad feature with up to ten different notes. An alarm section. Able to give sections passwords. Saved files are encrypted for extra security. Keeps check of the time and date. Colour version in STOS.
● A96 : DOUBLE SIDED Disk. Sheet v2.0. powerful all features spreadsheet; includes documentation and tutorial. Lotus compatible. 1700 rows by 280 columns. Sheet is also available on 2 single sided disks, A96(1) and A96(2) if preferred.
● A121 : FOOTBALL - Sport Results Program - v1.0 by B.Campbell - very good includes a database of all matches played by England 1872 - 1970. Program claims it is 'Be more accurate than the common call ones.
● W 2 : StWriter with document files, tutorial etc. 2 versions 1.75 and GEMtext based 'Elite' version of STWriter. the same program that can be switched from GEM mode and menus to a non-GEM version. usefull manual and quick reference etc. with new features in very good word processor.
● W 5 : Micro-Emacs editor V3.9Z5 full screen editor includes tutorial and manual files.
● W13 : DOUBLE SIDED DISK. STWriter Elite V3.0_English. German and French versions. Spell checker, thesaurus etc.
● WP21 : 4 DOUBLE SIDED DISKS. Word processor, document processor and typesetting system. TEX has its own programming language, handles equations and diagrams, and has a large set of typefaces. This is a very powerful piece of software. TEX is not a wordprocessor, you will need a text editor such as Micro EMACS (see W5). Requires 1Mb RAM and comes on 4 double sided disks with a Mega Pack price of £10.00!

UTILITY DISKS

● A31 : This disk contains the following 1st Word printer driver files: SG10STAR, XXP19PC, PP10PS, PP24DRAF, EPHEBREW, ST130, ESFX80, PANI09I, OLYMPIA, EPS_RX80, LQ60-G, EPSON24, EPSON_LQ, EPSON_FX, EPSON_MX, LQ400, LX80-G, PANI24PR, SPD136P, SPD136PHI, ESQ136P, QUME2, SQ10TEWP, PROWRIST, SQ10IBM, OKI92ASCII, 1STNX1, SG10-1ST, SLMAN80, SLMAN24, SLMAN24HI, SLMAN24LQ.
● A49 : Hard Disk disc 1: Directory counter, Gem Soft a 40 folder hd. Hunt Auto, Sidekick, Turtle backup v1.0 and UnFlynn restore v1.
● A52 : Hard Disk disk 2: FolderXXX allows you to specify up to 999 folders - a 40 folders fix, an excellent directory lister, Hard Disk install, Hard Disk install, and other useful utilities.
● A41 : Monochrome emulator version 5. Run monochrome programs on a colour monitor. Also has a utility to transfer files between Macintosh fonts to ST GDOS format.
● A51 : This disk is packed full of Comms programs. They have all been Arc'ed and Lzh'ed to save space. The following is a list of the ARC files: ARCMAIL, BMODEM, Kermit, Term, Terminal, My Term, STerm, Con-ST, ST-Talk, Term-Z, Uterm, GEM Term and Xterm. Also included is Term. Also on the disk a program to unARC them.
● A81 : Double Sided Disk. Format v3.01 ST. Disk formatter 9/10 sec. tor, 80/82 tracks, regular/fast format. Can format Spectre 128 disks, place MSDOS/TOS boot sectors, configurable boot program

DESKTOP ACCESSORY DISKS

● DA1 : 14 DAs including: the excellent Intasect RAM disk, Texas instruments calculator and Tiny Tool.
● DA2 : DOUBLE SIDED DISK. 12 Calculators. Screen protector, MAGIC RAM for DAs.
● DA3 : Dozens of DAs including W/P tools, Diskman - disk utility, X utilities, the very original Mr Boing and many more!
● DA4 : Dozens of DAs including Caps key On/Off, Read Only Control, Lost Items Finder, Font Changer, Fax Pro, Thomas which controls menu selecting, Speed- Mouse - sets the speed of mouse movement - excellent.
● DA9 : DOSACC V2.2. This program has so many features that we just have to list them. Suffice to say that it basically it displays just about everything the user needs to know, and allows the setting of most ST and printer configurations.

GAME DISKS

Budgie UK P.D. Licenseware games:

● G17 - Damonoid - arcade.
● G19 - Blitz 9! - arcade.
● G33 - Doctor Boris and Puzzler - TNT
● G38 - MoneySpinner slot machine.
● G40 - Zenith - arcade.
● G41 - Zenith 2 - arcade.
● G54 - Line of Four - connect.
● G56 - Make a Break - Quiz.
● G57 - Pontoon - Cards.
● G60 - Operation Angelica - Battle.
● G65 - Impulse - short 'un up.
● G66 - Space Bid.
● G70 - Space Blob - Platform type.
● G18 - Football - speculation game
● G20 - Othello - board game
● G35 - Tycoon - Adventure
● G39 - Ace Invaders - arcade
● G43 - MakeStron - arcade.
● G45 - Zephid and Gold Rush - labyrinth.
● G55 - Word Puzzle generator.
● G57 - Parabellum - platform.
● G58 - Pontoon 2 - Cards.
● G64 - Bandit - One armed bandit.
● G66 - Carrier Attack - Battleships type.
● G69 - Shoot 'Em Up.
● G71 - Scary - Platform type.

BUDGIE1 - Budgie UK's 6800 Assembler library of routines.

NOTE: Only G20 and G18 work in colour and monochrome. All the other Budgie games are colour only. We always have the latest Budgie games as soon as they are released.

And some of the rests:
● G11 - Asteroid - colour asteroids space invaders game - excellent shoot 'em up! Farm yard colour scenery and guessing game very very good. Also Invaders - colour invaders game. Qshi! computer version of Othello - excellent.
● G23 - BOLO! Brilliant game in the Arknoid mould, requires 1Mb RAM. We have over 80 levels for this game!
● G50 - Spectral Scrorcy an excellent colour only game of wizards and sorcerers.
Also 3 other games: Monkeys and Balloons, Race Card and Refer.
● G53 - Fruit Machine by Live and Programming. Colour only.

GRAPHICS DISKS

● GR3 : MASTER Painter - excellent graphics program works in ALL resolutions in NEO Degas and Doodle formats. Has multiple screens 6 on 1/2 Mb, upto 24 on 1Mb. Can have enough RAM animate between these multiple screens, all the usual tools plus rotate to any angle, skwise-, mirror-image, shear, perspective, fill, zoom, font converter, very well laid out and designed- full GEM this is a truely brilliant program. Fill requires a bi 0nDgo.
● GR6 : Degas disk - 155 fills, 10 brushes, 7 fonts, 20 printer drivers including NEC P6 and P6 Epson. Full colour you should be able to use this for STAR LC-10), plus programs to manipulate Degas pics.
● GR11 : Disk full of picture utilities - Tiny Stuff v3.4 and Tiny View v4.21. Pic Switch v0.7, NEO2Mono, Convert, Mono2Medium, Medium2Mono, Degas screen to disk savers.
● GR15 : JIL2D CAD drafting program from Jesus Is Lord corp. Looks good and is very complicated. This disk is double sided and requires 1Mb RAM and monochrome monitor.
● GR16 : Font Converter, Print Master/Degas converter, NEO/Degas/Tiny/IFF/SPECS12 to NEO/Degas/IFF convertor. IMG/AIM to Degas. Spectrum IMG/AIM to Degas GIF Dumper. Spectrum 512 - SPC/SPU to GIF convertor and Spectrum 512 SPC, SPS and SPU Viewer.

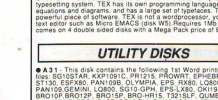
LANGUAGE DISKS

● L6 : Toy Prolog. German full documentation, demos and source codes.
● L7 : Kisp version 2.0 includes documentation.
● L9 : ST ICON version 5.3, based on SNOBOL4. Complete documentation.
● L10 : Little Smalltalk. Includes Smalltalk language, full manual, example progs. and editor. See Jan and Feb 1988 issues of Personal Computer World for more details.
● L13 and L14 Modula 2 development system V1.0 from Arla sys. Comes on 2 disks. Full Modula 2 compiler, linker, librarian, assignment tool and Macro Assembler. Requires minimum 520St with 1 drives OR a 1040ST. This is a 2 disk set. Both disks are needed.
● L15 : Supaboot C Compiler. A complete implementation of the C language as defined by Kernighan & Ritchie and prevailing practice. This package includes a compiler, optimizer, assembler, and linker, as well as several other associated utilities. L15 is a double sided disk. Supaboot C is available on 2 single sided disks @ £5.60 each called L15a and L15b. This disk is NOT for the beginner as it is poorly documented, but it is still an excellent disk.

MUSIC DISKS

● M15 : 16 Voice Sequencer. A fully working MIDI sequencer by Henny Cosh, includes. Multi-Voice recording using seperate MIDI channels or programs, each MIDI keyboard and/or velocity ranges. Variable resolution Map of 8 Voices on keyboard. Complete music score cut/pasting of any music in the Map. Simple editing/play mouse and MIDI keyboard on blocks down to hemi-demi-semi-quavers with no MIDI event lists! Sections for naming passages plus setting Time signature, tempo, and local quantization.Variable resolution metronome on any MIDI channel, program, note, velocity. May be driven by external MIDI clock. Full Voice/Block copy, move, quantize, randomize, transpose, velocity update. Filtering of controllers, note ranges and velocity ranges on input, output or by direct manipulation. Handles on all operations that change the music and Through channel specification for each voice. All MIDI notes/ channels/ programs may be input from a MIDI keyboard, or typed on the computer keyboard. MIDI channels and program numbers base may be selected to be 0 or 1.

16 BIT SEQUENCER ON DISK M15



DEMO DISKS

● D122 - DOUBLE SIDED DISK. The Union demo! The best demo yet on the ST. Demos from TEX, TCB, TNT crew, Delta Force, The Replicants and Level 16. This demo is absolutely brilliant! It requires a colour screen and a joystick.
● D123 - DOUBLE SIDED DISK. Snow Man demo. Great Digitised sound and picture demo of the snowman story. The song 'Walking on the air' and dropped pictures, leaving the whole story. Excellent. Requires colour screen, and 1Mb RAM.
● D125 - DOUBLE SIDED DISK. The CareBears Cuddly demos. The CareBears old some demos on the Amiga Union demo. Here they have created the demos on the ST. I don't know how much move it on pre-pelled than about the screen landing in front on the entrances to the demos. The quality of the demos is amazing and we would go as far as saying better than the Union demo! This is a mega mega demo disk that requires a colour screen.
● D136 and D137: 2 DOUBLE SIDED DISKS. DynaCAD product demo. 2 S disks each containing fully featured CAD program. Fully working demo with save and output taken out. Requires 1Mb RAM and a monochrome monitor.

Most of the disks in this advert actually contain more files than is listed. The ad also only shows a small portion of our catalogue, so for details of the service and a free copy of the catalogue send a Stamped S.A.E. (If youre ordering you will get the latest catalogue). Disk prices: 1 to 5 @ £3.00 each, 6 to 10 @ £2.75 each and 11 or more @ £2.50 each!

All prices are fully inclusive. To order please send a cheque, postal order payable to ST UK or credit card details to:

ST UK, 1 BARTHOLOMEW ROAD, BISHOP'S STORTFORD, HERTFORDSHIRE, CM23 3TP. TELEPHONE 0279 757692.

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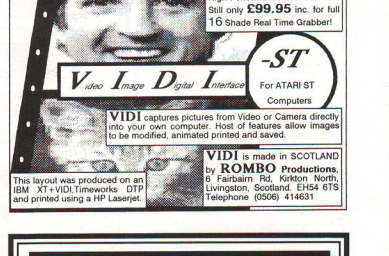

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TAKE CONTROL WITH CYBER 2

Get your spline in a twist and buzz off on our second **Cyber Series** *tutorial as we tackle the tricky subject of dynamic movement*

STORY *Mark Pickavance*
FRAME GRABBING *Kevin Hibbert*

In last month's tutorial we began, you'll no doubt recall, by using the *Cyber Control* language to manipulate an object in CAD. We exploded the Channel 4 logo ("as seen on TV") and then returned it to its original state. This type of movement is not difficult to produce, because the objects revolve around a static centre. This month I want to explore more complex motion, again using simple *Cyber Control* programming.

DYNAMIC MOTION

To achieve more dynamic motion we must introduce a mobile centre of rotation. Using a cube to demonstrate this, you can see exactly what happens. The cube progresses around a circle, and as it moves in this pre-determined arc it spins on its own axis (see figure 1 over the page for code: the bee on this page is from a public domain program that's on this month's Cover Disk).

After loading the cube the first task is to spin it on its axis. Then move it away from the centre of the "Universe" before rotating it about the centre again. The coordinates of the centre are 0,0,0. In the example code I load the cube for every frame of the animation. To achieve movement, variables are used to increment the amounts of rotation in two different motions. Those of you who understand *Cyber Control* will no doubt be exclaiming, "That's stupid! Why don't you just rotate the same cube a little more each frame?"

This was my first thought, but after experimenting I discovered that it was an inaccurate method and liable to a creeping mis-alignment. The cube "jumped" at the join between the start and end points of the animation. I assume this technique didn't work because of the integer maths used for speed in parts of the CAD code. True floating point maths is best accomplished with FPCPs (Floating Point Co-Processors) – but the ST does not cater for one. If Tom Hudson ever considers writing a new version he might take account of the one you can put in the new TT machine.

From a critical viewpoint this *Cyber Control* example may not be the most elegant way of producing this kind of motion, but it does work. The cube I was using was created for me by the "Primitives" part of CAD. I could have manufactured it within my code, but thought you would prefer shorter listings. If you require a more colourful version you can re-colour individual facets using *Cyber Sculpt*. Alternatively you could tumble a completely different object.

The scene is animated at over 72 frames, the two rotational factors both being 5 degrees. If you want to make a shorter sequence, try decreasing the frame number to 32 and increase the rotation to 10 degrees. You may discover because of the nature of CAD's animation files that the shorter animation is not half the size.

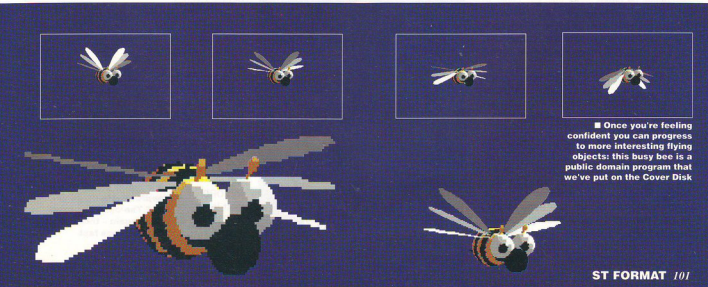
ANIMATION LIMITATION

The limitation on animation size is usually dictated by the available disk space. This is because CAD virtually uses the disk as workspace and saves out its animation frames as it produces them.

Only when you want to see the end result do you need to load the entire animation. Logically the largest DLT file you could produce (without a hard drive) is the size of a double-sided disk. This is about the maximum you could load and play in one MByte of memory.

The animation format DLT is compressed, but better compression is possible using the SEQ format. To convert the DLT file into SEQ you can use either *Cyber Paint* or *Cyber Studio*. This all assumes that you have enough memory to load the DLT version into these packages. If you are using CAD then you must have one MByte, and hopefully a double-sided disk drive.

It's possible to generate such large animation you can't load it into ANIMATE.PRG: you'll have to experiment with CAD to find out how big this is. I'm being intentionally vague *(we noticed – ed)*, because the amount of RAM left after initialisation differs depending on which version of TOS your machine has. You may produce an ➢



■ **Once you're feeling confident you can progress to more interesting flying objects: this busy bee is a public domain program that we've put on the Cover Disk**

GOING CUBOID

animation sequence which doesn't run on your friend's ST or vice versa.

THROWING THE CURVED BALL

Let's return to *Cyber Control* and tumbling objects. A powerful inclusion in the *Cyber Control* repertoire is the SPLINE function: a "spline" is a curved line. And that's exactly what CAD generates – a curved path through three dimensional space. It's easy to define one: just give a sequence of key points to the spline routines and a continually curved path will be calculated through these points.

You may have as many as 20 defined points, from which the spline function can generate as many positions along the curve as you need. An additional control is available for three different types of spline.

The "Linear" spline has straight lines between the key points. The "Approximate" spline (use "8" type) is a perfect curve – not necessarily passing through all key points.To do that you must use the third type, a "Smooth" spline. It passes through all the points but might make some sharp turns to achieve it. Once defined the spline can be used as a flight path for an object or camera.

One of the more bizarre uses of splines is in growing curved objects from templates. Making objects using the *Control* language is a subject we shall cover in another article.

When defining a spline remember that our "Universe" is only 8,000 units wide, high and deep (+4,000 to –4,000). I created a sketch on graph paper of the view from above, showing the required path.

From this I found I could locate the points on the path needed to produce the spline. The spline I created is an approximate figure of "8". For animation purposes I simply used the cube again – this makes render times quick (see figure 2).

The spiral motion of the cube is a smooth point to point transition. The spline function produces an array accessed in the MOVETO line, positioning the tumbling cube along the spline. I decided that 72 frames is a long enough animation loop, so the spline has 73 points on it. The animation loops correctly because start and end points for the spline are the same.

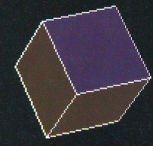
Over the course of 72 frames the cube tumbles over once – bringing it back to its original position (frame 1 or 73, whichever way you want to think of it).

An interesting variation on this theme can be created by driving more than one cube, so that you get a progression. The number of cubes you choose must be based on how much space exists between individual frames. You don't want the cubes to overlap and destroy the visual effect.

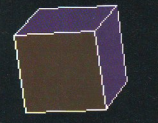
If you experiment, I suggest you copy this code and then try some variations – such as having a selection of objects following the spline or giving a different direction to the tumble of each object.

If you're feeling confident, attempt this experiment: two objects, a sphere and torus, follow the spline in opposite directions and at the centre of the figure "8," the ball should pass through the hole in the torus. Phew! ■

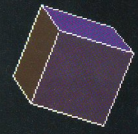
Just moving the objects can become dull, so next month we'll be animating the cameras as well



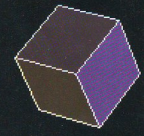
A CUBE TRANSVERSES



A CAREFULLY PLOTTED



AND SMOOTH COURSE



THROUGH A FIGURE OF 8

1

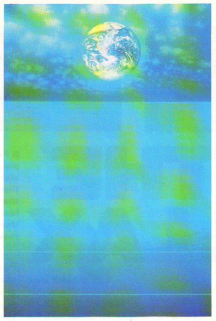
```
NEW
; Clear the system of all objects
WATCH ON
View OUTLINE:DRAFT
Zoom 250:Perspec 900
; More parameter setting
CAM1 10,20,0
RSTART "CUBE1",M
counter = 0
counter2 = 0
factor = 0
For loop = 1 to 72
LOAD3D"CUBE.3D2"
ROTATE 0,factor,0
If factor = 180 THEN factor = 0
factor = factor +5
MOVETO 1000,0,0
ROTATE 0,0,counter
ROTATE 0,0,counter2
If counter = -180 THEN counter =
0:counter2 = -180
; this line is in because ROTATE will not
take values < -180
counter = counter - 5
SUPERVIEW
;VTOBGND Put this line in to get a trail
effect
RECORD
next loop
RSTOP
END
```

■ **A cube progresses round a circle, and as it moves in this pre-determined arc it spins on its own axis**

2

```
NEW
; Clear the system of all objects
WATCH ON
View WIRE:DRAFT
Zoom 250:Perspec 999
CAM1 10,15,0
; lets define a spline
; first the points on the spline
DEFPT 1,0,0,0
DEFPT 1,600,1000,0
DEFPT 1,1100,2000,0
DEFPT 1,0,2500,0
DEFPT 1,-1100,2000,0
DEFPT 1,-600,1000,0
DEFPT 1,0,0,0
DEFPT 1,600,-1000,0
DEFPT 1,1100,-2000,0
DEFPT 1,0,-2500,0
DEFPT 1,-1100,-2000,0
DEFPT 1,-600,-1000,0
DEFPT 1,0,0,0
; now the actual spline
DEFSPLINE 1,73,B
; Animation ON
RSTART "CUBE2",M
factor = 0
For loop = 1 to 72
LOAD3D"CUBE.3D2"
ROTATE 0,factor,0
If factor = 180 THEN factor = 0
factor = factor +5
MOVETO s1x(loop),s1y(loop),s1z(loop)
SUPERVIEW
;VTOBGND Put this line in to get a trail
effect
RECORD
next loop
RSTOP
END
```

■ **A spline created as an approximate figure of "8." The cube has been used again – this makes render times fast**



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Format 11 Section Double sided with 80 tracks	67 Seconds-818176 bytes	Not Possible
Format 11 sectors Double sided with 81 tracks	69 Seconds-828416 bytes	Not Possible
Bad read swap	Possible	Not Possible
Copy & Format in 1 pass	Possible	Not Possible
Virus detect during copy	Possible	Not Possible
Save defaults to disk	Possible	Not Possible
Verify on/off option	Possible	Not Possible
Select Tracks/Sectors	Possible	Not Possible
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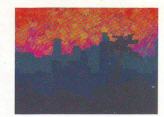

TAKE THE PARALLAX VIEW

STORY *Mark Pickavance*
SCREEN GRABBING *David Collins*

■ **Perfect parallax using only three planes. Originally each plane is the same size. Using the "Z" position shrink some of them down in perspective. Move them at the same speed, overlay the results –and faster than you can say Walt Disney... Use as many planes and as much detail as your memory can handle**

A good selling point for shoot-em-ups is "parallax scrolling." But what exactly is it and how do you get the right perspective?

To understand parallax we must first go way back to the fundamental laws of perspective. As we all know things appear smaller the further away they are, and because of that they also give the impression of moving smaller distances.

Imagine travelling at 125 miles an hour on a train. Any object near the train flies past, but houses on the horizon are hardly moving at all. If we look at the way a conventional animator might create a parallax scene we can understand more about how we can produce computer parallax.

MIGHT AS WELL JUMP

As everyone knows, normal animation is created by filming thousands of individual drawings. To reduce the workload for scenes with complex backgrounds, characters are often painted onto Cel – clear acetate sheets so they can be overlaid to form a composite image.

For good animation, "registration" is very important. In other words, the drawings must be aligned very accurately or the character "jumps" around unintentionally. The method of this "registration" is the peg bar, a simple mechanism consisting of a metal strip with three pegs sticking out of it – two flat and one round. The animation paper or cels are punched with corresponding holes. The animator sticks the peg bar down onto his light box - an illuminated drawing surface enabling him to see through several layers of paper.

By using this apparatus, animators can see several frames simultaneously, allowing them to relate the movement of single drawings to corresponding frames. It also makes tracing of existing shapes easy.

"What," you are asking, "does this have to do with parallax?" The answer is the peg bar, because this has another use other than aligning the drawings when they're created.

After the animation is complete and painted onto Cel it is ready to be shot onto film with a special camera called a Rostrum. The Rostrum camera is mounted vertically, pointing down onto a flat surface on which are a set of pegs. The animation can be aligned for shooting with the same mechanism. Some Rostrum cameras possess more than one set of pegs, and they can move the section of metal that the pegs are embedded in.

HARD CEL

In a typical cartoon scene the hero is pursued down a street. He stays in the centre of the screen as the background slides by and occasionally a lampost whizzes across the foreground.

We've all seen it done. The sky doesn't move and the man doesn't move either. Instead the houses on the street that he's running past move slowly and the lamposts in the foreground move quickly, each on a separate and controllable level. The graphics are placed down in a precise order. The sky is stuck down and never needs moving. The houses move on the top pegs and must be moved a small amount every frame. The character uses the bottom pegs, and while his run is animated he can be scrolled left or right if he accelerates or slows down. The lamps go on the bottom pegs over the character's Cels. The movement has been precalculated and animated: you haven't any more pegs to put them on a separate one.

For every frame, the cameraman must change the Cels that change and move the pegs that move. If it is a long scene the houses may be on a continuous loop so that long drawing is not required.

CUE FX

There are several packages that produce the same effect as this but without all the pegs. Probably the best of these is *Cyber Paint*. By using the "FX" menu it's possible to pan images at different speeds and thus produce parallax. However, you may find that getting the speed just right is difficult. Fortunately there is an easier way. In my example I have drawn a series of graphic elements which are on separate levels in depth. They were all originally the same size. Using the "Z" position I was able to shrink some down in perspective. If I now move all of them at the same speed and overlay the results I get perfect parallax. The perspective code within *Cyber Paint* has done all the calculations of speed for me.

The only snag is that when you push the screen away into perspective it no longer fits across the screen – so you must repeat the ADO/fx sequence several times (with an offset) to cover the horizon.

To demonstrate this, the example I created only has three levels, but this is not the restriction of the software. You can create as many levels as you wish; the more you introduce the greater the effect. If you examine my parallax screens you will notice that I have used flat colours and no detail. The reason was to save memory. Consisting of 59 frames, it takes up 300k as an SEQ. file.

The effects produced are only two dimensional parallax. To achieve "true" or three dimensional parallax you must use real 3D software like *CAD 2.0* or *GFA Raytrace* but for games or demos the 2D version is more than adequate. ■

RAYTRACE MOVES ON UP

GFA are now shipping V. 2 of *GFA Raytrace*, reviewed in October's *ST Format*. "This is a German product," Les Player told me, "and the German ST market is dominated by MONO software. So *Raytrace* did not sell in Germany. It has, however, sold very well in this country and France. We contacted GFA in Germany and asked them to fix a few bugs and improve a few features – they responded with version 2."

From the quick test I gave the new *Raytrace* I can report that not only have they fixed all the bugs, but they have also speeded the main raytracing code up by about 40%. This makes render times very reasonable – it makes *Sculpt 4D* on the Amiga look very slow.

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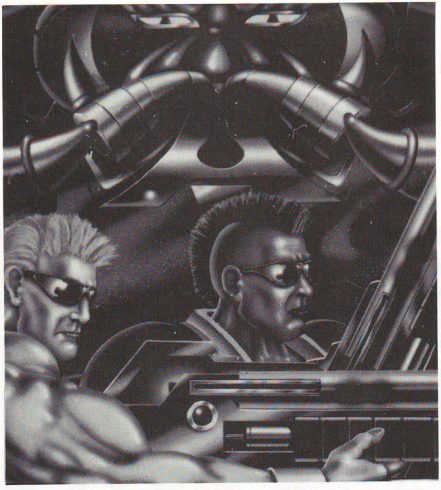
GAMEBUSTERS!

Sometimes it's hard to be a gamester, giving all your time to just one game. You've had bad times – now cheat!

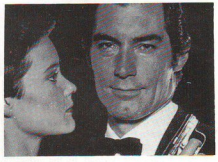


FORGOTTEN WORLDS

Struggling with the various levels of *Forgotten Worlds*? Struggle no more, because **the mysteriously Christian name-less R Headley of Macclesfield** has found a nifty cheat mode.

On the title screen hold down the shift key and type ARC. Now release the shift key and press the help key to start the game. Pressing S while playing the game takes you straight to the shop; pressing N moves you to the next level; and L allows you to skip a level.

The boy Headley also done good with this snippet for Llamasoft's *Gridrunner*. Typing in **PINK-FLOYD-ARE-GODS** *(oh purlease)* during play gives you infinite lives, *maaaaan*.



LICENCE TO KILL

John Lai of Margate has spent many hours poring over his keyboard to solve Domark's *Licence to Kill*, and he'd like to share the fruits of his labour with you – what a nice guy.

Level 1: In the first scene, destroy the escaping jeep as soon as possible. To destroy it, stay in line with it and point the nose down by accelerating. Remember to stay on the road, otherwise Sanchez's men (boo!) will get you.

Level 2: Stay away from the open door by taking cover close to the walls. Running toward the enemy can force them to run away, but this doesn't get rid of them altogether. Shooting the oil drums conserves bullets, but keep well back because they destroy everything in their vicinity.

Level 3: To grab the tail of Sanchez's plane (boo!), keep away from the clouds and press the fire button to attach the tow cable. Don't do this until Bond (hurrah!) is close enough, but make sure you fire in advance to allow for reaction time.

Level 4: Stay under water when boats and snipers are around. Keep a full tank of oxygen and don't surface unless divers appear. Try to get a harpoon gun by stabbing one of the divers, and save it for the arrival of the seaplane. Once you spot the seaplane, fire the harpoon at it and climb up the cable.

Level 5: When you're inside the truck, ➢

John Lai **has discovered a series of cheat keys for** *Afterburner.* **Pause the game during play and type THUNDERBLADE. The following keys give:**

G - EXTRA MISSILES
T - REDUCE MISSILES
< - PREVIOUS STAGE
> - NEXT STAGE, and
N - EXTRA LIVES

you'll be under attack from other vehicles. Trucks can be destroyed by ramming them repeatedly into the roadside. After a little of this treatment, the trailer is released, leaving the rig to do the damage – this must be knocked out too. Watch out for jeeps, because they carry missiles. Avoid their fire power by staying out of line, and destroy them by driving over them.

BLOODWYCH

Here's a few tips to ease your progress through Mirrosoft's *Bloodwych*, courtesy of **Rickmansworth resident Paul Harman.** Moving your character can be difficult using the arrows in the game. Instead, try the arrows on the ST's keyboard. Clicking on doors instead of the open door icon opens them, and unlocking doors is simple as long as you have a key in your hand.

NEW ZEALAND STORY

This game has many of you tearing your hair out in frustration. But take heart, because **Ballymena's own Mark McBee** has the answer to all your prayers.

On **level 1, part 1,** move to the area containing three men with boomerangs: shoot them. Go to the top of the third platform, move to the left, jump and fire five times. A whirlwind in a box will appear. Jump into the whirlwind and you'll be tranported to level 1 part 4.

When you reach **the second part of level 2** find the men riding balloons and kill them. Shoot five times and another whirlwind appears. If you enter it, you'll be transported to the end of the level. Then you can free Tiki's naughty friend just by jumping.

When you reach the ice whale move to the right-hand side of the spikes, avoid the crystals, and wait until he picks you up. Once inside the whale you can start shooting – but avoid the ice drops.

Meeting the rock monster without bombs makes him difficult to pass. So collect bombs, go to the highest platform and give him what for! Kill the rock thing either by dodging the bullets and hitting it when the doors open or by using fire balls.

The last boss you encounter is the balloon seal. He can't be killed by blows to the body so you must hit the balloon. Be careful, though, for the balloon seal is armed with a cannon and shoots cannon balls at Tiki.

Finally, the names of the towns are **Auckland, Rotorua, Waitomo Caves, Strait Cook** and **Mt Cook.**

Thanks for these magnificent tips Mark and good luck to all you merry pranksters! ■

SHARE YOUR SECRETS!

If you've found your way through that tough game, why not tell the rest of us? Send your cheats, hints and tips to: *Gamebusters!, ST Format,* 4 Queen St, Bath BA1 1EJ. The best entry each month earns its author a whacking great mystery software prize.

And this month's winner is (fumbles with gold envelope nervously)... *the mysteriously Christian name-less R Headley!*

NAVY MOVES

Salt in your hair and sea-water in your plimsols? For jolly Jack Tars everywhere **the mysteriously Christian name-less R Headley** has produced the definitive cheat's guide to *Navy Moves* from Dynamic. Starting with part 1 – seems sensible...

■ Move back slightly when you encounter a mine. They're much less sensitive from the rear

■ Avoid jetski bullets by jumping or ducking

■ When approaching sharks, move the up and down nut left and right

■ Octopuses (octopi?) and sea monsters are easily thwarted by holding down fire until both missiles are ignited and then releasing

■ Struggling to dock with a submarine? Put the mini-sub in the gap between the tailfin and the hull, face the left of the screen and move upwards slowly - the computer takes over the docking procedure for you

Part 2

■ The necessary code is **948411**

■ Arrows indicate the direction of the lifts

■ Kill white marines and flamethrower troops to get more ammunition. Stand over the body and search thoroughly

■ To get the code of an official, you must shoot him with a gun, not a flamethrower

■ To enter computer codes, stand by a terminal, push up and you'll be asked for a code. Two of the codes are:

Transmit message: 1st or 2nd transmission official
Open door: 1st or 2nd machine official

■ To open the reactor door, use the terminal next to the reactor. The computer confirms the bomb is planted. Go out, use the same terminal you used to open the door and transmit the following: **OABERYAMD.** Now type END at the ready prompt and if you know what's good for you run like hell to the conning tower! ■

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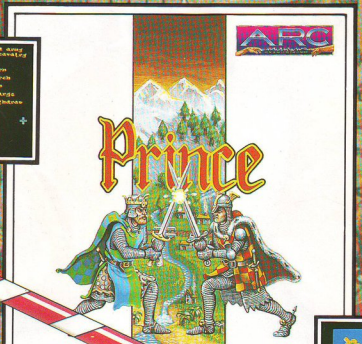

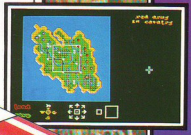

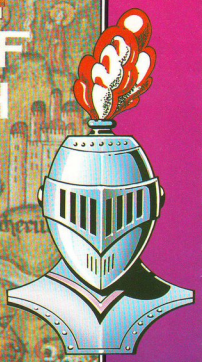

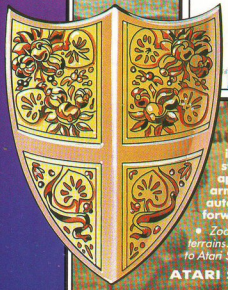

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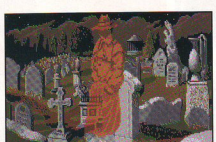


THE COUNT

9 DON'T GO ADVENTURING

All the very latest news and gossip with the secretive and mysterious Count

Sad news comes from Level 9: *Scapeghost* is to be their last adventure – at least in the present format.

"People have been declaring the death of the adventure market for years," Pete Austin observed, "so *Scapeghost* is an appropriate final release. It comes from beyond the grave – and you play a ghost!"

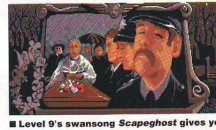
But is Pete right? There's room in the market, surely, for text/graphic adventures. They may not be runaway bestsellers, but they do have a long shelf life: *Zork 1* and *Colossal Cave* are still selling.

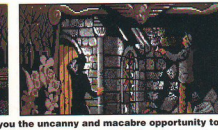
However, Level 9 have their hearts and minds set on their new system, HUGE (wHolly Universal Games Engine). The system is devoted to 16-bit machines and includes multi-directional scrolling, fast animation with no overhead for 3-D graphics, digitised sound, flexible sprites and high data compression. Mike Austin says that HUGE has taken ten man (person?) years to develop: "It represents a number of major advances for games software."

Level 9 say they've been commissioned by a major US publisher to write games using the system – maybe they could write Gnome Ranger 3 during their coffee breaks?

In *Scapeghost* (£19.95) you play ex-cop inspectre *(groan)* Alan Chance. You've been done away with by a gang of villains because you knew too much and then framed for a number of crimes you did not commit. You return, in ghostly form, to seek revenge upon the self-same baddies.

■ Look out in next month's big fat *ST Format* for the full and definitive review of *Scapeghost*, as well as an exclusive interview with Level 9 about their new HUGE system





■ Level 9's swansong *Scapeghost* gives you the uncanny and macabre opportunity to attend your own funeral... and snoop around hunting for clues. As a disembodied ghost no-one can see you, so you can get away with murder

ULTIMA VI – LATEST DETAILS

Each game in the *Ultima* series is a vast improvement in every area on its predecessor; *Ultima VI* continues that trend.

Richard Garriot, Origin Systems' founder, gauges the improvement by the number of tiles used to create the *Ultima* world. Garriot uses tiles as building blocks. The more tiles – the more detail. *Ultima I* used 32 tiles, *Ultima V* had 512. *Ultima VI* has 2-4,000 tiles!

The land is contoured so you can see subtle differences in the landscape and even watch a river flow to the ocean. The game is now much more object orientated. Every object (even knives and forks) can be manipulated.

Richard has good news for ST *Ultima* fans: "It's been difficult for us to do strong ST conversions. They were originally converted from an Apple II, which meant that conversions never really utilised the ST's powers. *Ultima VI*, however, is developed on a PC, written in C using VGA graphics and developed as a mouse controlled product. So the ST conversion will be much faster because it can almost be directly ported over from the PC. Ultima VI will utilise the ST's powers much more than *Ultima V* did."

The characters in *Ultima VI* are more intelligent. They live in their own ecosystem; they can tell you about themseleves, their family and what they know about the world. If they sell you goods the price will depend on what stores they have and so on.

Ultima VI continues the literary content, integrating human emotions and presenting something more than boring hack'n'slash. Interaction from past *Ultimas* continues. So if you stomp on the peasants and steal their food, then you'll receive no co-operation from them. Fair enough.

And while the world awaits *Ultima VI*, *Ultima VII* is already under way!

SNIPPETS...

● Bringing tabletop RPG to computer has never been successfully accomplished – until now, and American software house Masterplay's *Star Saga 1* (SS1). Run by Andrew Greenburg, the chap who created the highly successful *Wizardry*, Masterplay have developed the very first leisure product to be based on an Expert System.

SS1 can be played solo or with up to six players simultaneously, with the computer performing the job the GM would fill in a table-top game. The game is text-based, using plot booklets and character booklets to further the story. Masterplay reckon this prevents anyone hogging the computer for longer than necessary!

Each player has his own character, his own quest and his own adventures within the same, single game world. However, inter-player co-operation is not only possible but desirable.

Stick with *ST Format* for more news as it arrives!

● Impressions have announced the imminent release of *Emperor of the Mines* (£24.99), a strategy game based on an SF theme. The game revolves around space mining, the new principal source of revenue. *Emperor* is divided into episodes which have a time limit. A new episode sees the introduction of new game variables.

● Comsi are due to release the follow-up to *The President is Missing, Presumed Guilty*. Set in 1996, you play an investigator employed by COPNET.

While investigating the murder of a man involved with the "Star Wars" project someone has the audacity to frame you for that very murder. You must prove your innocence before the time is up!

Grand Fleet Kriegsmarine Main Battle Tank

MACHINE: ALL STs

PRICE: £35 EACH

BY: SIMULATIONS CANADA

CONTACT: COMPUTER ADVENTURE WORLD, 051 666 1132

ON THE WARPATH

STORY *Paul Rigby*
ILLUSTRATION *Simulations Canada*

Given the ST's abilities, surely it can't be wise to ignore graphics altogether? Yet that's precisely what Simulations Canada have done

Simulations Canada are hardly known in this country, but they have a devoted following in the States and, not surprisingly, in their native country. What's surprising is that this attention is given to a company who produce wargames, a subject which you might think warrants little interest.

Sim Can have often found themselves at the centre of controversy. The root of the controversy lies with Sim Can's wargame design ideas. They live for the policy of the "Fog of War."

In real combat, decisions aren't based on perfectly received information. Commanding officers often find information is very difficult to obtain at all. There are communication breakdowns and even when information is received, some of it is inaccurate or lacking clarity. In addition, the natural elements, such as the weather and the landscape, play a crucial part in many conflicts. They are all elements of the "Fog of War."

GRAPHIC FREE ZONE

Sim Can's major design priority is the decision not to use graphics. All of Sim Can's games are text based (reports, orders and so on) and game movement is tracked, manually, via plastic maps and chinagraph pencils supplied with the box.

Sim Can say this is the only way of maintaining the "Fog of War" element. They believe graphics reduce the realism of the game. Their whole system aims to reflect historical accuracy.

Steve Newburg, President of Sim Can has even go so far as to state that, "Since all these games deal with a historic topic and most call themselves simulations, I assume you actually want history and reality as major aspects of the game."

Needless to say, many are shocked when they see a Sim Can game for the first time. A bare screen, but for a few lines of text, hardly warrants the high cost does it? Well, that depends on your gaming interests.

If you're a "weekend wargamer," the type of person who likes to dabble in wargames and thinks that all wargames should look like Waterloo or UMS and be full of exploding machinery – then you should avoid Sim Can products altogether.

Devoted wargamers, people who want depth and realism, who don't mind working for their enjoyment will find Sim Can games both enjoyable and unique.

ALGORITHM METHOD

Sim Can put a lot into their Combat and AI algorithms, but they should supply more information explaining these, other game variables and historical background information. This is a failing in all of their products.

Many wargamers may find the level of documentation sufficient. However, considering the audience Sim Can are aiming at, and the depth of involvement required, I think they should make a greater effort.

All three games reviewed make use of the Sim Can features mentioned above. The two naval simulations *Grand Fleet* (WWI tactical naval combat in the North Sea) and *Kriegsmarine* (WWII tactical naval combat in the Atlantic) may, on reflection, be better suited to the text wargame than *Main Battle Tank* (modern tactical armoured combat in Germany) – the bleak expanse of the ocean lends itself to the bleak expanse of the monitor screen.

One disadvantage with the naval simulations is the slack time between action, (although I found *Kriegsmarine* less prone to this condition). *MBT* did appear to have more options and reports giving it a busier appearance. Graphic reports are supplied (tracing the movements of units) along with some nicely detailed text reports.

Simulation Canada's wargames are more akin to commander simulators than general wargames you might find, say, from SSI. Presentation may be poor but Sim Can have produced a unique design and an original format allowing the dedicated wargamer to lose himself in the fog of war. ■

STRATEGY	**8**
PRESENTATION	**2**
INTELLIGENCE	**8**
INSTANT APPEAL	**3**
LONG TERM INTEREST	**6**
OVERALL	**68%**

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- ❑ Missions Completed
- ❑ Next Map To Be Used

Want to play Operation Conquest but can't complete all the missions? Sure - just cheat and alter your mission marks! Like the map you're playing on, don't want a new one for your next campaign? No problem! Wipe those black marks from your record? Easy! Early promotion? Why not! Wanna be topgun? Sure go ahead!

GUNSHIP EDITOR (£4.95)

Edits:
- ❑ Pilot's Name
- ❑ Score
- ❑ Status
- ❑ Rank
- ❑ Decorations (medals etc)
- ❑ Reprimands

So you're missing in action or just plain dead? Show Geoa a thing or two and resurrect yourself! Wanna show your gongs to the ladies! (oo-er!) Here, have a congressional medal or two... Want some more stripes on your sleeve? Certainly- Colonel! Wipe those nasty reprimands? Yeah, go ahead!

AIRBOURNE RANGER EDITOR (£4.95)

Edits:
- ❑ Rangers Name
- ❑ Score
- ❑ Status
- ❑ Rank
- ❑ Campaign Duty
- ❑ Decorations

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ELITE Editor (£9.95)

Edits:
- ❑ Commander's Name
- ❑ Legal Status
- ❑ Credits
- ❑ Equipment
- ❑ Cargo
- ❑ Weaponry
- ❑ Next mission to be played and countdown to it
- ❑ Planet
- ❑ Galaxy

Waiting around for a mission? Cut down the waiting time to mere seconds! Mission too tricky for you? Skip on to the next one! Lost your cargo to some Thargoid scumball. Get it all back for free! Cops after you? Change your legal status to clean! Outgunned by the pirates? Have a megablast at no charge! Stuck in the middle of nowhere? Jump to somewhere completely different without using a drop of fuel! A little strapped for Cash? Have LOADSAMONEY

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HINTS AND TIPS

EDITED BY
The Mysterious Count
ILLUSTRATION
The Mystery Free Kevin Hibbert

Adventures are the greatest fun it's possible to have without laughing – until you get stuck. Now you can get past that tricky bit!

OUT OF THE SHADOWS: KING'S QUEST IV

Can't find the gold ball? It's actually in plain sight. Look near the water, and don't forget that Rosella's position in relation to objects has a bearing on whether you discover them at all.

Incidentally, a cheat for the *Kings Quest* series courtesy of that very nice man Neil Ferris of Glasgow. If you get killed press [ALT] and D and press return twice. A number appears at the bottom of the screen. Type TP and [Return] and you'll be asked NEW ROOM? Type the number that appeared at the bottom of the screen and you'll be miraculously restored to life and you can continue your quest.

A word of warning about *Kings Quest III*, however: don't do this until you've killed the Wizard or you'll lose all your objects – and you don't want to go losing your objects, do you?

LEISURE SUIT LARRY II

If you're having trouble getting started, remember it doesn't pay to be too honest!

ULTIMA V

Can't find food? Stealing crops won't help. Keep your party small to begin with, and always have your most intelligent character bargain for food.

started, buy the bag of crumbs and feed the birds. Take the gnomon from the sun dial and the paper bird from the pond. Use the soccer ball to get the brolly, push the pram to Lancaster Walk, get in the pram and open the brolly. If the skink keeps getting away from you, put it in your pocket.

To cool the lump in the crater, take an icicle to the vortex and then take it to the crater. If you can't find a key, use the binoculars to look in the shelter and the roadrunner will help you.

Finally, a snippet to help you with *Lurking Horror*. If you can't find a use for the flash, wait until you reach the curtain of slime. ■

MANHUNTER

You have to find out the last names of both Harry and Harvey. Harry is day two and Harvey day three. For those stuck on day one, you must get the correct thing from the video bar - less is more, so they say.

INFOCOM SPECIAL

The mysteriously Christian name-less S. Nuttall likes to while away an idle hour or two with a brass lamp in hand, searching out treasure and rescuing distressed women. And when not doing that, he likes to play Infocom adventure games. He's recently solved the many teasers associated with *Beyond Zork*, *Trinity* and *Lurking Horror*, and now he'd like to share those solutions with you, because that's the kind of a guy he is.

Beginning with *Beyond Zork*: if you don't know what to do with the dust bunny try rubbing the rug from the pub. Can't find the implementors? Use the scroll and the vague outline from the chest. If you're not intelligent enough, eat the fishcake from the market, wear the helmet and drink the potion of enlightenment. And finally, if you can't finish the game you need to earn more luck and compassion. Help the unicorn and minx, rub the rabbit's foot and collect any lucky charms you find.

Trinity is regarded as the most difficult of the Infocom adventures, and many novice adventurers spend frustrating hours trying to unravel its twists and turns. If you can't get

SPACE QUEST 3

Son of Sanderstead Simon Maizels has been occupying himself with this excellent adventure – "the best of its type yet," he reckons, "and almost up to *Zak McCracken's* standards!" If you want to see more of Simon's stuff take a look at Out of the Blue, the bulletin board run by his mate Alex on 01668 7667.

Anyway, here's a sample of Simon's *Space Quest 3* solution that should at least get you started. From the room with the pod head south. Walk almost to the bottom of the room then go east. Walk over the vertical conveyor and stand as close as you can to the buckets.

When you're dumped on the horizontal conveyor STAND as quickly as you can, then JUMP. You should then be standing on the rail. Start to walk west but BE CAREFUL: it's very easy to fall off. Walk all the way to the west until you get to the room with the robot. Walk over to the car hanging under the grabber and type GET IN GRABBER.

Go east into the next room by going left around the rail so that you appear on the far side of the room. Stop just before the right hand side of the screen and type PUSH BUTTON. A claw goes down and picks up the Warp Motivator. Go east to the section where the rail loops back round and stop just after you come onto the nearside rail. Type PUSH BUTTON.

The Warp Motivator should go into a spaceship down below. Go all the way back west to the room with the robot and stop in the centre alongside a platform. LEAVE GRABBER then go south. You'll fall down a chute and land in a rubbish room. Walk to the west wall and LOOK IN HOLE, then TAKE REACTOR. Walk to the north-east corner of the room and CLIMB the ladder. Walk north, east, west and when you in a red section of tunnel walk to the first bit of wire and TAKE WIRE.

Walk right, and get mugged by the rat (no seriously). He'll take the reactor off you: to get it back go west, west, south. Go to the bottom left of the screen and find the ladder. CLIMB then TAKE REACTOR again. CLIMB back up the ladder again but this time at the top, TAKE LADDER then go north, east, east, east. You should be in a room with the head of a robot at the front. Walk up to the left hand eye and DROP LADDER in front of the engine.

CLIMB, walk to the hatch, then ENTER HATCH. DROP REACTOR then USE WIRE. Go into the pilot's seat and LOOK AT SCREEN. Click on RADAR then ENGINES, TAKEOFF, WEAPONS SCREEN. Turn on the FRONT SHIELD then FIRE!

You should now have left the freighter!

■ **Help on the way for *SQ3!***

HELP THE GREAT ADVENTURE

Send your hints and tips – but no complete solutions, please – to: Adventuring, *ST Format*, 4 Queen St, Bath BA1 1EJ. You could win our mystery software prize (what "mystery" really means is we haven't decided what to give away, but it'll be pretty damn spiffing, that's for sure!).

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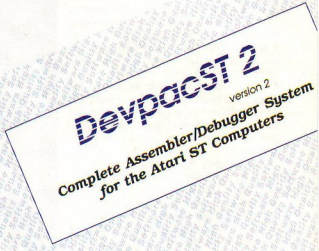

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HOTLINE NUMBER 0458 74011
OR USE THE ORDER FORM ON PAGE 156

Robokit

MACHINE: ALL STs
PRICE: £99.99 (LEGO COSTS EXTRA)
FROM: SILICA SHOP
CONTACT: 01 309 1111

Robokit is a cartridge that plugs into an ST, providing a user port similar to that on the BBC micro. With it you can connect various devices and detectors. Combine it with the software provided and your ST can take full control of the lot. But what's so important about the cartridge? Well, link it up to a few motors, attach some Lego, add a dash of imagination and lo and behold you have yourself a robot.

STORY *Mark Higham*
PHOTOGRAPHY *Ashton James*

TAKE CONTROL

While you can learn all the theory needed to control the robot simply by playing with the software, you're not going see your mouse clicks turned into actions until you get yourself a Lego Technic kit and build a robot.

If you're a Lego freak with boxes of the stuff spilling all over the floor every time you open a wardrobe you'll be laughing, but otherwise you'll need to buy new equipment. And at £140 for a set, it doesn't come cheap. Still, this isn't as unreasonable as it first appears, since to activate your robot you need motors, sensors and other specialised gadgetry. To top it all, these Lego kits can only be bought from educational suppliers – which suggests Silica's intended market for the kit.

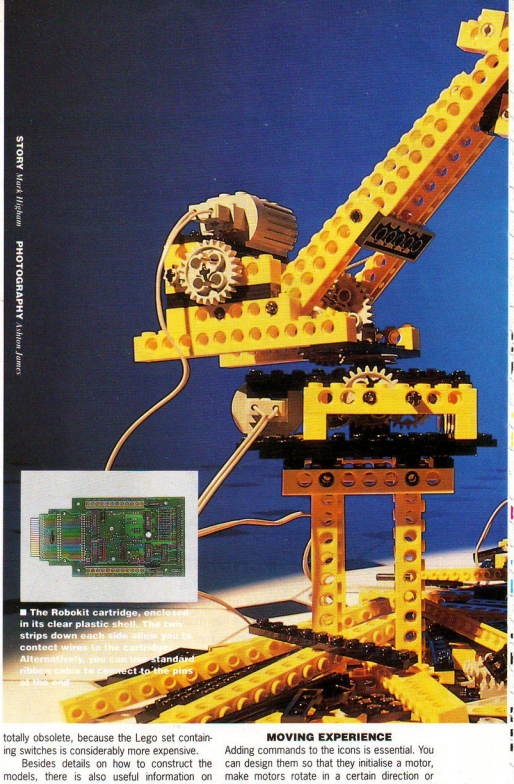
The manual supplied with the Robokit cartridge gives five different models to build, and explanations on how to do this span some 40 pages. The models given range widely – a mini-arm, plotter, card reader, maxi-arm and a lift-operator.

Unfortunately, the instructions on how to construct the models make large leaps from one step to another. This can be confusing when you're constructing gear sets together.

While the five projects which come with Robokit are by no means easy to build, they're by no means boring either.

- The mini-arm, the easiest to build, has one motor which revolves the arm on its base while the second operates the gripper. Two home-made microswitches are used to detect the position of the mini-arm.
- The lift operator exploits the microswitches further. Here, one motor is used to control a moving platform. Seven "floors" are used and the lift is designed to stop whenever it reaches one of these. The project is intended to illustrate the principles behind lift operation.
- A card reader. Depending on the position of the holes, the card reader gives out different values which are detected by the software.
- Drum plotter: this crude model requires you to tape a sheet of paper around a drum which rotates backwards and forwards while a pen is moved on and off the paper to make the drawing.
- Finally, the maxi-arm. Three motors provide versatile movement around two axes and also operate a gripper steady enough to move the pieces on a chessboard.

The manual was written at a time when Lego didn't market a kit containing microswitches. As a result, you have to make your own using paperclips and tin foil as illustrated in the manual. These instructions aren't totally obsolete, because the Lego set containing switches is considerably more expensive.



■ **The Robokit cartridge, enclosed in its clear plastic shell. The two strips down each side allow you to contect wires to the cartridge. Alternatively, you can use standard ribbon cable to connect to the pins on the cartridge.**

Besides details on how to construct the models, there is also useful information on wiring the motors and sensors to the Robokit interface. As soon as you've got the robot wired up to the cartridge you're ready to load the Robokit software and start getting the whole setup moving.

The setting-up procedure which could be better done: the software begins by asking you to select an RSU file from the disk, when there aren't any on it. Still, it all works out in the end, and the next stage is to call up an on-screen backdrop of your chosen robot. On it you position a variety of arrows and hands to represent movement in any direction. None of these icons mean anything until you assign control power and a meaning to them. There are 20 of these icons which cover most situations, but unfortunately you can only use the icons contained on disk and cannot create your own.

MOVING EXPERIENCE

Adding commands to the icons is essential. You can design them so that they initialise a motor, make motors rotate in a certain direction or stop all movement. Altogether you can control eight motors or other switched output devices such as LEDs.

Eight buffered inputs are provided, two possessing special circuitry which allows you to interface Lego onto "Encoders." You can access the board from your own software: several examples of how to do so are provided using both C and Basic code. You could, therefore, use Robokit to do everything from setting up a burglar alarm to creating a Konix multi-system (nice trick if you can do it).

To assign a control function you must allocate a motor number and an output port to the icon. Now, by double-clicking on the appropriate icon, the robot suddenly bursts into life. It's easy to link motors to the wrong ports, however, and you could well find the kit doing

SLAVE DRIVER

PRT's Prose software has been controlling industrial robots for some time: now, at last, they turn their attention to the ST

■ **In medium resolution you can see only half the robot – which makes it difficult to control properly. Since this is a non-functional backdrop, however, it's not essential to have anything on the screen**

■ **There are 20 icons you can import to control the robot. By assigning a command sequence to these, you can dictate exactly how the robot will act**

■ **We used the 1090 Lego Technic Control Set to construct this monster (above): at almost £140 for the Lego alone it doesn't come cheap. The mini-arm took an hour to build, once we'd worked out how the gearing system worked and built some microswitches**

unusual things. Play around with it for a while, though, and it'll soon react correctly. For the more complex robots, like the card reader, the manual gives a list of possible problems which can arise if you've made mistakes and suggestions on how to rectify them.

KEEP AN EYE OUT

One of the best features of the software is the ability to program a sequence of instructions so that the robot can get on with its task. These sequences can be replayed at any time or even assigned to icons.

Input Watching, which enables Robokit to watch for certain events and act accordingly, is worth mentioning. With the mini-arm, for example, micro-switches are installed so that as the robot rotates it tells you exactly where it's located.

The system can be programmed to watch for this event every five seconds in parallel with anything else currently taking place. Once you've programmed the software to watch the robot it continues to do so until instructed otherwise. You can program a reply to this function so that the robot respond when the situation becomes true.

The educational potential of Robokit is enormous. It could teach children the logic principles behind robots, for example, even though it's unlikely that you could find anything very useful for the robot to do.

Robokit can control robots – but that's not all. Its real significance is that it enables your ST to communicate with the outside world. Who knows where that might lead? ■

FORMAT RATINGS

Features 81%
Extensive control features, but more icons could have been included in the software

Speed 83%
You may need to construct gear mechanisms to slow down the Lego motors

Ease of Use 71%
Problems running software in medium resolution

Results 84%
Enormous possibilities for controlling traditional robots and much more

Format Value 82%
There's scope for building robots of your own design: the manual has some excellent suggestions

The Competition
So far Robokit is unique

STORY *Adrian McHeriot*
PHOTOGRAPHY *Adrian McHeriot*

Teletext Adaptor

MACHINE: ALL STs
PRICE: £148.93
FROM: MICROTEXT
CONTACT: 0705 595694

PAGE THE ORACLE

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Receiving Teletext on your ST screen is not such a far-fetched idea after all. Think about it. A box of tricks is plugged into your ST printer which receives and decodes Teletext broadcasts. The Teletext frames are then squirted onto the ST's screen. No problem.

In the first instance, Teletext is sent as a series of binary digits. Your ST loves that sort of information. Second, Teletext doesn't make any big demands as far as resolution and numbers of colours on screen goes. 40 columns of text and 16 colours – low resolution can manage that with no hassle.

Microtext's *Adaptor* fits into the parallel port of the ST and comes with its own power supply. The *Adaptor* is a nondescript item, apart from an aerial socket and a port for connecting to a CVBS (or composite) monitor.

You need an aerial if you're going to capture Teletext frames. A loft or indoor aerial may work in your area, but to be on the safe side you'll need access to an outdoor antenna.

Software bundled with the *Adaptor* captures the frames and displays them on your ST screen (or TV) and provides plenty of other useful features that you won't find on a Teletext-Receiving television set.

When you run it for the first time, the software lets you choose the country from which you're receiving Teletext. With that decision over, the software automatically scans the airwaves and stores the frequencies of any Teletext services it finds.

Assuming you are using the *Adaptor* in the UK, you'll find only four different Teletext broadcasts. These different broadcasts can be distinguished by the first line of the frame:

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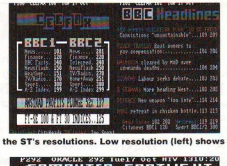
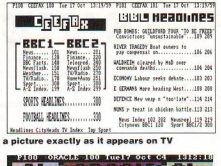
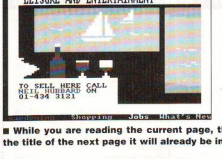
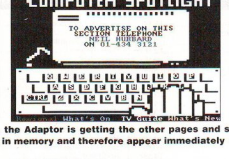
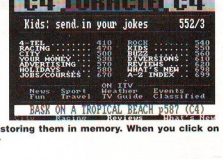




■ **The same picture is displayed in all three of the ST's resolutions. Low resolution (left) shows a picture exactly as it appears on TV**





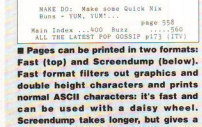


■ **While you are reading the current page, the Adaptor is getting the other pages and storing them in memory. When you click on the title of the next page it will already be in memory and therefore appear immediately**

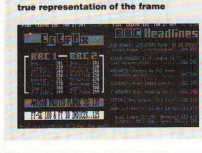
CEEFAX 134 Tue 16 Oct 11:23/03 – BBC 1
CEEFAX 221 Tue 16 Oct 11:23/03 – BBC 2
ORACLE 173 Tue16 Oct ITV 1123:03 – ITV
ORACLE 556 Tue16 Oct C4 1123:03 – Ch 4

It's possible to distinguish between BBC 1 and BBC 2 frames by the frame number, which is in the 100s and 300s for BBC 1, and 200s, 300s and 700s for BBC 2. It is easy to differentiate between ITV and Channel 4, since "ITV" or "C4" is displayed at the top of the frame (a bit of a giveaway, that).

Frames are selected simply by typing in a three-digit number on the keyboard. On many frames there's a line displayed at the bottom of the screen containing the titles of four other pages, each in a different colour and representing the titles of the pages you are likely to select next. While you are reading the current page, the *Adaptor* is getting the other pages and storing them in memory. Chances are that when you click on the title of the page you want to read next it will already be in memory and therefore appear immediately. This facility, called *Fastext*, is only just beginning to appear on some Teletext TVs.



■ **Pages can be printed in two formats: Fast (top) and Screendump (below). Fast format filters out graphics and double height characters and prints normal ASCII characters: it's fast and can be used with a daisy wheel. Screendump takes longer, but gives a true representation of the frame**



Programming the system opens up a number of interesting possibilities. It would be possible, for instance, to have Teletext data saved to disk and your own program update the results in a pools predictor or plot a graph of share movement. A standard text editor can be used to create sequence files.

Microtext's *Adaptor* is primarily intended for use in low resolution as this mode displays frames correctly – indeed, exactly the same as TV Teletext.

Only four colours are available in medium resolution – for most pages this is fine, but sometimes you might have red text on red background. The advantage of medium, and indeed high, resolutions is that two frames can be displayed side by side on screen at once.

TV SPREE

But what's the legal situation concerning all this? Just over two years ago Parliament passed a law permitting computer owners to use a TV (black and white or colour) without a licence.

You could therefore have a TV in your room and not have to pay a licence for it – if you could prove that you used it solely for computer work.

Dedicated computer monitors – like Atari's SC1224 and SM124 – don't require a licence, of course: you do need one, however, if you wish to use Microtext's *Adaptor* with a TV or monitor. Teletext is just a part of what the whole TV licence is about, and, in any case, the *Adaptor* enables some types of monitor to receive TV programmes. And only one TV licence is needed per household, no matter how many sets there are.

If you need to receive Teletext pages regularly, or if you lack such a facility on your TV, Microtext's *Adaptor* is just what you need. The software is excellent and the quality of Teletext – certainly in low resolution – is actually better than a TV's picture. Additionally, any monitor with a composite video input, such as the Philips CM8833, can be used as a colour TV simply by connecting it to the *Adaptor* . The quality of picture obtained is excellent. because of the high resolution of the monitor's tube. Highly recommended. ■

FORMAT RATINGS

Features **92%**
Has all the hooks necessary to capture and store Teletext frames

Speed **80%**
A buffer captures several frames in advance, making for fast operation

Ease of Use **79%**
If you've grabbed Teletext frames from a TV you shouldn't have any problems

Results **84%**
Good, although you may have difficulties receiving frames if you live in a built-up area

Format Value **81%**
If you use it regularly it's well worth it – but will it be an expensive gimmick you use just a few times and then forget?

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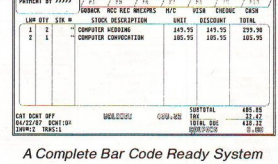

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TWO OF A KIND

STORY
Chris Jenkins
SCREEN GRABBING
Gordon Druce

Dr T has released two new remarkable music software packages with much in common

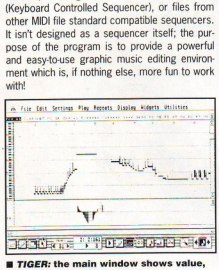
Dr T's two latest software releases are both "second generation" programs, designed to overcome the problems of the first big wave of ST music software.

TIGER improves on the early sequencers such as Dr T's *KCS* and Steinberg's *Pro-24*, which had poor graphic editing facilities; *X-OR* replaces the horde of patch editing packages which were designed to cope with only one particular make of synth.

TIGER

MACHINE: ALL STs
PRICE: £129
DISTRIBUTOR: MCMXCIX
CONTACT: 01 724 4104

The Interactive Graphic EditoR, to give *TIGER* its full title, is designed to work with Dr T's *KCS* (Keyboard Controlled Sequencer), or files from other MIDI file standard compatible sequencers. It isn't designed as a sequencer itself; the purpose of the program is to provide a powerful and easy-to-use graphic music editing environment which is, if nothing else, more fun to work with!



■ ***TIGER*: the main window shows value, duration and velocity of the notes, while the control window shows a pitch-bend curve**

TIGER works in mono or – not ideally – in colour, is fully GEM-driven, and has a choice of drop-down or pull-down menus. And since the music is interrupted if you pull down a menu accidentally, the pull-down option is welcome.

The main screen consists of the menu bar, up to three player-piano style scrolling track windows, a controller window which can show performance data such as modulation wheel curves, and a number of control icons. There's also a Controller Track which contains data for the song's tempo changes.

Loading up a demo file and watching the data scrolling as the music plays gives you a good grasp of the basic idea; each note is represented in a pseudo-3D format, with the vertical position giving the pitch, the horizontal bar length giving the duration, and a vertical stem showing the velocity. All you have to do to edit a note is to select the Draw icon, drop the note into place and drag the bars to set duration and velocity. A full range of cut, copy, paste, loop, insert, delete and move controls make life easier.

Control effects like pitchbend and vibrato are shown as curves in the controller windows. You can insert preset pitchbend effects, or draw and redraw curves to get effects exactly right, and a number of Group functions let you perform functions such as increasing the volume of every note in a required range by a definable amount. There are also note quantisation features derived from KCS.

TIGER is obviously going to appeal most to KCS users who have very limited graphic editing features, though it's so interesting it may win some support from users of other sequencers. Look out too for *Tigercub*, an entry-level sequencer with many of *TIGER's* graphic editing facilities, due out early 1990.

NO DUMPING REQUIRED

Both *TIGER* and *X-OR* are compatible with MPE, Dr T.'s Multi-Program Environment. If you have enough memory space in your ST, you can load several programs at once – say, *KCS*, *TIGER* and *X-OR* – exchange files and switch from one to the other without dumping anything.

Obviously a Mega ST is necessary if you don't want to run out of space for music and patch data.

FORMAT RATINGS

Features 89%
Unique and powerful editing facilities

Speed 69%
Some fast editing features, but limited by GEM

Ease of Use 92%
The best graphic editing methods yet devised

Results 90%
Excellent results, especially with *KCS*

Format Value 80%
Attractive alternative to a more expensive sequencer

The Competition
No other package offers facilities quite like *TIGER*

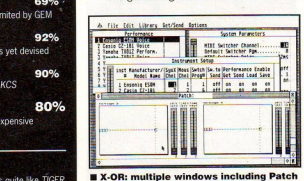
X-OR

MACHINE: ALL STs
PRICE: £249
DISTRIBUTOR: MCMXCIX
CONTACT: 01 724 4104

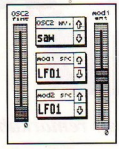
Software patch editing packages are much more efficient and cost-effective than cartridges, memory cards or internal disk drives for storing all your synth patches. But when you have several synths, it's a pain having to buy a separate patch editor for each. Although there have been a couple of "generic patch librarians" like Hybrid arts *GenPatch*, which STORE patches from practically any MIDI synth, *X-OR* is the first of a new generation of generic patch editors: it also allows you to change the sounds you have in memory.

Fully GEM-based, *X-OR* is very easy to use, particularly if you're familiar with the Caged Artist patch editors – it's by the same programmer, and it's compatible with Caged Artist patch files. The program works by allowing you to load Profiles compatible with your particular synths: the basic package is supplied with Profiles for Casio, Roland, Yamaha, Ensoniq, Kawai, Korg and many other makes of synths. Regular Profile update disks will keep the package up to date – or if you have the skill you can write your own with the E-OR utility.

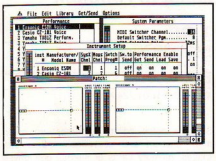
The great thing about *X-OR* is that its multi- ➢



■ **X-OR: multiple windows including Patch Edit, Instrument Set-up, System Parameters and Performance**



■ **Below and right: a typical X-OR Edit Window control layout – this one is for the Ensonig ESQ-1**



window environment lets you handle several synths at once. The Performance window lists all the Profiles you have installed; Edit windows full of the appropriate sliders, knobs and switches let you edit and test the sounds, and Library windows let you organise and save them to disk. Once you have tailored *X-OR* to your system, you can load or save an entire bank of sounds for each of your synths with one click of the mouse – it's that powerful. ■

FORMAT RATINGS

Features **92%**
Powerful, comprehensive and well designed

Speed **69%**
Some fast editing features, but limited by GEM

Ease of Use **92%**
Good combination of simplicity and sophistication

Results **90%**
Should make your whole MIDI system more efficient

Format Value **89%**
Costly, but maybe cheaper than a collection of single packages

The Competition

MIDIMan, £79, Hollis Research (0481 710982).
Librarians; *Genpatch*, £129, Hybrid Arts (01-444 9126). *Super Librarian*, £109, MCMXCIX (01-724 4104).
OmniBanker, $95, Paradigm (USA – 010 616 372 5972 ex. 752)

DOCTOR ON CALL

■ **Al Hospers, main man of Dr T Software**

STORY *Chris Jenkins*
PHOTOGRAPHY *Chris Jenkins*

Dr T main man Al Hospers was over here recently, and talked to ST Format

KCS, the Keyboard Controlled Sequencer, was the first Dr T product to make significant inroads into the ST market. Since then a number of updates and a collection of patch editors and other packages have made the company one of the biggest music software specialists in the world.

Though Dr T is named after programmer Emile Tobenfeld, the company is owned and run by Al Hospers. His visit to the Personal Computer Show was partly to negotiate with hardware manufacturers, partly to get the feel of the UK market, and partly to show the latest software productions to Dr. T's UK distributors, MCMXCIX (01 724 4104).

How is the company run, and what's your role?

We have only two in-house programmers, but we have around 18 outside developers, such as Bob Melvin, the legendary Caged Artist. Most of them are paid on a royalty basis; my role is to act as a publisher for their ideas – so if any *ST Format* readers have written any good MIDI programs, I'd be happy to look at them!

Sometimes we have to work to transfer a program from one machine toi another; *Copyist*, the musical notation program, came to us on the IBM PC. Some are on the ST but need to be converted to work with MPE, our Multi-Program Environment. We're doing that now with Square Dance Audio's *MIDIDrummer*.

I graduated in computer programming from Columbia, but I don't do much in-depth programming any more. I work on the user interfaces, such as the improved graphics on *KCS* 1.5 onwards, and on *TIGER*.

How important is the UK market to you?

Pretty big. Obviously the US is the biggest, followed by Germany, and the UK is third. I think we do well here because we have such a wide selection of products for the whole range of computers.

For instance we have the only *Proteus* editor for both the ST and the Amiga, and we have the best scoring package on a range of machines, *Copyist*. Also we usually manage to get new products out first: *OpCode* had a six-month head start on us producing a *Proteus* editor, but we still managed to get ours out first. What's the secret? We just work hard!

Have you looked at the STE yet?

We have an STE, and our forthcoming program *Tigercub* makes use of the enhanced graphics and sound. In the early days we limited the use of graphics because it was faster to handle text on screen. Now we've overcome those problems, and the' redraw on the upgraded versions of *KCS* is faster than Steinberg *Cubase* or C-Lab *Notator*.

But we've reached the limit of the machine because there's nothing you can do about the 8MHz clock rate, blitter or no blitter. We have an Atari TT workstation, and we've got an Apple NeXT system on order. It would be nice to be able to write on a true Unix multi-tasking system; the multi-tasking on *Cubase* and *Virtuoso* is really a kludge on a machine that isn't designed for multi-tasking, and we won't do that.

The question is, which machine do we go for? Do we make everyone upgrade to a new system and throw away all their patch editors? Do we just convert *X-Or*, our universal patch editor, and let them use that? We'll just have to wait and see.

What about the argument that using computers takes the feeling out of music?

Well, if you're talking heavily quantised, repetitive music, maybe, but computers never replace real musicians, they just replace imbeciles! The people who've lost out were no good in the first place! MIDI and computers have given a lot of people a way to express themselves they didn't' have before.

So what's Dr T's next program for the ST?

Tigercub, an entry-level 12-track sequencer with some of the graphic editing features of *TIGER*. It's due for release soon, at £99. We're committed to the consumer marketplace, and I think Tigercub is going to do well both in education and home studios. ■

Dr T's UK distributor is MCMXCIX, on 01-724 4104

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SHOW TIME

The PC Show featured more new software than the British Music Fair. Now the dust has settled we assess the implications

STORY *Chris Jenkins*
PHOTOGRAPHY *Chris Jenkins*

Music is undoubtedly becoming a more and more important part of the computer industry: the Personal Computer Show at Earls Court had a special stage area devoted to music demos, and an entire Music Village set aside for software houses.

The software artists in the Music Village had to compete with the racket from the coin-ops and videos, but with a range of synths and samplers every bit as impressive as those at the BMF, the message comes across loud and clear: ST music software is growing faster than ever before.

Although it has already been pointed out that few entirely new products appeared, there was a whole host of upgrades and enhancements, many of them of considerable importance.

PRODIGY EXPECTED

Digital Muse (01 586 3445) showed V1.1 of *Virtuoso*, the only current UK-written ST sequencer, which now includes optional graphic sliders for control of many parameters; an Unlock feature which lets you scroll the Grid Edit display independently as the music plays; recording in Arrange mode; and Chase Back, a feature which searches for events such as program changes and sustained notes taking place before the point where you drop into Play in the middle of a sequence.

Virtuoso will soon be able to compete with *Creator* and *Cubase* for the professional market, when an SMPTE synchronisation box appears at £199. This small hardware unit lets musicians lock their *Virtuoso* sequences to SMPTE signals from film or videotape.

All SMPTE standards are supported, and the unit also has an audio trigger which allows you to synchronise to click-tracks from tape, drum beats, finger-snaps, anything you fancy –just like C-Lab's *Human Touch* add-on. Also announced, though not yet priced, is a hardware MIDI port expander with four INs and OUTs.

If you want to sample *Virtuoso's* machine-code speed without spending £299, there's an upwardly-compatible cut-down 32-track version, *Prodigy*, on the way. It has most of the same graphic editing features, but simpler controls. Cost is to be £130 and you'll get a full refund if you decide to upgrade to *Virtuoso*.

Steinberg's *Cubase* actually appeared on the Atari stand, but to everyone's disappointment it wasn't the major upgrade 2.0 on show, merely a "filler" version 1.5. This update, free to registered users, adds such features as automatic saving, faster mouse movements, and definable on-screen real-time "mixer" controls. We'll have to wait until January for V2.0 with its improved music notation facilities.

BIGGEST EVER UPGRADE

Hollis Research announced updates to the *Trackman* sequencer, including real-time fader control of insrtument volume. In the next major update, *Trackman II*, there will be loads of improvements including higher note capacity, a MIDI output from the metronome, a "scribble strip" for notes, editing, undo and disk operations without stopping Play, more options for numbering patch changes and so on.

Evenlode Soundworks: 0993 89228
Hollis Research (First Rate): 0481 23166
Hybrid Arts: 01-883 1335
MCMXCIX: 01-724 4104

Plenty in the pipeline too from Hybrid Arts, including *Protozoa*, a patch editor for the new *E-Mu Proteus* sampled keyboard – pretty fast work, since no-one seems to have seen the *Proteus* itself yet! More usefully, the good news is that the top-grade sequencer *SMPTETrack* is to receive its biggest-ever upgrade. The bad news is that for the first time users will have to pay for it – £75. Still, you get 100 extra pages for your manual, and a host of new features including improved movement between editing pages, scrolling of any value on screen, keyboard macros for chaining commands, setting of SMPTE pointers during play, unmixing of sequences into separate notes (for retuning drum parts for instance), a Help page, a damaged data recovery routine, and a utility to program "sets" of songs with definablepauses between pieces – great for live performances.

In issues to come *ST Format* will be taking a closer look at some of these programs as they appear – especially budget packages like Dr T's *Tigercub* and Digital Muse's *Prodigy*.

■ **TSC (The Synthesizer Company) has launched MusicWare, a mail-order music software service. The selection of products is based on the stock held by software subsidiary MCMXCIX, including Dr T, Intelligent Music and Passport products; but MusicWare also handle Steinberg and C-Lab software. Call 01-724 4104 for a catalogue.**

■ **Music software demos featured heavily on Atari's special stage at the Personal Computer Show, including a demo of Steinberg Cubase music software**

TYING UP CHORDS

STORY *Chris Jenkins*
ILLUSTRATION *Chris Jenkins*

Part four of our musical tutorial series tackles the tricky subjects of chords and arranging songs

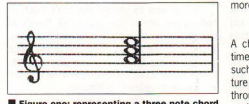
This month we're dealing with the knotty question of chords. It's easy enough to create a chord – just play two or more notes at once. The tricky bit is knowing which notes go together to make pleasingly harmonious chords, and which produce a painful cacophony.

Chords are constructed according to the key in which you are playing. When an instrument is required to play more than one note at a time, the notes will appear one above the other on the stave, usually sharing the same stem (fig. 1).

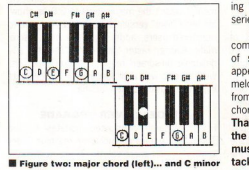
PRIMARY TRIADS

A chord takes its name from its "root note," and there are two rhain types: major and minor, derived from the major and minor keys. In a major key, the note sequence from the root note is "tone, tone, semitone, tone, tone, tone, semitone". In a minor key, it's "tone, semitone, tone, tone, semitone, tone, tone."

The simplest chord is a "primary triad," which consists of the root note, the third note up the scale, and the fifth note up: for instance, in C major, C, E and G. Flatten the E and you get C, D sharp and G; a C Minor chord (fig. 2).



■ **Figure one: representing a three note chord**



■ **Figure two: major chord (left)... and C minor chord (right)**

HAPPY TALK

In any key there are usually three major chords which, as we technical types like to say, "sound good." In the key of C Major they are C, F and G Major, for the simple reason that all the notes in these chords fall in the scale of C major. No-one knows why, and there's a whole science of psycho-acoustics devoted to trying to find out, but it's usually said that major chords sound happy while minor ones sound sad – though since most pop music is written using minor chords, this is a little hard to defend!

Things get complicated when we begin to add notes to the basic chord, or transpose notes an octave to achieve a different effect. You may see phrases such as "Augmented 7th" or "Diminished 5th" used to describe these more complex chords.

ARPEGGIOS

A chord in which the notes are staggered in time is called an arpeggio; some synthesisers such as the *Roland D5* and *Yamaha DX11* feature arpeggiators, which play in sequence through any notes you hold down. This useful performance effect can be used to create backing "sequences" simply by playing the correct series of chords.

It's often said that there are no new ways of combining these chords into songs, but the art of songwriting consists of coming up with appealing chord sequences and matching melodies. Experiment with tricks like changing from major keys in the verses to minors in the chorus, as the Pet Shop Boys often do. ■

That concludes this short introduction to the joys of musical theory. Next month our music coverage takes a dramatic new tack: stay tuned, and make sure you order your copy – it'll be selling out fast!

GOING FOR A SONG

Last month we covered different ways of creating sequencer patterns; now we'll look at combining these patterns into complete pieces – usually known as songs.

Some sequencers, for instance *Steinberg Pro-24*, operate on the "endless tape" principle. The computer's memory is treated as a long piece of recording tape, and after recording your tracks, you set start and end locator points and loops to create a Song.

A much more logical method is the pattern/song technique used by our example sequencer, *C-Lab's Creator*, where your patterns are chained into a song in "arrange" mode. On the left of the *Creator* screen is the arrange window.

Part of the reason we've chosen *Creator* as our example sequencer is that this arrange window is visible as you are working on each pattern, so you see the structure of an entire song at a glance.

Arranging songs in pattern mode, the sequencer will play continuously whatever pattern is shown in the window. Having defined your patterns, say intro, verse, chorus, bridge and outro, click on the arrange button, and the sequencer will play through the patterns in the order you enter them in the arrange window. You can just have one immensely long pattern (in *Creator*, the limit is 1330 4/4 bars), but you'll probably want to use more than one.

At the top of the arrange window is the first bar of the song; all you have to do is click-and-drag to copy it further down. Each new entry in the arrange window can be given its own starting bar, pattern number and pattern name. The real power of sequencers like *Creator* becomes obvious when you start to edit arrangements.

Each pattern can be transposed, so that all the tracks in it change in pitch; you can mute out any tracks in a given pattern; push forward or pull back the start of the bar; and record tempo changes, either by inserting them on the edit page, or recording them in real-time as you alter the tempo reading.

You can even record in arrange mode in this way, the structure of your song is as open as the structure of your track or pattern, and final decisions on the shape of your piece of music don't have to be taken until the last minute. If you want an extra verse, just insert it; if the chorus is too long, just click-and-drag to trash part of it.

TIMING

As your song plays back, the current pattern appears in the pattern window, and *Creator* displays the current bar number and time in minutes, seconds and milliseconds (if you need them, there are even facilities for making a song fit in a given time – which is a boon for anyone composing music for TV or films!). You can store and recall different arrange cursor positions, and scroll through the song using the "tape transport" buttons.

Next month we'll look at some of the complex editing techniques which can transform your sequencer performances from the routine to the remarkable. ■

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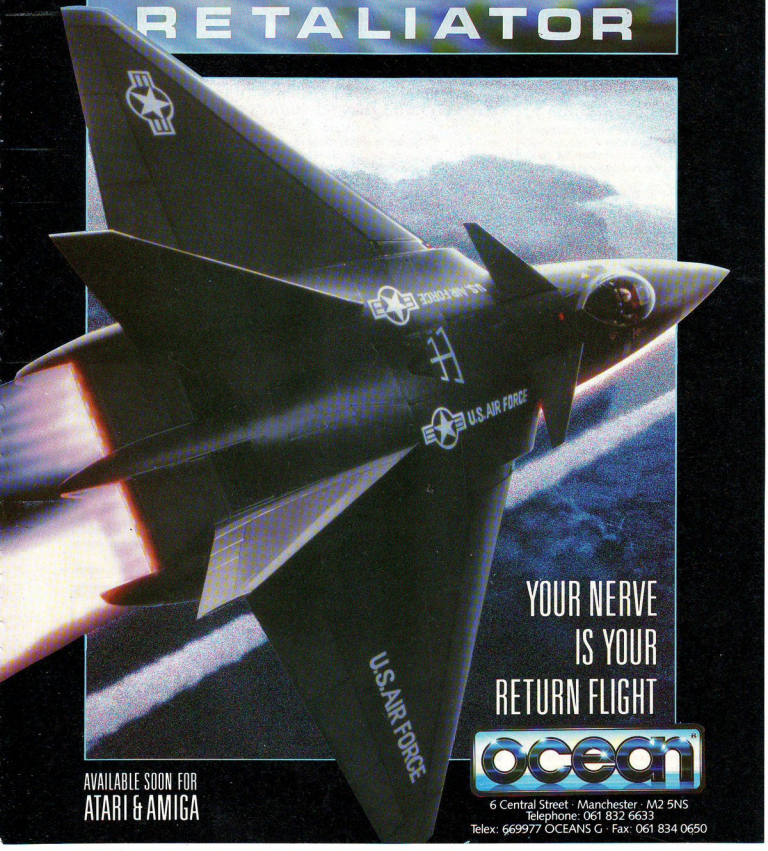

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Quartet

MACHINE: ALL STs
PRICE: £49.95
BY: MICRODEAL
FROM: 0726 68020

SOUND CITY!

STORY *Richard Monteiro*
FRAME GRABBING *Richard Monteiro*

Grabbing sounds and replaying them through your ST – big deal. But what about composing four track ditties from digitised data? Microdeal's* Quartet *makes a big, big noise

What do you do with a digitised sound once you've got it in memory? Play it back several times, reverse it, squash it, move sections around. Then what? You add a run-time module to it so the thing plays from the GEM Desktop. Well, excuse me for not getting excited. A single sample playing non-stop – gosh, big deal.

Now Rob Povey and Kevin Cowtan have created a composing tool which uses sampled sounds as the instruments. What's really astonishing, though, is that it's now possible to have *four* channels of sequenced sampled sound playing *simultaneously!* It's this that makes *Quartet* so exciting.

Quartet's main screen consists of an empty stave, several menu bar options and a handful of icons. Each voice has its own stave; but only the currently-active voice's stave is displayed. A series of notes, from a semiquaver to a dotted semibreve, are shown just below the stave. A selected note can be planted anywhere on the stave.

You don't need to know anything about music theory to use *Quartet*. As long as you're aware that a semiquaver is the shortest note and a semibreve is the longest (at least, in *Quartet*) – and notes planted lower down on the stave sound deeper than notes placed high up – you can easily fudge your way through music composition.

Drop a few different length notes here and there – listen to your efforts. Make a few changes, try again, make a few changes... Trial and error will eventually teach you to recognise which note patterns sound good and which don't.

SOUNDS LIKE ELVIS

Plonking notes down willy-nilly is just one aspect of making music – you've also got to decide which instrument (sample) to assign each note. Up to 20 instruments can sit in memory, and each note can have any of the memory-resident samples assigned to it. Complete sets of instruments can be loaded, and there are over 100 individual ones provided on the disk. Unless you're intending to create an operatic score for the didgeredoo or the fork and spoon, there are bound to be a collection of sounds which satisfy your needs.

Very flexible looping has been implemented in *Quartet*; it's possible to loop (or repeat) sections of your composition at any point and on any channel. Loops – so that you can set up short drum patterns and have them play over and over again – can be nested to an astonishing depth of 100. That is, you can have loops inside loops up to 100 times. In reality you'll never need anything close to that.

Doubtless you've heard the God-awful guitar sliding effects that so typify Hawaii and all those rotten movies Elvis Presley made (after he died, I think) – well, you too can produce similar sounds using *Quartet*, though why anyone should want to torture themselves is beyond me. (In musical terminology, incidentally, these slides and links are called slurs and ties respectively.)

RECORD BREAKERS

If the notes are of different pitches, *Quartet* slides between them. The first note sounds and, when it finishes, the slide to the next note begins. A link, or two notes of the same pitch, cause the duration of both notes to sound in one long tone.

A selection of pre-set time signatures can be chosen from a menu. Alternatively you can define your own. The time signature consists of two numbers; the top indicates the number of beats per bar while the lower one shows the value of the beat (2 for half-notes, 4 for quarter-notes and so on).

It's possible to transpose, or move up or down a semitone, a whole voice. Any notes that would fall off the stave are not moved.

There's a work area (buffer) in which you can put whole sections of a voice for editing – it looks just like an ordinary voice, but cannot be played along with the rest of a composition. You can, for instance, cut a specified area from a block; paste an area from the buffer into a voice; or transpose an area of a voice by first moving it into the buffer, transposing the section, and then pasting it back.

MEMO TO GAMES WRITERS

Quartet provides two MIDI modes: Poly Play and Record. In either mode it's possible to alter the current sample by pressing the instrument-select keys on you synthesizer.

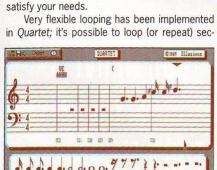
Poly Play takes the sample selected in *Quartet* and allows you to play your instrument using up to four channels.

The Record mode is arguably more useful, since it enables you to play your MIDI instrument and have the notes automatically appear in *Quartet*'s active stave. Record mode clears the current voice and allows you to listen to the other three voices while inputting the fourth.

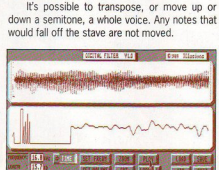
Generally the samples played back by *Quartet* are resolved to 8-bit at a frequency of 16kHz. Only 8-bit samples can be played, but any frequency between 4 and 16kHz is acceptable. Obviously the higher the frequency the better the resulting sound.

Provision is made for adding compositions to your own programs, with examples in Assembler, BASIC and C on the disk.

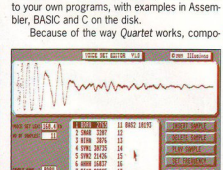
Because of the way *Quartet* works, compo- ➢



■ ***Quartet's* main editing screen lets you fudge your way through the niceties of musical composition**



■ **Digital, the sample editing package included with *Quartet*. Up to 20 different instruments can sit in memory**



■ **Voices lets you combine a selection of samples for use in *Quartet* – cut and paste to your hearts content**

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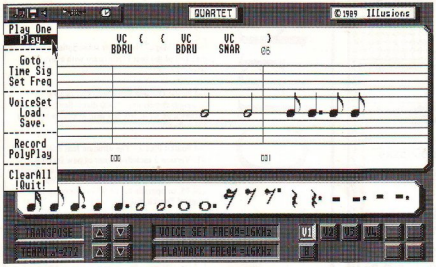
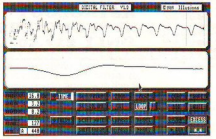
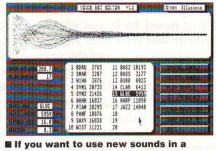


■ **Only one voice, of the possible four, represented by a stave can be displayed on *Quartet's* editing screen. A voice can be called up immediately by clicking on the appropriate voice number**



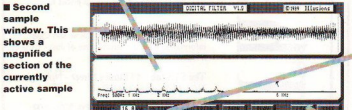
■ **A neat facility in Digital lets you remove those irritating giveaway clicks or modulation effects from looped samples. When you set a loop point in a sample you often find that the resulting sound contains clicks or sudden changes in pitch.**

These glitches can be alleviated by fading-out the end section of a loop and fading-in the start. A fast fade removes clicks while a slow fade makes pitch changes sound more natural



■ **If you want to use new sounds in a *Quartet* song you need to combine all the new sounds into a voice set. The voice set must contain all the sounds used in a particular song. To allow you to create a new voice set or modify existing sets, Voices is provided.**

This program loads an existing voice set, or creates a new set, to which samples may be added or removed. As many as 20 samples can be included in a voice set – as long, that is, as the combined sample length does not exceed 256K



SING YOUR OWN SONG

When you're creating songs you may want to use sounds other than the ones supplied. You can do this easily enough, but you must create a new voice set. A voice set is simply a list of sounds that can be used in a song.

First you sample the sounds you want on disk. (You can find disks full of samples in the public domain or you can create your own using a sound sampler like *Replay 4.)*

Next, load them into a program called Digital (supplied with *Quartet*),which lets you modify the samples so they can be used by *Quartet*. Various options exist to reduce noise, change sample length and alter the frequency. The edited sample is saved as an AVR (Audio Visual Research) file which must go through another program before being suitable for *Quartet*. But first, Digital.

Digital allows you to manipulate samples up to 40K on a 520ST and 64K on larger machines. These size limitations are imposed by the digital filtering algorithms. Besides, you will never want a sample larger than 64K as an individual note on an instrument lasts little more than a second.

sitions lasting several minutes take up very little memory. A typical song might take up 3K. The sampled data might add another 32K and the replaying routines a further 16K. Still, that's little more than 50K for a fantastic composition – well worth it. Memo to software houses: use this tool to add four-channel sampled music to your games – you can't afford not to!

Quartet is absolutely fantastic. You just won't believe the sound you hear coming out of your ST. You don't need a sound sampler to use the program as there are so many instruments provided (and the programmers reckon others will be distributed via the public domain), but if you have Microdeal's Replay 4 you'll be able to add your own voice and other noises to compositions.

If you're the slightest bit interested in making music, or have dreams of going down in musical history, *Quartet* is the package to beat all others. Go for it! ■

LISTEN TO OUR COVER DISK!

Unless you experience *Quartet's* output for yourself, there's no way of appreciating its tremendous capabilities. Try our free demo and judge for yourself!

FORMAT RATINGS

Features **91%**

Quartet's stave can do just about anything you can do on a conventional stave. It's a pity the full note range isn't present

Speed **89%**

Allows precise control, in the form of crotchets per minute, over the composition's replay rate. Shame the maximum sample frequency is only 16kHz

Ease of Use **90%**

Music composition is a doddle – even if you aren't a musician. But Digital and Voices are tricky for beginners

Results **98%**

WYCIWYH – what you compose is what you hear. Absolutely fantastic – and across four channels too!

Format Value **94%**

Cheap at the price – listen to our Cover Disk and decide for yourself!

The Competition

While Replay 4 comes with a drum sequencer, and forthcoming software from Z-bit promises to include more powerful sequencers, there's nothing that even comes close to *Quartet* on its own

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Loads an loads ov uvvers (but only if they're good enough) (Take a look at COMPILATION OF EXCELLENCE by Ocean). Well, that's it for another Month. I just want to say thank you to all of the people who helped keep me out of 'Debtors Court'. Hello Mr & Mrs Holland of Shifnal & Karl with a 6128 & Kazawacky 1100 (for sale folks), who lives in Erdington, Birmingham. & my Mum. (I'm not mentioning her name, I'll be embarrassed enough). & my Mum. A&A's business style works. So thanks for the compliments, you know where we are, and gimmiyaordrs. P.S. THE FIRST 6 PEOPLE PLACING AN ORDER WHO CAN TELL ME WHAT HALF A BYTE IS CALLED WILL RECIEVE A FREE PACK OF POLO MINT HOLES. Clue: BEGINS WITH N. ENDS WITH E & HAS BB IN THE MIDDLE.

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FRONTIERS WITHOUT GAMES

STORY
Jerry Glenwright
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Andrew Neale

A games machine, just one of the many items in your toy box? There's a company that takes very badly to such a low estimation of the ST's considerable – and so far virtually unexplored – business potential...

Cast your mind back a few short months to the beginning of 1989. ST owners, watchers and writers everywhere are buzzing with excitement at the release of a product that is destined to stretch the capabilities of Atari's baby beyond recognition. The product is *Calamus DTP*, but for Signa Publishing Systems – the company responsible – it is just one item, albeit an important one, in a series of innovative, high quality hard and software packages they're bringing to the ST market.

Signa Publishing Systems began life when company head Mike Dale discovered the first multi-lingual word processor for the ST. Realising the potential of the product, he bought the rights to the program, acquired some partners and founded a company to market the program.

The new company, however, did not head in the direction Mike had planned. "I wanted to do certain things," he explains: "they [the two partners] leaned more towards the Amiga, and I just can't relate to that machine." So Dale found himself once again in the position of setting up a new company. This time however, it was to be solely devoted to the ST.

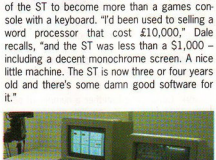
ROCKET LAUNCH

Dale believed that although there was a multitude of good games software on the market, a dearth of serious applications was holding back the ST from achieving its true potential, and stopping it from becoming acceptable to the business buyer.

After all, Atari touted the ST as "power without the price," but a computer can only be as good as its software, and with one or two exceptions, argues Dale, software houses were content to carry on writing games and decidedly mediocre business and productivity applications.

He acquired the rights to the document processing program *Signum*, called his new company Signa Publishing – and the rest, as they say, is history.

Signa believes wholeheartedly in the ability of the ST to become more than a games console with a keyboard. "I'd been used to selling a word processor that cost £10,000," Dale recalls, "and the ST was less than a $1,000 – including a decent monochrome screen. A nice little machine. The ST is now three or four years old and there's some damn good software for it."



■ **One of the most exciting Signa projects is this experimental genlock already attracting interest from several TV companies...**

Many products marketed by Signa originate in Germany, a traditional stronghold for the ST and one in which owners and software houses are continually producing exciting, new and innovative programs. "Signum took off like a rocket and other products started to come our way. We got known by the Germans as a professional operation."

Three packages of which Signa can rightly be proud are the now well established *Calamus*, and two new ones, *O-Line* and *Imagic*. In addition they're working on an inexpensive ST network that could give the machine an enormous boost in the education market

DEEP INTO DTP

Calamus is the flagship of the Signa range. At a tad under £400 the program is the first, and indeed the only, professional quality desk top publishing package available for the ST. Featuring everything that a professional designer could require – and many extra wrinkles that hadn't been available previously at any price on any machine, such as upside down text, text at a variety of angles, unlimited command macros and so on – *Calamus* is worth every penny of its price. And then some.

Signa Publishing have just spent £30,000 to have a Linotron 300 installed at their offices. The Linotron is a professional ultra-high resolution, reproduction/typesetting device which is used in the final stages of magazine page production. (The pages of *ST Format* are produced on a Linotron before being sent to the printers.)

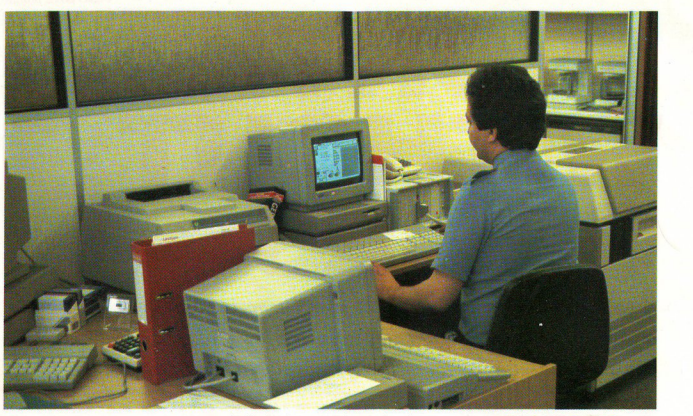
Owners of *Calamus* can send disks of their work to Signa who, for a nominal sum, will output them to the Lino and send back the finished work by return of post. The implications of this are amazing. For the first time, the person in the street with DTP talent but without the necessary capital can have work reproduced to a standard on par with professional printing and publishing companies.

LINED UP

O-line is a new text manipulation program about to launched by Signa Publishing that enables DTP users to do fantastic things with strings of text. Previously, desk top publishers needed to use paint programs such as *Neochrome* or *Degas* in order to create new designs for text or to present text in unusual and interesting ways.

After typing a word or phrase into the program, you're presented with a graphics window with a series of icons for selecting shapes, fills, points or whatever at the side of the screen. Creating the desired text effect is then a simple matter of plotting points in the graphics window, commanding *O-line* to position curves, circles, and other geometric shapes around these points, then placing the chosen word or phrase inside the shape. Fills, shading and shadowing can be added, the image can be reversed, copied or mirrored, then dumped to a printer or imported into a DTP application such as *Calamus*.

The results of *O-line* have to be seen to be ➢



■ **To demonstrate their belief in Calamus, Signa have installed a Linotron professional typesetter device attached directly to a mega ST. Users of the program can have their work reproduced on the machine...**

believed, and for once the computing cliché that you're "limited only by your imagination" has a grain of truth. The program places the power of graphic manipulation programs such the Mac's *Freehand* and *Illustrator* into the hands of Atari ST owners for a fraction of the price of those programs.

Release is imminent, and the program is expected to be priced around £150.

NOW THAT'S MAGIC!

Ever seen those screens in the windows of shops that tempt you to buy expensive goodies by using a variety of animated pictures and text which flash into view, blend into one another, fade out and generally attract your eye? If you have it's not a sight you forget. Now *Imagic*, a control program to allow you to create your own storyboards, adverts and fun displays, is available for the ST.

Produced in Germany, *Imagic* provides you with all the tools necessary for editing, merging and presenting pictures. Effects such as wipe (one picture gradually sliding over another), mirroring, reversing, merging, flashing and scrolling in every direction can be selected via icons from a panel on screen and applied to the pictures you've drawn with *Imagic* or imported from paint programs and scanners.

You can create animated slide shows consisting of up to 2,500 – count 'em – frames, all loaded and run from memory, so there's no time-consuming disk accesses to slow the program down. *Imagic* will work not only with high resolution monochrome screens, but with colour monitors and televisions. And when you've finished your masterpiece you sell it or give it away to friends. Those of us yearning to be the next Steven Speilberg can have the nieghbourhood stores running a variety of your advertising films on their ST monitors.

NETWORK IF YOU CAN GET IT

One of the most discussed subjects concerning small computer systems at the moment is the network. Connecting together a number of personal computers in order to allow them to share resources such as printers, hard drives, tape streamers and modems, and to provide access to programs and data boosts efficiency and significantly improves productivity.

The PC and compatibles world has a large quantity of reliable local area networks (as the small networks are called), but until now the ST has had to remain a single user machine. Colleges, schools and small business wanting to use several STs had to attach separate peripherals to each machine.

The large investment of cash this would require has hitherto deterred many would-be users from choosing the ST. But Signa are currently working on and testing a new local area network specifically designed to exploit the power of the machine – yet at a price which makes setting up an ST network an attractive proposition.

Based on the ethernet principle (using a simple, cheap co-axial to form the network) the network can support up to 255 stations, each with the ability to access peripherals at any other point on the network.

Extensive file locking, password and other safety devices have been built into the net software to filter out possible weak areas, and there are gateways to allow the net to be conected to others running different operating systems such as the industry best-seller Novel.

The net will run on all STs, and has an intuitive "front-end" so that novices can quickly become conversant with its operation. STs interface to the net via a box containing the ethernet electronics, RAM memory and network traffic routines.

BACK TO THE FUTURE

The future looks rosy indeed for Signa. As well as the best selling *Signum* word processor, the innovative *Aladin* Mac emulator and a DTP package against which all others are measured, the company is pouring much time and effort into the development of a genlock/scanner/desktop video system which is already attracting attention from two major television companies in the UK. "I set this company up with one aim in mind," says Dale: "to really get on the professional route with avant garde products, with a view to servicing people's needs. It's an exciting time. The ST is finally coming to maturity."

Like most missionaries, Dale overstates his case. To listen to him you'd almost believe that playing games really screws up your ST. He's absolutely right, of course, to argue that there's a lot more to come from the machine – you only have to have contacts in Germany and the States to see what we're going to be doing in 18 months or two years.

Yet if one considers those two heavyweight machines the Macintosh and the PC, it's evident that the old 8-bit "serious/games" dichotomy is becoming increasingly threadbare. After all, the Mac and PC pioneered the "boss key" – hit the button in a game and a spreadsheet comes up – and it's mostly through the swapping of games, not serious software, that viruses are spread, suggesting that plenty of games are played on these "business" machines. There's nothing wrong with playing games, even if a machine is primarily a workhorse (tell that to the boss!).

And yet you can't blame Dale. It takes dedication and singlemindedness to produce programs like *Calamus*, just as it takes those qualities to produce first class games – and there are plenty of those for the ST, too. So carry on playing, but whatever you do don't make the mistake of calling the ST a games machine. Not, at least, while Mike Dale is within earshot... ■

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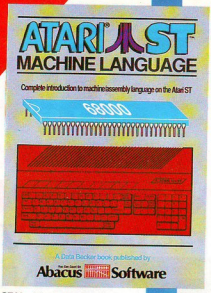

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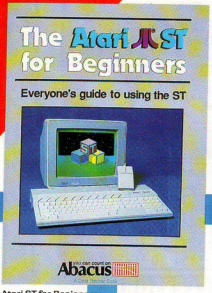

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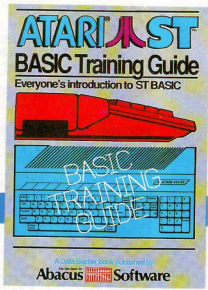

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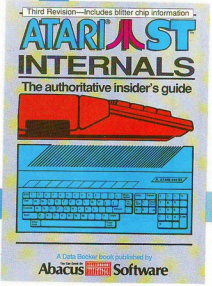

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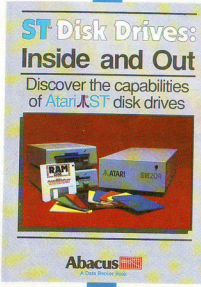

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Programs for 50p, when we all know they cost at least £25 each? If you don't believe me, take a look at a copy of any good public domain catalogue. The disk I'm reviewing this month comes from Goodman PD, priced at £2.50 (£1.25 if you provide your own disk). Number GD71 in their latest catalogue contains five educational games. While none of them will exactly turn a child into an Einstein overnight, they are all of value, and their simplicity will appeal to pre-school and infant children.

Four of the programs come under the "Kid" category, a series written by an American programmer, D A Brumleve, who has a special interest in educational software. These are Kidgraph, Kidmusic, Kidpiano and Kidgrid2. If you see other PD programs with the "Kid" prefix, they're more than likely from the same source and worth looking at.

Kidpiano is the simplest, and slightly disappointing. (Having said that, no doubt 200 readers will write in and say "Well, my children loved it!") It gives a three-octave keyboard on the screen, and a choice between organ and piano sounds. Click on a key and the note plays. I suppose you'd have cause for complaint if it didn't; but that's all it does.

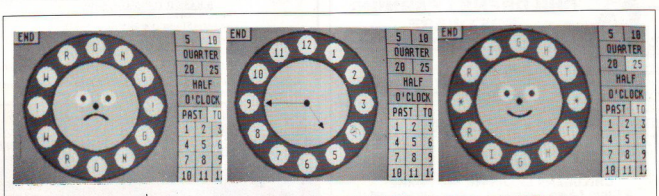
There are better keyboard programs in the public domain, such as Deluxe Piano. It's a complex program designed for adults, but your child can have more fun pressing the ST's keys to get different sounds than moving the mouse around.

Kidmusic puts eight pictures on the screen. Click on one of these to hear a simple nursery rhyme tune. For example, the teapot gives you... well, it sounds like Baa-Baa Black Sheep to me. Very young children will love hearing Rock-a-Bye-Baby, Old MacDonald and London Bridge is Falling Down.

CREATIVE PLAYTIME

Two similar programs are Kidgraph and Kidgrid II (a follow-up to the box-office smash, Kidgrid I), both scaled-down art programs. Kidgraph prints a 28x19 grid on-screen and a palette of 14 colours down the side. Click on a colour to choose it, and click on a square in the grid to fill it in. The left mouse button gives you one dollop of colour, while the right gives a continuous fill. There's an Erase option – but take care! There's no second chance, an accidental click wipes out your masterpieceand it's tears before bedtime.

There are three sample paintings to show that you can indeed produce decent results, and you can save your own offerings to disk. It's hardly *Degas Elite*, but apart from its minor faults it's worth having for the infant/young junior child to play with. They can get used to creating designs and seeing how pictures can be built up from smaller shapes – in the way that Logo does, when they encounter that at school.



■ **Three faces of Miked's cute Time program (reviewed over the page): get it right and you're suitably smiled upon**

■ **Tiffany's barnyard: a classic children's game – available *now* for your ST!**

Kidgrid2 is similar but the graph becomes a grid made up of larger squares, each divided into triangles by two diagonal lines. It is capable of subtler designs and drawings with save/load/erase options again available.

The final program on the disk is Barnyard, a computerised version for two children of the old Matching Pairs card game. There are 28 gates on the screen – click on one and the name of an animal appears. You have to try to find a matching name. Good for both memory and spelling. The game has survived a long time, so children must enjoy the comical animation, the rhythmic music and the shuffling of the cards each time round.

Though none of these programs will drive anyone wild with excitement, they provide younger children with entertainment and test their skills in the use of shapes and colours. Regard them as "Creative Playtime." Give your child a disk, on which favourite games can be kept. And if he or she wants to erase any of them because they're boring, don't forget: they only cost 50p.

Miked's programs

MACHINE: ALL STs

PRICE: £9.95

CONTACT: MIKED

FROM: 0752 671464

The young child who has mum, dad, the ST and a copy of the Time program from Miked has no excuse for not getting to grips with the clock-face. Mum and dad need to do some ground-work first, to introduce the idea of the fingers on the clock, since Time (the program, that is) makes no attempt to teach you about big and little Hands.

The "Teach" option displays a face with the hands set to a random time. The numbers being pointed to flash, and as the child clicks on one with the pointer, the time is shown in boxes at the side of the screen. There's a mix of words and numbers, with boxes for half, quarter, past, to and so on, as well as 20, 25 and so on. If the child can use the mouse and can read a little, the relation between clock hands and the time will slowly sink in.

There are a couple of Test sections, one with help and one without. In both the clock is drawn and the child must click on the appropriate boxes to say what time it is. If the answer's right you get a smiling face; and if it's wrong, a frowning one and the correct answer. The best educational programs are those which choose a simple subject and cover it thoroughly in a sensible manner: this does just that.

All Miked's programs are well-presented, colourful and lively, and they're (comparatively) cheap because, as the company says, "We don't include any fancy packaging.". In fact there's no packaging at all, just a disk and a covering letter, with the instructions in a DOC file on the disk for you to print out for yourself if you wish.

SNOOKERED

Trust the reviewer to go straight in and find the one fault in the program, by pure fluke. Miked's Word Search program creates a grid of jumbled-up letters on the screen, and you're asked to find a number of words hidden in there. It's a popular game, as its constant appearance in magazine and newspaper competitions testifies – in fact it could be a lucrative skill to have!

Word Search offers 40 categories of words and as if to confirm my mis-spent youth, I chose the Snooker option. The program gives you the grid, with the hidden words displayed alongside (an option to turn this off would help), and when you spot a word you must click on its first and last letters. This draws a red line through the intervening letters. All words are in straight lines, backwards or forwards, up, down or diagonal.

I spotted E-U-C, and clicked at once. "Wrong!" it told me. What? There it is in black and white, I yelled, CUE, it can't be wrong! Sure enough I found another C-U-E combination else-

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or please telephone if you need further information
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- Barrie Capel - GFA User Vol 1 Issue 4

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- Nic Outteride - ST User July 1989
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SUMS: ACHIEVE GREATNESS

LCL, one of the leading exponents of educational software, have just launched a complete GCSE course for the Atari ST which the company believes is the first of its kind.

Micro Maths **consists of 24 programs with two books and is being pitched as a sequel to the highly successful** ***Primary Maths*** **course.** ***Micro Maths*** **aims to take users from secondary school entrance level right up to GCSE.**

LCL will also be releasing ***Mega Maths****, a step by step A-level course, in a month's time. This effectively makes the range a complete course of every maths lesson a child is likely to have at school.**

Micro Maths is priced at £24. LCL can be contacted on 0491 579345.

■ **Are there educational packages, either commercial or public domain, which you'd recommend other parents to buy – or avoid like the plague? Let me know: Mike Gerrard,** ***c/o ST Format,*** **4 Queen St, Bath BA1 1EJ.**

where, which was correct, and I began to doubt the value of the entire program. An hour later and I realised I'd hit on the one mistake in the whole 40 categories.

This is a fun program, and absolutely compulsive. Its educational value? It's good for spelling, but also perhaps for logical thought as you try to work out the remaining words. ■

WHERE TO GO FOR EDSOFT

If you're interested in educational software for the ST, try contacting one of the following companies. Most produce catalogues of programs, sent free on request

BBytes Systems
19 Southfield Road,
Hinckley, Leicestershire
LE10 1UA

Children's Learning
PO Box 119, London
SW14 8BL

Database Software
Europa House, London Rd, Macclesfield, Cheshire SK10 4NP
[Database's *Fun School II* recently became the very first educational software program to occupy a place in the charts]

HAT Software
21 Wyle Cop, Shrewsbury, Shropshire
SY1 1XB

Kosmos
1 Pilgrims Close, Harlington, Dunstable, Beds
LU5 6LX

Microdeal
PO Box 68, St Austell,
Cornwall PL25 4YB

Miked
6 Devonshire House, Stonehouse,
Plymouth PL1 3HE

Rickitt Educational Media
Ilton, Ilminster, Somerset
TA19 9HS

Softstuff
19 Quarry Hill Rd, Tunbridge, Kent
TN9 2RN

ST Club
49 Stoney St, Nottingham
NG1 1LX
If you're wondering why your commercial company or PD library isn't listed here:
a) don't take it personally, and
b) write and tell me.

ST Format **is keen to encourage educational use of the ST. Whether you write, sell or use educational software we want to hear from you.**

Send catalogues, review samples, recommendations and suggestions to: Mike Gerrard, *c/o ST Format,* **4 Queen St, BathBA11EJ.**

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MULTIFACE must not be used to copy, reproduce or infringe in any way any copyright material without the clear permission of the copyright owner. **ROMANTIC ROBOT** neither condones nor authorises the use of the **MULTIFACE ST** for the reproduction of copyright material - to do so is ILLEGAL. However, to prevent any piracy, the **MULTIFACE ST MUST** be attached to the cartridge port to run the programs it saved.

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DESKTOP

Another barrow-load of tips and queries answered by your ST Guru.
This month we check out how **Neochrome** *files are constructed*

PICASSO, MEET STOS

The following is a STOS routine which saves a picture you've drawn on screen to disk and then redraws it point by point. This contribution comes from **Paul Welch** of London.

```
100 erase5: reserve as data 5,20000:
A=start(5): hide: mode 1: key off:
curs off: cls: set line 1,4,2,2
125 on error goto 275: centre "left
button: view right button: draw":
repeat: until mouse key>0: if mouse
key=1 then cls: goto 250
150 cls: show on: while mouse key>0:
wend: while mouse key<2: if mouse
key=1 then gosub 200
175 wend: doke A,-1: hide: bsave
"draw.mbk",start(5) to A+2: goto 100
200 X=x mouse: Y=y mouse: if X=PREX
and Y=PRY then return
225 polyline X,Y TO X+1,Y+1: doke
A,X: doke A+2,Y: PREX=X: PRY=Y:
A=A+4: return
250 bload "draw.mbk",5: set line
1,4,2,2: repeat: X=deek(A):
Y=deek(A+2): A=A+4: polyline X,Y to
X+1,Y+1: until X=-1
275 wait key: resume 100
```

MORE *NEOCHROME*

After our plea for *Neochrome* tips two months ago we were inundated with helpful hints. Now **Eti Rosenthal** from Israel has found a book which can help out still further. If you're stuck for a manual on using *Neochrome*, or if you're a paint package freak, then look out for Compute's *ST Artists* by Selby Bateman and Lee Noel, Jnr.

FILE FORMATS

Continuing our look at how file formats are constructed, we've now got our hands on the complete listings of every paint package file (except *Quantum Paint*). Many thanks go to **Martyn Dryden** from the South West Software Library for his assistance.

word = 2 bytes
long = 4 bytes
palette = The hardware colour palette is stored as 16 words. The first word is color register zero (background), last word is color register 15. Each word has the form:

Bit: (MSB) 15 14 13 12 11 10 09 08 07 06 05
0 0 0 0 0 R2 R1 R0 0 G2 G1

04 03 02 01 00 (LSB)
G0 0 B2 B1 B0

R2 = MSB of red intensity
R0 = LSB of red intensity

G2 = MSB of green intensity
G0 = LSB of green intensity

B2 = MSB of blue intensity
B0 = LSB of blue intensity

The intensity ranges from 0 (colour not present) to 7 (highest intensity).

Example: (red=7, green=3, blue=5 ! –> 0735 (hex)

1	long resolution (0 = low res, 1 = medium res, 2 = high res)
16	words palette
12	bytes filename (" . ")
1	byte Left colour animation limit (starting colour number)
1	byte Right colour animation limit (ending colour number)
1	byte colour rotation speed
1	byte colour rotation direction
1	word colour rotation duration (number of iterations)
18	longs reserved for expansion
16000	words picture data (screen memory)

32128 bytes total

SOUND, MAESTRO

Alex Theedom from Peterborough wants to know whether it's possible to use *Mastersound* samples within the STOS *Maestro* package.

There's no reason why *Mastersound* samples can't be used in this way since they're compatible with *Prosound* – the ST standard for samples. But *Mastersound* will only sample at rates of 5KHz, 7.5KHz, 10KHz and 15KHz, so it's not possible to use the variable playback rates found within STOS.

<*NEOCHROME* Animation>
NOTE: To get this feature on versions 0.9 and later select the Grabber icon and click the both mouse buttons in the eye of the second R in the word GRABBER.

Strangely some versions of NEO only require you to press the right button, not both. Hmmm...

1	long magic number BABEEBEA (hex) (seems to be ignored)
1	word width of sprite in bytes (always divisible by 8)
1	word height of sprite in scan lines
1	word size of sprite in bytes + 10 (!)
1	word x coordinate of sprite (must be divisible by 16) – 1
1	word y coordinate of sprite – 1
1	word number of frames
1	word animation speed (larger means slower)
1	long reserved; should be zero

22 bytes total for header

?	words sprite image data (words of screen memory) for each sprite, in order

More on some of the less well-known formats next month, but if you can't wait until then contact the South West Software Library for further details – see our PD pages for their address.

PROCOPY UPDATE

Procopy, the ST copier, is no longer distributed in the UK after Proco's American base stopped sending updates to the British distributing company. For those of you who are looking for an updated version, you can still buy it from Proco Products directly. Contact 0101-401-568-8459, PO Box 665, Chepachet, RI 02814, USA.

There are many pirated versions of *Procopy* circulating at the moment. No version above 1.50 was ever distributed here so steer clear of 2.0 versions and above.

VIRUSES – PROTECT OR DIE

We've had a desperate plea about viruses this month from **James Lea** of Sussex. He's found himself well and truly infected and is worried that his machine has been permanently virused. The problem, however, is not that the machine has been infected but that the disk he is booting up with contains a virus. A virus copies itself into the memory of the machine and then subsequently copies itself back out to all disks placed in the drive unit.

The way around this is to get hold of a PD virus killer or, better still, CRL's excellent *Virus Killer* software. Now, switch on the ST without ➢

Distinctly Digita

Cleverly written and always favourably reviewed in the press, Digita produces a range of powerful, low cost software for the home and business user.

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placing any disk in the drive. It will take a while but the machine will eventually come up with a Desktop. Insert the virus killer in the drive and double-click on the main program. Now use this to wipe the viruses. CRL can be contacted on 01-533 2918 and *Virus Killer* costs £9.95.

Whilst we're on the subject of viruses, here are some facts courtesy of **Matthew Verrinder** of Pontypridd which may help:

1. Viruses can't copy themselves onto a disk if it's write-protected, so write-protect as many as you can.
2. Viruses aren't all that common. Most games are virus free as is PD software, although the occasional one has been known to be infected – and no, we've never put one on the Cover Disk.
3. If you suspect you've got a virus then switch off your machine and wait for a few seconds. Don't re-boot with the same disk. Viruses can survive a reset so don't depend on this.
4. Try using up-to-date virus killers since these can detect the difference between an auto-booting program and a virus.

If you want to find out more about viruses and their history then track down a book called *Computer Viruses – A High Tech Disease* by R. Burger, published by Abacus.

TURNING TECHNICOLOUR

There's a problem with the colours in GFA Basic which means that Setcolour and Colour use different values for the same colour.

Listed below are the colour names (assuming the palette hasn't been changed), and the relevant number for Setcolor and Colour. Colour values should be used in Deffill, Colour and Fill.

Colour value	Setcolour	Colour level
0	0	white
1	15	black
2	1	dark red
3	2	dark green
4	4	dark blue
5	6	dark turquoise
6	3	dark yellow
7	5	dark purple
8	7	grey
9	8	dark grey
10	9	red
11	10	green
12	12	blue
13	14	turquoise
14	11	yellow
15	13	purple

YOUR CONDUCTOR SPEAKS

The trouble with sampling music is the amount of memory it takes up – particularly if you want good quality samples and need to take them at a high rate. No matter how large your disk space might be, you're still restricted by the amount of memory that you have in your machine – and that means 4MBytes at the most.

So what do you do if you need to take samples that are longer than just a few minutes. As **D.C. Derrick** from Somerset found out, you need a sampler that works in real-time. But why aren't there any around?

Until recently they've been impossible to program because to sample sounds and send output to an exterior device would take up too much processor time. That situation has altered because hard drives have much faster reading and writing operations now, but we still need someone to produce the software. This is where 2-Bit systems come in.

By the time you read this, 2-Bit will be marketing the only 16-bit CD quality sound sampler currently available for the ST. With the enormous amount of data required to achieve this quality, they have had to sample directly to hard drive. The software will only run with the faster hard drives but there are plenty of these out there.

CD quality sound doesn't come cheap. At £600, the as yet unnamed sampler, is also the most expensive on the market. If you've got the dosh to spend contact 2-bit on 0582 457348 for more details.

DOUBLE THE SIZE

With the vast number of PC emulators appearing recently, we're getting a lot of enquiries about how to link a 5.25-inch disk drive to your ST. Most 5.25-inch drives will connect to the ST but it's a good idea to go for one of the better models since these are very reliable. Cumana make some of the best and these can be purchased from most places – just scour our ads for one.

They attach to the second floppy port and are treated exactly like any other second floppy. Consequently, you don't have to have a PC emulator to use them.

COLOURFUL WORDS

Colin Strickland from Chesire is having problems printing text in GFA Basic. He wants to know how to change the colour of text without using the TEXT command to print. This requires you to enter the pixel address of the start and not the character location.

Ordinarily, DEFTEXT has no effect if you use it with any PRINT commands but it does make changes to the display if you use TEXT. The way around this is to open a window first. Now the PRINT command will respond to the DEFTEXT parameters. This unfortunately reduces the size of the screen and text is printed at a slower speed.

Opening windows will change the look of the screen but there is a way to clear the window boxes due to a slight error in GFA Basic. Grab the whole screen just before opening the window with the SGET AS command. Now open the window and follow it with the command, SPUT AS. All of the window area lines are removed and you can use the PRINT command in conjunction with DEFTEXT.

GET COMPATIBLE

As it stands it's not possible for you to save a STOS picture and load it up in another package. However, the way that STOS stores the data on disk means that you can save STOS's raw data so that it will be compatible with other formats. This is how it's done, courtesy of **Colin Strickland** from Chesire (again).

```
5 mode 0: rem choose required mode
for picture
10 rem screen converter for GFA
Basic
20 rem Load screen
30 reserve as screen 7
40 load "FILENAME.NEO/PI1",7 :Use
whicever filename you want
50 rem get palette
60 get palette (7)
70 save "FILENAME",start(7) to
start(7)+32000
80 for I=0 to 15 :rem choose
required number for palette
90 print hex$(colour(I))
100 next I
```

The new data could now even be read into GFA Basic using the command: **Bload "FILENAME",Xbios(2)-34**

WIN LOADSA DOSH

If you're having trouble with your ST or if you have any hints or tips which you think other ST owners will drool over then send them immediately to: Desktop, *ST Format*, 4 Queen Street, Bath. BA1 1EJ. Each month we give away £30 for our favourite tip, so if you're looking for some extra dosh - get writing! Paul Welch from London wins this month's coveted prize for his STOS advice.

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ST FORMAT LETTERS

New editor Steve Carey, fearing incendiary devices and rude remarks, peers nervously into the **Format** *postbag: but finds instead a warm welcome and constructive comments*

ADVENTURES OF A DISK DETECTIVE

I recently bought a copy of *Protext* for my ST word-processing, and I thought that anyone who, like me, has an early single-sided drive ST might be interested in a problem I encountered. *Protext* is supplied on doubled-sided disks, but that's not the problem – Arnor changed them for single-sided within two days! When I'd installed the program to run with my Star LC24-10 printer, everything seemed to be OK except that the printer wouldn't underline, and wouldn't print in any typeface but the one in current use on the printer. In other words, the software and printer were battling for control: and the printer was winning!

I was puzzled by this, since the correct printer driver had been installed, as was confirmed by the *Protext* Status Line. Arnor were puzzled too, as if the driver showed up there it must have been installed properly and there'd been no other complaints from Star LC24-10 users. After a lengthy chat with Arnor at the PC Show, it began to look like there must be something wrong with the printer.

It was then I noticed something odd. The printer driver on my start-up disk was smaller than the printer driver on the master disk. Funny, I thought. I tried to re-install the driver, and this time noticed a message flashed up very briefly on-screen, to the effect that the disk was full and the installation was unsuccessful. When I'd installed the program the first time I must have been looking away when that message was flashed up, as it's only on-screen for a few seconds. Although I'd notice that the start-up disk was full, software companies often use the "0 bytes available" as a protection device – certainly Arnor's spelling dictionary disks are a little like that – so I didn't think anything of it. What had happened was that the printer driver file had been opened and partly transferred, which was why it appeared on the status line, but not all of the driver commands had gone across. In order to get the full driver on a single-sided start-up disk, you have to remove the CONFIG.PRG file and put it on a separate disk – something the manual doesn't tell you.

That done, and the printer and software talking happily to each other, I must say that *Protext* is wonderful – having seen it in action on the Amstrad PCW I knew it was good, but the ST version is superb.

Mike Gerrard
Huntingdon, Cambs

Trust those canny Arnor chaps to come up smelling of roses, blatantly replacing your disks within two days (disgraceful), and then quite openly and unashamedly taking an interest in your problem (despicable). No doubt they'll even be letting others with a similar problem in on the secret. It really is appalling.

Could this be the same Mike Gerrard, I hear you ask, who writes the education pages for ST Format? It could indeed, well spotted, very observant, blimey you don't miss a trick. – (Hands up if you realised I only mentioned that to prevent half a dozen of you writing in claiming a prize for spotting the connection. Speaking of which...)

BOO-BOOS PROBLEM

Has Boo Boo Bear recently been appointed Picture Editor of *ST Format*? Only I think he chose the wrong picture on page 7 (issue 4) in your Show Report. The picture subtitled "and the Stacy..." must surely be a Portfolio. Is the prize in the "Spot The Deliberate Mistake Competition" a Stacy or a Portfolio? I don't mind which I win, but if you can run to a Stacy I would be really grateful.

On a more serious note, I think Atari UK are making a major mistake not selling the floppy drive Stacy in Britain. I would certainly be interested in buying one, but whether I could afford the hard drive version is another matter. In any case, why go to the bother of designing and producing a floppy drive version if Atari do not believe there is a market for such a machine?

Robert Harrison
Manchester

Firstly, couldn't agree more with you about the strangeness of Atari's decision. Having seen it in operation, I feel it has enormous potential: the screen is excellent, and the price is right. It will appeal not only to professional musicians but to anyone who ever needs to work on the move. But few of us can afford well over a grand in one lump.

Secondly, we here on ST Format *wish it to be known, and let us make this quite clear, that the mistake to which you refer was in no way the fault of Richard Monteiro. He could not possibly be to blame, and we shall sue anyone who alleges otherwise.*

BLACK OUT

How is it that every game has white people in it as the main characters – and usually as their minor characters as well? Why do software companies never use black people in their games or in advertisements?

Here's a rough count of adverts with black people in, compared to white people, from issues one to four of *ST Format*. Adverts were counted only once and only if a human appeared in it.

Number of white people = 38

Number of black people (foreground) = 4

Number of black people (background) = 3

Why do companies *always* use white people? Magazines tend to be just as bad – including yours. I know you will argue that you used a picture of a black person on issue two's front cover, but that's about the only time.

I would be interested to hear other people's views on the subject.

Joseph Adjare
Weymouth, Dorset

We're used to hearing the argument that computer software is sexist and pro-male, but I don't think we've had a similar observation made until now about racist tendencies. You're right about games featuring white protagonists, Joseph – there's a tenner on offer to anyone who comes up with a list of black central characters in ST games – but I don't think you do your case any favours with your statistics.

Four out of 42: what

A USE FOR A CPC !

I was wondering how to raise cash to buy a monitor for my Atari 520 STFM when I thought about my Amstrad CTM 644 colour monitor, lying in a pile of dust in depths of my room.

Is it possible to connect this monitor with my Atari? Oh yes! I had better tell you the monitor came with the Amstrad CPC 464.

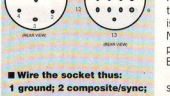
Many friends have similar queries, so I'd be grateful if you could clear up my problem.

Chris Tarbun
Northampton, Northants

PS Thanks for *Xenon II* and *Blood Money*. They are great games!

You can indeed use your CPC monitor, Chris, and it's fine for games – though I have to say it's not much fun trying to word process with its garish and kind of "buzzy" colours. These things I know because for ages I had the two plugged together.

Show the accompanying picture and instructions to your local electrical or computer shop. They'll insist – as mine did – that the thing is impossible, couldn't be done and so on. Then they'll look again and tell you it'll be ready a week Thursday, that'll be £17 and would you like to pay now?



■ Wire the socket thus:
1 ground; 2 composite/sync; 3 blue; 4 green; 5 red
The red, green and blue outputs need resistors to get the brightness right: this is better (and safer) than opening the monitor. 120Ω should be about right, but you may need to experiment. The composite sync can be taken from the composite video output.

Atari connections:
3 composite video; 7 green; 6 red; 11 blue; 13 ground
The diagram is taken from the plug and is therefore the reverse of that shown in the Atari manual.
***ST Format* cannot be held responsible for any damage done to you, your ST or your CPC monitor if in doubt, get an expert to do it.**

percentage do you think would be fair, when black people in Britain are well under 10 per cent of the population? As for black people in our pages: you mention the cover of issue two, and I'd refer you also to the music feature in ST Amiga Format *issue 12.*

I wonder whether ST gamesters – who are overwhelmingly male, and the majority of them white – might have problems relating to a black central character in a game, just as they might have problems relating to female characters.

Somehow I doubt it: I often choose to play as female characters when the option is available, such as in Barbarian II *and more recently* Hound of Shadow.

Is Joseph being over-sensitive? Or is the software industry, including ST Format, *being insensitive? Write to 'Black Out,'* ST Format, *4 Queen St, Bath BA1 1EJ.*

ASK AND YOU SHALL RECEIVE

I would like to congratulate the entire *Format* team for producing such an excellent magazine. The graphics and music sections are particularly good, and the DIY project was very interesting – perhaps it could become a quarterly feature.

However, I have a few suggestions:

1. A humorous column, and
2. A larger Public Domain section.

I also have a few suggestions for the Cover Disk. Maybe in a future issue you could include NEOchrome, the Public Domain paint package, or a Printed Circuit Board designer.

Maybe you could also include some educational programs which would complement the different GCSE courses.

David Holmes
Cambridge

We're constantly seeking, I think the phrase goes, to improve ST Format *even further (thanks for the kind remarks). Consequently our PD coverage – and education section, which often includes some PD program reviews – are now both two page regulars. The "humorous column" is trickier, and we'd prefer to stick to what we do best.*

After all, there's nothing more irritating than a self-styled "humorous column" that lives up to only one of those claims, unless perhaps it's winning the pools and then finding the coupon in your back pocket.

Which isn't to say you won't find the odd rib-tickler and jolly old jape cunningly concealed in our pages. Whether that's a threat or a promise we'll let you decide.

QUITE RIGHT TOO, COULDN'T AGREE MORE

I only recently upgraded to an Atari ST after having a CPC 6128 and a BBC for many years and find the GEM system very confusing indeed. To make matters worse, mags – *ST Format* included – seem to assume that all your readers are able to buy the machine, switch on and away you go. I realise that you get a manual when buy the machine but it's not the best in the world, as I'm sure you'll agree.

My point is this: for years I bought *Amstrad Action* and must admit that it gave tremendous value for money each month as you picked up something fresh.

It included, for example, a Help Line where all problems were explained (and many a time I had the same one), a feature on each word processor and readers tips on how to get the best out of each, as well as test reports on all the latest software and hardware and a section for complete beginners.

I trust that I am making a decent attempt to contribute towards the mag and that you understand that not everyone is a computer genius and some tuition and advice would be appreciated.

R Miller
Glasgow

H'm. Tricky one, this. We do try hard not to assume too much knowledge in our readers, but there's nothing more irritating for someone who knows what they're doing than to have it spelt out in excruciating detail all over again, unless it's a self-styled "humorous column" that lives up to only one of those claims.

Incidentally, the fact that before the present editor took over from Richard Monteiro he was, for 16 issues, at the helm of the magazine to which you refer – "tremendous value for money," R Miller, Glasgow – is neither here nor there. We shall sue anyone who suggests otherwise.

And speaking of Amstrad CPCs, see the letter on connecting your dear old (and we do mean dear and old) CPC monitor to your brand new ST ("power without the monitor'). We don't just throw this magazine together, you know!

DEATH TO THE XENITES!

On Wednesday the 11th, at precisely 5.30, my house was finally at rest. I nervously moved towards the computer to insert the fatal disk. This time there were to be no interruptions. This time the Xenites were going to die.

As it turned out, everything went exactly to plan. It was a piece of cake: he had no defence against my three lasers, bullets that were bigger than my ship, two shields and enough power-ups to supply the national grid. In fact, my armoury was so big I even felt sorry for him.

Well, the reason I wrote in was because I wanted to see if I am the first person to finish *Xenon 2*. Or if not, how many came before me? All I ask is for anyone who has finished it to write to the address below. To prove they have finished it, send me a quick summary of what happens at the end.

Just one more thing, in answer to the question at the end, I can say that the game was most definitely good enough.

Jonathan Khan
27 St Catherines Rd,
Broxbourne
Herts EN10 7LD

Well, all of us round here finished Xenon 2 *yonks ago, obviously (hem hem), but how many others have? In fact, I wonder how many games ever do get finished?*

And if a game has levels you never get to see because it's so hard, are you getting value for your money? Write now to 'I Don't Reckon We Are Getting Value For Money To Tell You The Truth, And I'll Tell You Why...,' ST Format, *4 Queen St, Bath BA1 1EJ.*

BOMBS AWAY

I've owned my ST for only four months and I've started having problems with the childish bombs-across-the-screen virus: the program freezes and little "Spy vs Spy" type bombs appear across the screen. The ST has to be reset to clear the screen.

Needless to say I find this infuriating. However, there is a very interesting aspect to this. No way would I purchase software from "Captain Pugwash" and the likes. The only programs I have run have been from reputable and "top-price" retailers, apart from the ones supplied with *ST Format*.

How did the virus get onto my disk collection?

Andy Singleton
Holmfrith, West Yorks

Not bombs, Andy, and not a virus: just Atari's hilarious way of telling you you've just crashed. It's a nuisance, but it does no damage. You'll soon get used to it, unfortunately. But you're quite right to think that the best way to be sure of avoiding viruses is not to buy pirated software.

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Click on "Load" then "OK" with the mouse. The drive attempts to load data. An error message now appears, but the drive stops whirring. Click on "Cancel:" the game continues, and your drive lives to load next month's Cover Disk.

A Kennedy
Dunblane, Perthshire

PS Who printed the spine of *ST Format* upside down?
PPS Richard Monteiro (editor of *ST Format*), has fallen under the clutches of Teresa "T'zer" Maughan, and now writes the console pages for *Zero* magazine as well as editing this magazine.

Thanks for the tip-off about Monteiro. We were led to believe he'd taken up a prestigious job elsewhere in computer journalism, but evidently the rumours were untrue.

Seriously, though, Richard has joined the ranks of the self-employed, writing for young Zero, *as you say, but also for* ST Format *(he's our new "celebrity" Disk Editor) and indeed our sister titles* Amiga Format *(never heard of it),* New Computer Express *and that fine old 8-bit battlehorse* Amstrad Action.

How many letters did we get about the whirring disk problem? Er, one, actually. Yours.

And you're wrong about the spine, which was printed the correct way up. It was the rest of the mag that was the problem.

ANIMATION FOUR ALL

On last month's Cover Disk there was a program which animated the Channel Four logo. When I tried to load it, however, a message appeared saying that there wasn't enough RAM to animate it.

You stated that the program was for all colour STs: I have a colour 520ST. Did you make a mistake, or has Atari neglected to put my full 512K of RAM into my ST?

Paul Sheehan
Llantwit Major
S Glamorgan

Oops: our mistake, mostly due to being between Disk Editors (and indeed magazine editors) at the time. As partial compensation, on this month's Cover Disk you'll find two more animation sequences, which are guaranteed (fingers crossed) to run on all colour STs.

COVER UP?

I would like to congratulate you on an excellent publication – of all the ST mags currently available you are easily the most enjoyable read. But there is just one thing that is starting to niggle me, so I am hoping that you will be able to nip it in the bud right here and now.

How do you go about deciding which demo game is included on the Cover Disk? As much as I find your games reviews well researched and usually very accurate, and as much as I trust your noble bunch of reviewers to be completely and utterly honest with us, it does strike me as being a rather eerie coincidence that in every issue since the first one in August, the Cover Disk game has had not only an excellent write-up, but has also come away with a much-prized *ST Format* Gold Award!

In order to put my suspicious mind to rest, all I would like you to tell me is that the software industry holds your magazine in such high esteem that they are all falling over themselves to supply the Cover Disk game, and so you have a large variety of very good software at your disposal, naturally choosing the best to maintain and increase circulation.

It's just that I have this nightmarish vision of a deal being struck in some dingy little office somewhere with the conversation going something like: "Okay then *Format*, we'll supply you with the goods only, and I mean only, if we get a right bleedin' good review and an *ST Format* Gold Award to boot!"

Derek Griffiths
Faversham, Kent

Good grief Derek, you're a suspicious one and no mistake! You also put us in a very neat Catch 22.

If we insist on brilliant fully playable games demos for our Cover Disk – games which therefore in their full versions fully deserve the much-coveted Format Gold award *– you accuse us of all kinds of dirty dealing. Yet if we bung on any old rubbish we would lose readers, and quite rightly! What do we do?*

I would argue that the only real proof is the games themselves. Format *issues one to four featured* Bloodwych, Blood Money, Xenon II, and Interphase. *Does that line up of games, which without exception were very favourably received wherever they were reviewed, seriously suggest to you skullduggery and double dealing? If that's really what you think, how do we prove you wrong, short of putting some pile of old puke on the Disk?*

We'd be very happy if we happened to choose demos every month of games that then deserved the much-coveted Format Gold *award: but we can't promise it. What do others think? Satisfied with our demos? Write to: "Cover Up," ST Format, 4 Queen St, Bath BA1 1EJ.*

And just to prove we don't bear you a grudge, Derek, you're the winner of this month's £25 software prize. But don't misinterpret it as hush money, OK?

SHOOT FIRST

I am writing about the "cheeky chappie" letter in the October issue of the best magazine for today's market. I dislike PD Daveridge's attitude of shoot first, ask questions later.

If he'd asked for help first and judged later, he might have found out the following: *GFA Basic* is usable in low-res and the full menu bar is accessible using the [F] keys and [shift] and [F] keys. Thus:
[F1] to [F10] top row of menu bar;
[Shift] and [F1] to [F10] bottom row of menu bar.

[Shift] and [F10] (run) is the most important key, as it allows you to run the free demos given away on the Cover Disk each month. They look so much nicer in the full 16 colours of low-res instead of the miserly four in medium res.

I don't think I speak for myself when I say that most ST users are only pleased to help whenever possible if we are asked nicely. Treat people as you would like to be treated yourself, that's my motto. – Have a nice day.

R J Bradley
Preston, Lancs

Well, quite. Though I might take issue with your claim that you don't speak for yourself.

WHAT IS THIS COMMS?

As a relative newcomer to the ST scene, I would like some information. Over the last few months I've seen numerous references to communications software. I understand that with the aid of this software access can be gained to databases and so on, and that it is also possible to download free software and to send messages to other users.

Secondly, I've seen adverts regarding solderless memory upgrade boards. Have you reviewed any? Is it possible to upgrade a 520STFM to a full 1MByte with these upgrades or would you recommend sending my computer off to a firm to have RAM chips soldered in by them?

A Jones
Clwyd

Comms is a fascinating topic, or at least so Mark "SysOp" Higham keeps telling us (and keeps telling us, and keeps...). Mark's occasional series on the subject will be back next month, we fervently hope, so tune in again.

In the meantime try and get a copy of ST Amiga Format *issues 4 and 9 in which we looked at the subject in detail.*

Unfortunately both issues have sold right out. (Moral: never, under any circumstances, ever miss a copy of ST Format*: you don't know what you might miss!) We shall be taking another close look at the subject early in the new year – next issue, we hope. So stay tuned!*

And it is quite possible to upgrade your ST yourself. Again, we've covered the subject in an earlier issue: ST Amiga Format *10. It really makes no odds whether you do it yourself or send your machine off to have it done for you.*

Just shop around among the ads in this issue for a good deal, and if possible use a company recommended by friends or ST specialists. Tonic Audio currently have a special promotion going: see our news pages for more information. ■

■ **If something's bugging you, if you take exception to anything *ST Format* does, don't just sit there muttering: get writing!**

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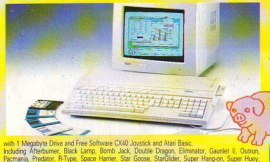

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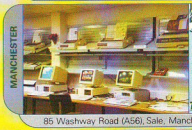

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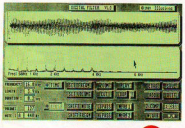

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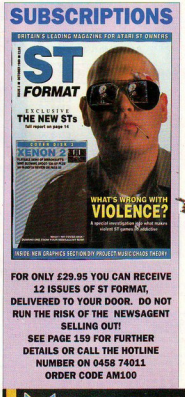

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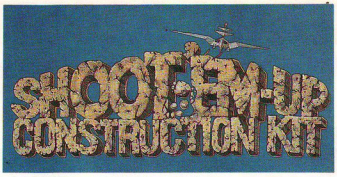

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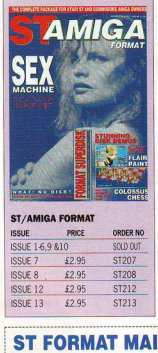

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LASERS ON OVERLOAD

STORY *Simon Williams*
PHOTOGRAPHY *Anne Marie Thornton*

Following* ST Format's *definitive survey of low cost laser printers, a spate of new product launches has increased the available range. We give the newcomers the once-over

Several leading laser printer manufacturers have begun concerted campaigns to convince us that laser printing is within our reach. The main thrust of this argument is aimed at corporate buyers – the sales pitch goes, "now you can afford to have a laser per desk, rather than one per office." This, of course, may sell large numbers of printers to big companies, but it also means end users (like us) may soon be able to afford our own. So what's on offer?

Laser Jet IIP

MACHINE: ALL STs
PRICE: £1,490
FROM: HEWLETT PACKARD
CONTACT: 0734 777828

The P stands for Personal, and the size of the machine does mean it could sit on the corner of a large desk. It's a completely new machine, with a new Canon laser engine. It only prints four pages per minute, but for many purposes this is adequate.

■ **Laser Jet IIP from Hewlett Packard, a neatly designed printer with a new Canon laser engine, compact enough to sit on your desk. Remember the P stands for Personal – not pence!**

The base machine comes with .5MByte of RAM, upgradable to 4.5MByte. A PostScript add-on cartridge is promised for around £800 in six months time – 2MBytes is needed to run it, though.

The price quoted above is the RRP for the printer, including VAT, but you may well be able to pick one up for around £1,150 when the market determines a street price.

The printer itself is a neat design with handy illuminated press switches for most selections. Paper feeds onto the top and can be hand fed from the front of the machine, placed in a low capacity 50-sheet tray slotting into its underside or put in a larger tray which slots into the front (adding to the printer's length). Print quality is good with the HP standard pair of Courier and Line Printer fonts now adding italic as standard.

LBP–4

MACHINE: ALL STs
PRICE: £1,506
FROM: CANON
CONTACT: 01 773 3173

This Canon printer, as you might expect, looks very similar to its HP variant. The main difference between the two is the LBP-4's fonts. These are directly scalable from within the printer. They are printed from outlines, like PostScript, but on the base machine are restricted to Swiss and Dutch outlines (as per GEM).

An add-on i.c. card, costing £171.35, will give Swiss Narrow, Bookman, Century Schoolbook, Avant Garde, Zap Calligraphy, Zapf Chancery and Dingbats. This set is suspiciously similar to the PostScript set on Apple's LaserWriter, but Canon will also be able to supply a PostScript font card around March next year.

The LBP-4 can apply special effects to any of its scalable fonts. These include outlines, drop shadows and pattern filling. Characters can be rotated through 360 degrees in one degree steps.

All this sounds pretty good, but currently there's little application software support for these features. Although Canon are working with most of the top companies to write drivers, how many of these will filter through to ST products is still uncertain.

F-800

MACHINE: ALL STs
PRICE: £2,173
FROM: KYOCERA
CONTACT: 0734 311500

■ **Kyocera's F-800, a stylish machine with a small footprint and a big selection of fonts. The F-800 includes the unique Prescribe language enabling you to produce high quality text and graphics**

This is a well-made entry level printer from the second largest laser engine manufacturer in the world. It is fully LaserJet II compatible, prints at 8 ppm and comes as standard with 1MByte of RAM.

As well as having a smaller footprint than the standard office laser, it is equipped with Courier, Times, Helvetica, Letter Gothic, Pretoria and Line Printer fonts as standard. They're available in roman, bold, italic and bold italic styles.

It also includes the Prescribe language which lets you produce high quality vector graphics and fancy text by programming the printer directly. This is a versatile language, unique to Kyocera, and should be suitable for direct control of the printer from an ST.

GLX600

MACHINE: ALL STs
PRICE: £1,490
FROM: GESTETNER
CONTACT: 01 387 7021

Laserprinter

MACHINE: ALL STs
PRICE: £2,215
FROM: IBM
CONTACT: 0705 694941

Two other recent releases are the GLX 600 from Gestetner and a low-cost entry from IBM called (with great flair and originality) the Laserprinter.

The GLX 600 is a fairly standard LaserJet II compatible 6 ppm machine with two cartridge slots, .5MByte of RAM and the same Courier and Line Printer fonts as the HP range.

The Laserprinter, designed and built by IBM, sports half the moving parts of most lasers, which should be good for reliability. It's LJ II and ProPrinter compatible and claims to have ten resident fonts as standard (in printer manufacturer's terms these often refer to different sizes and styles of the same typeface, though).

Dealer price for this one should level out at around £1,700. ■

Q

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THE LIGHT BRIGADE

WRITERS: NEIL GAIMAN & NIGEL KITCHING. ARTIST: NIGEL KITCHING.

CHAPTER ONE:

"THE PATH OF THE JUST"

PART FOUR

PICTURE SECURITY REPORT 00.098.
SUBJECT: THE CARROLL ROBBERY SEQUENCE CONTINUES...

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"IT WAS AT THIS POINT THAT THE FIRST ANOMALOUS INCIDENT OCCURRED. IN A SITUATION LIKE THIS PICTURE SECURITY CAN USUALLY CONTACT THE PROGRAM OWNER AND OBTAIN THE PROPER CLEARANCE IN MINUTES."

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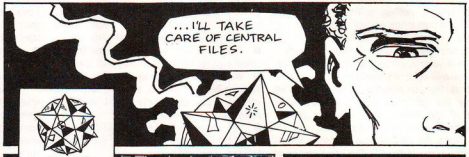
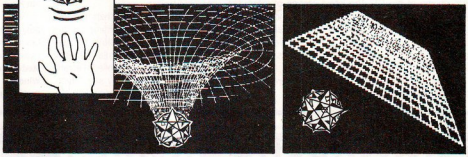
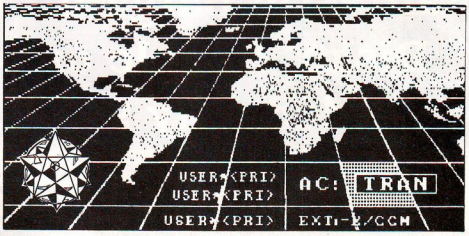
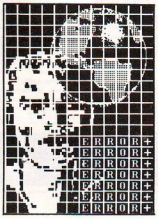
"WE EVENTUALLY GOT THROUGH BY MESSENGER."









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LAST WORD PLUS

In which a fiendish plot is unveiled to part you from another £2.95 at your local newsagent on Thursday 21st December

Well, *really!* You might have thought we'd have more tact. Just when the Christmas (bah humbug) fever reaches its pinnacle your attention will be distracted entirely from turkeys, stuffing, putting one inside the other and both inside yourself – and drawn irresistibly instead to *ST Format* 6, the hottest thing since, er, well, since *ST Format* 5, really.

And what a yomping great Yuletide (oops, 'scuse me) issue it's going to be, too! Come with us, then, on a journey through time as we show you just some of the goodies tightly packed and leaking over the edges of next month's mammoth white hot issue...

■ Who's the *real* desktop publishing heavyweight champ of the ST? The latest version of Signa's colossal *Calamus* stands toe to toe and slugs it out with Mirrorsoft's mighty *Fleet Street 3*. We won't be pulling any punches (and we won't be cracking any more corny boxing puns, either). Which one really does the business?

And we reveal just what's involved in serious desktop publishing on the ST.

■ Naturally we'll be making a special effort to bring you a Cover Disk packed to the little hole in the middle with a stunning playable demo (we're forbidden to say what it is just yet), as well as valuable utilities, magazine-linked programs and heaps more besides. "It's the 800K," remember, "that makes the *ST Format* Cover Disk what it is today" (*you're fired – ed*).

■ There's an exclusive review of the first full colour digitiser for the ST: money well spent?

■ We bring you an indepth feature on the booming world of ST midi, including fascinating interviews with top musicians, and hardly any mentions at all of Jingle Bells.

■ The ultimate in flight simulators? We get out and about with a trainer for the ST that's no toy but a genuine flight trainer.

■ What with it being Christmas (bah humbug) and all that we'll be reluctantly getting into the mood to give away enough stuff to give Rudolph the ruddy reindeer a hernia, including murder weekends, remote controlled Ferraris (er, no, not full sized) and, as they say, "much, much more" – you wouldn't get your hat on!

■ There's something about Christmas (bah humbug) – the Queen's speech, perhaps, or too many mince pies and pickled relatives – that just demands you shut the door, boot up your mean machine and while away a few happy hours on a those new *hard* games. And let's face it, you deserve it. So if you thought this month's game section was heavy, just wait till you see *STF6*! Talk about *Hard Drivin'* (we will, too): there's *Space Ace*, *Powerdrift*, *Toobin'*, *Jumping Jackson*, *Day of the Viper*, *Pictionary*, *Turbo Outrun*, *Gazza's Super Soccer*, *Batman*, *Chase HQ*, *The Untouchables*, *Safari Guns*, *Track Attack*, *Blade Warrior* and more. Just don't you dare go splashing out on any hyped titles before you check them out in *STF*.

■ And what a year it's been for games! We test your cool rating: how many of the year's top ten have *you* played?

We should point out, however, that we reserve the right to scrap any of the above items without notice – provided we find something even better to replace it. But whatever you find in next month's unseasonably hot issue you can rest assured it will be terrific.

And remember the *ST Format* promise: we guarantee there *won't* be any pictures of Sanity Clause, whoever he is. ■

(And finally: special thanks to artists Sally Meddings, Martin Parfitt, Angela Neal, Simon Windsor, Harriet Athay and Ollie Alderton for all their help.)

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The range of Atari ST computers offers something for everyone. From the games enthusiast who wants the challenge of the very best in arcade action, to the businessman who wants to make financial forecasts or faultless presentations. The ST offers high quality graphics, sound and speed for the gamer; whilst providing a fast, user friendly and affordable solution to business. The ST is now firmly established in the home environment and boasts a wealth of users in education, local government, television, and a variety of different businesses. Software for the range stretches to cover applications as diverse as ENTERTAINMENT, ACCOUNTS, ART, COMMUNICATIONS, COMPUTER AIDED DESIGN, DATABASES, DESKTOP PUBLISHING, EDUCATION, MUSIC, PROGRAMMING, SPREADSHEETS, WORD PROCESSING and more. For a full list of the software available, as well as details of the ST range, complete and return the coupon below. *All prices correct at the time of going to press. E&OE.*

520ST-FM EXPLORER PACK

WITH BUILT-IN 1Mb DISK DRIVE

The value for money offered by the Atari ST range is reflected in the Explorer Pack featuring the 520ST-FM computer with 512K RAM. The 520ST-FM computer now comes with a built-in 1 Mb double sided disk drive as well as a free mouse controller and a built-in TV modulator. The new 520ST-FM Explorer Pack includes the 520ST-FM computer, the arcade game Ranarama, a tutorial program and some useful desktop accessories. In addition, if you buy the Explorer Pack from Silica, we will give you the Silica ST Starter Kit worth over £200, FREE OF CHARGE. Return the coupon for details of our Starter Kit and of the full ST range.

£260 +VAT= **£299**

ONLY £2.51 PER WEEK. RETURN COUPON FOR DETAILS.

+ SM124 mono monitor: £398 INC VAT

+ SC1224 colour monitor: £598 INC VAT

1040ST-FM PROFESSIONAL PACK

NOW WITH TV MODULATOR

For the serious home user and the small business, we are pleased to announce a new package based around the 1040ST-FM. The 1040ST-FM has 1Mbyte RAM and a 1Mbyte built-in disk drive. In addition, the 1040ST-FM now comes with a TV modulator built-in. (The previously available 1040ST-F was designed for use with a monitor only and did not come with a modulator.) This modulator allows the 1040ST-F to be plugged directly into any domestic TV set, and comes complete with a lead to allow you to do so. The new Professional Pack from Silica includes the new 1040ST-FM with modulator plus four high quality software packages including a spreadsheet, database, word processor and programming language. This 'Professional Pack' software will enable you to get straight down to business with your new computer. In addition to this software (worth £384.85), if you buy the Professional Pack from Silica Shop, you will also receive the Silica ST Starter Kit (worth over £200), Free Of Charge. Return the coupon for further information.

£599 INCLUDING VAT

ATARI 1040ST-FM	(Computer)	**£499.99**
VIP PROFESSIONAL	(Spreadsheet)	**£149.95**
MICROSOFT WRITE	(Word Processor)	**£149.95**
SUPERBASE PERSONAL	(Database)	**£59.95**
BASIC DISK & MANUAL	(Language)	**£24.98**
	NORMAL RRP:	**£884.82**
	LESS DISCOUNT:	*-£385.82*
	PROFESSIONAL PACK PRICE:	**£499.00**

With SM124 mono monitor: £598 INC VAT

With SC1224 colour monitor: £798 INC VAT

2Mb & 4Mb MEGA ST

The MEGA ST computers are styled as an lightweight keyboard with a separate CPU, connected by a coiled telephone style cable. There are two versions of the MEGA ST, one with 2Mbytes of RAM and the other with 4Mbytes. Each version has a 3Mbyte double sided disk drive built-in to the CPU unit. The MEGA ST's do not come with modulator built-in and must therefore be used with a monitor. With every MEGA ST purchased, we will add the 'Professional Pack' software (worth £384.83) detailed above, plus the Silica ST Starter Kit (worth over £200), both Free Of Charge. Return the coupon for further details.

2Mb MEGA ST £899 INC VAT
+ mono monitor: £998
+ colour monitor = £1198

4Mb MEGA ST £1199 INC VAT
+ mono monitor = £1298
+ colour monitor = £1498

DTP PageStream £149 +VAT =£171.35

Desktop Publishing (DTP) is one of the fastest growing applications for personal computers. We are pleased to announce a powerful low cost package for the Atari ST called PageStream. PageStream costs only £149 (+VAT=£171.35) and, because it works with an Atari 1040ST and a Swissonic SLM-804 printer, you can be up and running with a complete system for less than £1000. Some of the features of PageStream are listed to the right. If you would like further information on this program, complete and return the coupon below, ticking the 'DTP' box in the corner.

- TEXT-FLOW AROUND GRAPHICS
- ROTATION OF TEXT & GRAPHICS
- SLANT OR TWIST ANY OBJECT
- POSTSCRIPT COMPATIBLE
- TAG FUNCTIONS
- AUTO/MANUAL KERNING & HYPHENATION
- GROUPING OF OBJECTS

WHY SILICA SHOP?

Before you decide when to buy your new Atari ST computer, we suggest you consider very carefully WHERE you buy it. There are MANY companies who can offer you a computer, a few peripherals and the top ten selling titles. There are FEWER companies who can offer a wide range of products for your computer and expert advice and help when you need it. There is ONLY ONE company who can provide the largest range of Atari ST related products in the UK, a full time Atari ST specialist technical helpline and an in-depth after sales support, including free newsletters and brochures delivered to your door for as long as you require after you purchase your computer. That one company is Silica Shop. We have been established in the home computer field for ten years with an annual turnover in excess of £8 million and can now claim to meet our customers requirements with an accuracy and understanding which is second to none. But don't just take our word for it. Complete and return the coupon below for our latest literature and begin to experience the Silica Shop specialist Atari service.

- **SILICA STARTER KIT:** Worth over £200, FREE with every Atari ST computer bought from Silica.
- **PROFESSIONAL PACK:** Free business software with 1040STFM and MEGA ST's bought from Silica.
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WITH EVERY ST - RETURN COUPON FOR DETAILS

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DO YOU OWN AN ATARI ST?

If you already own an Atari ST computer and would like to be registered on our mailing list as an ST user, let us know. We will be pleased to send you copies of our price lists and newsletters FREE OF CHARGE as they become available. Complete the coupon and return it to our Silica branch and begin experiencing a specialist ST service that is second to none.

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PLEASE SEND FREE LITERATURE ON THE ATARI ST

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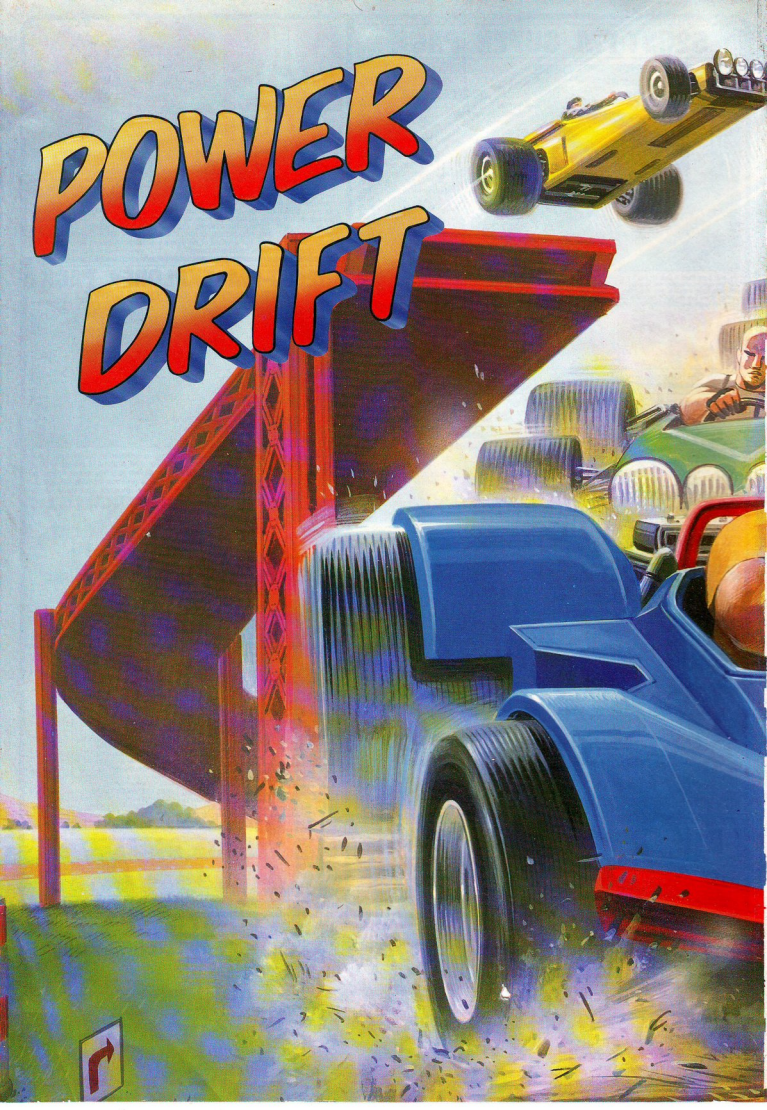
Do you already own a computer
If so, which one do you own?

DTP ☐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Screen shots from Atari ST version.

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